Study on the evaluation of the Action Plan for the implementation of the legal framework for electronic procurement (Phase II)

Analysis, assessment and recommendations

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European Commission

Internal Market Directorate-General

Brussels

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Glossary

AES (Advanced electronic signature)

An electronic signature which meets the following requirements:

- it is uniquely linked to the signatory
- It is capable of identifying the signatory
- It is created using means that the signatory van maintain under its sole control
- it is linked to the data to which it relates in such a manner that any subsequent change of the date is detectable.

Attestation

A document originating from a party other than the economic operators intended to demonstrate a quality or fact pertaining to the economic operator.

Authentication

The corroboration of the claimed identity of an entity and a set of its observed attributes (i.e. the notion is used as a synonym of “entity authentication”).

CA (Certification Authority)

A certification service provider which issues digital certificates for use by other parties. CAs is characteristic of many public key infrastructure (PKI) schemes.

CAN (Contract Award Notice)

A document completed by the Contracting Authority and made public after award of a contract.

CC3P (eCatalogue Classification in Public and Private Procurement)

CEN Project, its title is “Classification and catalogue systems for public and private procurement” (CC3P) to be carried out within the framework of Workshop eCAT 'Multilingual eCataloguing and eClassification in eBusiness’.

CEN (Comité Européen de Normalisation – European Committee for Standardization)

The European Committee for Standardization (ISO’s counterpart and the European entry point to UN/CEFACT). CEN Workshops are open consensus building platforms for contributing to standards, especially in the ICT area, and their product is a CEN Workshop Agreement.

CEN/BII

Business Interoperability Interfaces on public procurement in Europe (BII) is CEN Workshop providing a basic framework for technical interoperability in pan-European electronic transactions, expressed as a set of technical specifications that in particular are compatible with UN/CEFACT.

CEN/eInvoicing

A CEN Workshop providing an open platform for stakeholder consensus on the implementation of eInvoices in Europe.

CII (Cross-Industry Invoice)

The CII is the term for the UN/CEFACT standardised invoice, which is the standardised format proposed by the Expert Group for automated invoice exchange.

CN (Contract Notice)

A document completed by the Contracting Authority inviting companies to tender.

CPB (Central Purchasing Body)

A contracting authority which acquires supplies and/or services intended for contracting authorities, or awards public contracts or concludes framework agreements for works, supplies or services intended for other contracting authorities.

Contracting authority

State, regional or local authorities, bodies governed by public law, associations formed by one or several of such authorities or one or several of such bodies governed by public law, subject to the European regulatory framework on public procurement.

CPV (Common Procurement Vocabulary)

The CPV establishes a single classification system for public procurement aimed at standardising the references used by contracting authorities and entities to describe the subject of procurement contracts.

CROBIES

Study on Cross border Interoperability of eSignatures. Its objective is to propose solutions to remove barriers to cross border interoperability of qualified electronic signatures and advanced electronic signatures based on qualified certificates.

CSP (Certification Service Provider)

An entity or a legal or natural person who issues certificates or provides other services related to electronic signatures.

CWA (CEN Workshop Agreement)

A CEN Workshop agreement is a standardisation document, developed in a CEN Workshop. The latter is open to the direct participation of anyone with an interest in the development of the agreement.

Digital certificate

A small set of structured data that has been electronically signed by a Certification Authority to bind the identity of a legal or natural person to a 'public key' that can be used e.g. to verify electronic signatures created by that person.

Directive

A Directive is a legislative act of the European Union which requires Member States to achieve a particular result without dictating the means of achieving that result. Although obligatory to implement, Directives normally leave Member States with a certain amount of leeway as to the exact rules to be adopted.

DPS (Dynamic purchasing system

A completely electronic process for making commonly used purchases, the characteristics of which, as generally available on the market, meet the requirements of the contracting authority, which is limited in duration and open throughout its validity to any economic operator which satisfies the selection criteria and has submitted an indicative tender that complies with the specification.

eCERTIS

Public database containing information on (e)Attestations.

Economic operator

Generic term for a contractor, supplier or service provider in a public procurement. The terms "contractor", "supplier" and "service provider" mean any natural or legal person or public entity

or group of such persons and/or bodies which offers on the market, respectively, the execution of works and/or a work, products or services.

EDI (Electronic Data Interchange)

Electronic Data Interchange refers to the structured transmission of data between organisations by electronic means. It is used to transfer electronic documents from one computer system to another (i.e.) from one trading partner to another trading partner.

EEA (European Economic Area)

The Agreement creating the European Economic Area entered into force on 1 January 1994. It allows the EEA EFTA States (Norway, Iceland and Liechtenstein) to participate in the Internal Market on the basis of their application of Internal Market relevant acquits.

eID

An electronic representation of a certain subset of one or more attributes pertaining to an entity. While an entity has only one identity, it may have many electronic identities. It should be noted that eIDs can take many forms, and can be stored on many different types of media. An electronic identity or eID is not synonymous with an eID card: an eID card is only one of many tokens that can be used to support an eID.

eInvoicing Workshop

The CEN/ISSS Workshop providing consensus-based guidance for business on electronic invoicing. Two phases were completed by the end of 2009, and a third phase will follow in 2010.

Electronic attestation / eAttestation

A generic term for a dematerialised attestation. See under Attestation.

Electronic auction / eAuction

A repetitive process involving an electronic device for the presentation of new prices, revised downwards, and/or new values concerning certain elements of tenders, which occurs after an initial full evaluation of the tenders, enabling them to be ranked using automatic evaluation methods.

Electronic invoice / eInvoice

A generic term for a dematerialised invoice. See under Invoice.

Electronic Signature or eSignature

Electronic signature means data in electronic form which is attached to or logically associated with other electronic data and which serves as a method of authentication.

EPC (European Payements Council)

The European Payments Council is the decision making and co-ordination body of the European banking industry in relation to payments. Its purpose is to support and promote the creation of a single euro payments area (SEPA) through industry self-regulation. The EPC defines common positions for core payment services within a competitive market place, provides strategic guidance for standardisation, formulates best practices and supports and monitors implementation of decisions taken.

eProcurement

A public procurements initiated, negotiated and/or concluded using electronic means, i.e. using electronic equipment for the processing and storage of data, in particular through the Internet..

ePPS (electronic Product Property Server)

The ePPS project aims at defining a systematic and generic approach to implement an operational product property server.

The ePPS project will deliver a CEN Workshop Agreement (CWA) on «Guidelines for the design, implementation and operation of a product property server». These guidelines will be drawn on the basis of data tested mainly in two industrial sectors - heating, ventilation, air-conditioning, sanitary-ware (HVAC) and optical - and then extended to other industries.

e-PRIOR (eInvoicing and eOrdering Pilot)

Project established within the Commission to produce business requirements for eInvoicing systems in a public procurement context and cross border environment and set up an eInvoicing and eOrdering pilot to be used by DIGIT and some of its suppliers.

ERP (Enterprise Resource Planning)

An ERP is an integrated computer-based system used to manage internal and external resources including tangible assets, financial resources, materials, and human resources.

FTP (File Transfer Protocol)

FTP is a standard network protocol used to copy a file from one host to another over a TCP/IP-based network, such as the Internet.

Framework Agreement

An agreement between one or more contracting authorities and one or more economic operators, the purpose of which is to establish the terms governing contracts to be awarded during a given period, in particular with regard to price and, where appropriate, the quantity envisaged.

GPA (Government Procurement Agreement)

The GPA establishes a set of rules which (a) govern the procurement activities of its Parties and (b) enable the Agreement to function as an international one.

IDABC

Interoperable **D**elivery of European eGovernment Services to public **A**dministrations, **B**usinesses and **C**itizens. A Commission programme developing recommendations and, solutions and providing services helping European public services to communicate electronically.

Interoperability

A property referring to the ability of diverse systems and organisations to work together (inter-operate). The term is often used in a technical systems engineering sense, or alternatively in a broad sense, taking into account social, political, and organisational factors that impact system to system performance.

Invoice

The invoice is a document or a data set marked with the word ‘invoice’, formally specifying details of a (or part of a) trade and all settlement related information for the (or part of the) trade, explicitly and separately stating the applicable tax.

ISO (International Organization for Standardization)

Organisation developing international standards and other types of normative documents.

ITT (Invitation to Tender)

A *call for bids* or *call for tenders* or *invitation to tender* (ITT) (often called tender for short) is a special procedure for generating competing offers from different bidders looking to obtain an award of business activity in works, supply, or service contracts.

MDB (Multilateral Development Bank)

Institution, created by a group of countries, that provides financing and professional advising for the purpose of development. MDBs have large memberships including both developed donor countries and developing borrower countries. MDBs finance projects in the form of long-term loans at market rates, very-long term loans (also known as credits) below market rates, and through grants.

The following are usually classified as the main MDBs:

- World Bank
- African Development Bank
- Asian Development Bank
- European Bank for Reconstruction and Development
- Inter-American Development Bank Group

NES (Northern European Subset)

NES was formed in January 2006 with the objective to facilitate the establishment of a common platform for e-commerce in national and cross border trade. Currently, the initiative comprises government representation from six countries: Norway, Sweden, Finland, Great Britain, Iceland and Denmark. The technical development of NES is now carried out in the CEN/ISSS Workshop BII.

OASIS (Organization for the Advancement of Structured Information Standards)

Organisation developing international standards and other types of normative documents.

OJEU (Official Journal of the European Union)

The Official Journal of the European Union is the gazette of record for the European Union.

PDF (Portable Document Format)

PDF is a file format created by Adobe Systems in 1993 for document exchange. PDF is used for representing two-dimensional documents in a device-independent and display resolution-independent fixed-layout document format.

PEPPOL (Pan-European Public Procurement Online)

PEPPOL is a large scale pilot project, with the objective to pilot solutions to make it easier for European economic operators, in particular SMEs, from one country to respond electronically and in an interoperable way to public procurement opportunities and carry out the subsequent business transactions, including invoicing.

PKI (Public Key Infrastructure)

Public Key Infrastructure is a set of hardware, software, people, policies, and procedures needed to create, manage, distribute, use, store, and revoke digital certificates. In cryptography, a PKI is an arrangement that binds public keys with respective user identities by means of a certificate authority (CA). The user identity must be unique within each CA domain. The binding is established through the registration and issuance process, which, depending on the level of assurance the binding has, may be carried out by software at a CA, or under human supervision. The PKI role that assures this binding is called the Registration Authority (RA). For each user, the user identity, the public key, their binding, validity conditions and other attributes are made unforgeable in public key certificates issued by the CA.

Public procurement

A procedure initiated by a contracting authority with a view of acquiring goods, services or public works for the fulfilment of its tasks.

Qualified Electronic Signature

Advanced electronic signatures which are based on a qualified certificate and which are created by a secure-signature-creation device.

Qualified Certificate

A digital certificate issued by a supervised/accredited Certification Service Provider (CSP) and which meets the following requirements:

- the indication that the certificate is issued as a qualified certificate
- the identification of the Certification Authority and the State (European or foreigner) in which it is established
- the name (or pseudonym) of the signatory, to identify her/him
- signature-verification data which correspond to signature-creation data under the control of the signatory
- the indication of the period of validity of the certificate
- the identity code of the certificate
- the advanced electronic signature of the certification-service-provider (Certification Authority)

RSS (Really Simple Syndication)

RSS is a family of web feed formats used to publish frequently updated works—such as blog entries, news headlines, audio, and video—in a standardised format. An RSS document (which is called a "feed", "web feed", or "channel") includes full or summarised text, plus metadata such as publishing dates and authorship.

SEPA (Single Euro Payments Area)

The Single Euro Payments Area will be the area where citizens, companies and other economic actors will be able to make and receive payments in euro, within Europe, whether between or within national boundaries under the same basic conditions, rights and obligations, regardless of their location. It consists of the European Union Member States plus Iceland, Norway, Liechtenstein and Switzerland.

SLA (Service Level Agreement)

A service-level agreement is a negotiated agreement between two parties where one is the customer and the other is the service provider. This can be a legally binding formal or informal 'contract'.

Service Provider

Entities that provide services to end-users offer wide variety of business services and models ranging from supply chain and procurement services, software and integration services, invoice and related document transmission and networks and integration with financial services.

SIMAP

The SIMAP portal provides access to most important information about public procurement in Europe.

SME (Small and Medium-sized Enterprise)

The category of micro, small and medium-sized enterprises is made up of enterprises which employ fewer than 250 persons and have an annual turnover not exceeding 50 million euro, and/or an annual balance sheet total not exceeding 43 million EUR.

SMS (Short Message Service)

SMS is a form of text messaging on mobile phones.

SPOCS (Simple Procedures Online for Cross border Services)

SPOCS is a pilot project launched by the European Commission which aims to remove the administrative barriers European businesses face in offering their services abroad, notably in the context of the implementation of the Services Directive.

STORK (Secure Identity Across Borders Linked)

A pilot project to enable the interoperability of electronic identification solutions between participating Member States.

TED (Tenders Electronic Daily)

TED is the online version of the 'Supplement to the Official Journal of the European Union', dedicated to European public procurement.

TRUST (Transparent Reliable Unhindered Secure Tendering)

Part of a study for which the objective was to identify, analyse and compare optimum mechanisms for verifying in all EU/EEA Member States that the systems and tools existing or forthcoming in electronic public procurement comply with the requirements of the new public procurement Directives 2004/18/EC and 2004/17/EC.

TTP (Trusted Third Party)

In order to limit the transmission of identifiers and thus also the compilation of user profiles by third parties, the Trusted Computing Group makes it possible for a trusted third party to certify users' identities and confirm them to their correspondents without actually revealing the identities.

UBL (Universal Business Language)

UBL is a library of standard electronic XML business documents such as purchase orders and invoices. UBL was developed by a Technical Committee in OASIS (an industry standards consortium) with participation from a variety of industry data standards organisations. Under an agreement between UN/CEFACT and OASIS, UBL requirements will be taken up in modifications to the relevant UN/CEFACT standards documents, including the CII.

UN/CEFACT

The United Nations' Centre for Trade Facilitation and Electronic Business has a global remit to secure the interoperability for the exchange of information between private and public sector entities. It has developed UN/EDIFACT, the international standard for electronic data interchange together with supporting components and methodologies.

UNCITRAL

The United Nations Commission for International Trade Law.

UN/EDIFACT

The United Nations / Electronic Data Interchange for Administration, Commerce and Transport.

VCD (Virtual Company Dossier)

The Virtual Company Dossier (VCD) was developed within the PEPPOL pilot project, as a container used to exchange information among tenderers and procurers in the tendering stage to improve the outcomes of the tendering process.

XML

XML (Extensible Markup Language) is a set of rules for encoding documents electronically. It is defined in the XML 1.0 Specification produced by the W3C, and several other related specifications, all gratis open standards.

Executive summary

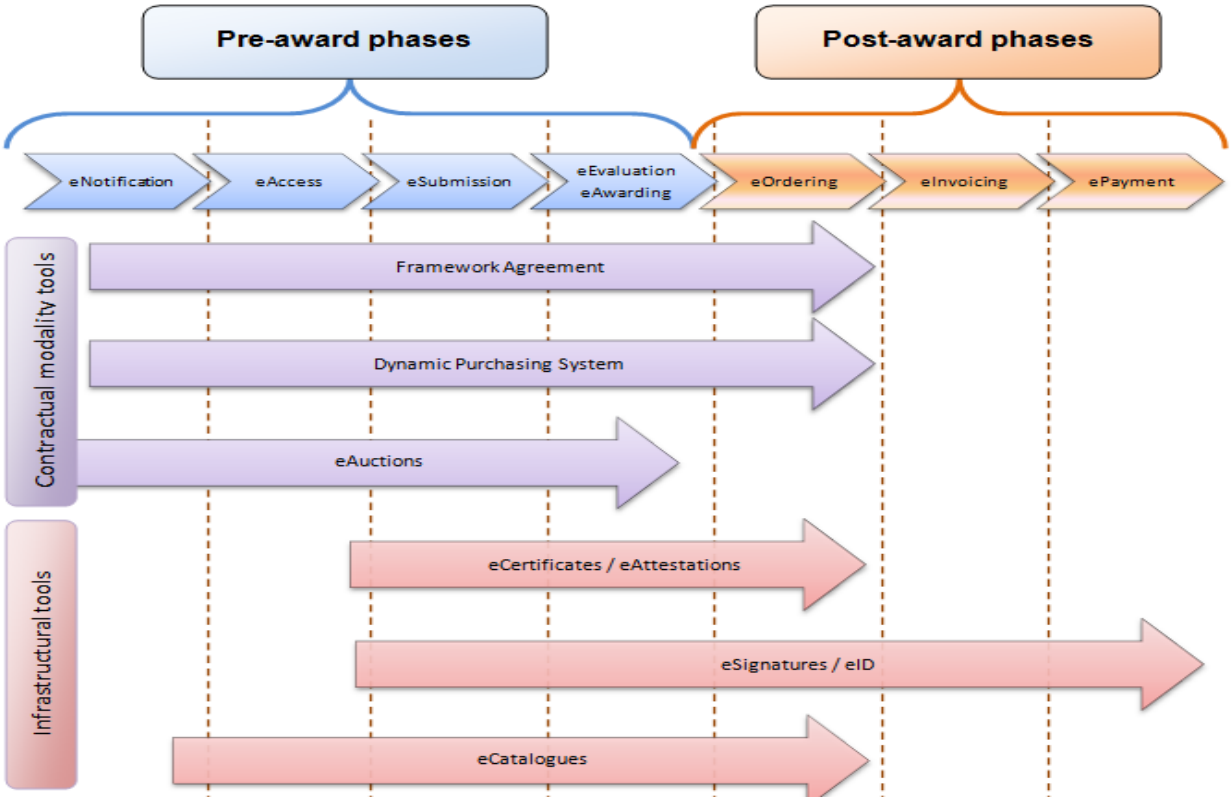
Introduction – EU eProcurement policy and the 2004 Action Plan

Public procurement spending represents a very substantial part of the EU economy. Eurostat data for 2008 estimated the total value of public procurements in the EU-27 as amounting to 17,30% of EU GDP, or about 2,16 trillion EUR. Given the magnitude of these budgets, there is a great public interest in making sure that these funds are well managed, and that any inefficiencies are eliminated. This awareness has been a key driver behind European and national interest in electronic public procurement: by using electronic means of communication in public procurement, the expectation is that significant improvements in efficiency could be enabled, resulting in a drastic reduction of costs.

Moreover, eProcurement could create clear additional advantages for all actors in the public procurement process. The use of electronic means of communication should make participation in public procurements easier and cheaper for economic operators. This should also reduce administrative burdens, thus further driving down the required effort and cost, which could also improve the accessibility of public procurement opportunities for SMEs. In addition, the use of new technologies – eSignatures, eCatalogues, eInvoicing, etc. – could serve as a good practice model for other contexts as well, since these technologies could be applied equally in private procurements or other eBusiness contexts. Conceivably, cross border procurements could also be facilitated, expanding the market for all economic operators. As this would increase participation in procurements, part of this benefit would accrue to the contracting authorities: competition should drive down costs and/or improve the quality of the provided supplies, works or services, which ultimately also benefits society as a whole through a more efficient spending of public funds.

To unlock this potential, the 2004 Public Procurement Directives 2004/17/EC and 2004/18/EC introduced several provisions aimed at enabling eProcurement uptake in all Member States. These Directives contained new rules that would allow eProcurements to be organised, including the electronic publication of procurement notices, electronic communication (including the submission of bids), and new fully electronic procurement procedures such as dynamic purchasing systems (DPS) and eAuctions.

Globally, the new regulations were expected to support a wide range of eProcurement phases and tools, as depicted in the graphic below:



Overview of possible phases and tools in an eProcurement process

However, it was recognised already in 2004 that the correct national transposition of the Directives by the prescribed deadline of 31 January 2006 would be very ambitious. In addition, the establishment of a legal framework that was considered as conducive to eProcurement would not necessarily be sufficient to ensure that implementation and take-up in practice would occur at an optimal level. Finally, it was clear that the inappropriate implementation and use of eProcurement could also create certain negative impacts. For instance, an excessive use of framework agreements could result in less competition, negating the expected cost benefit of increased efficiency. Similarly, an inappropriate use of automated evaluation could lead to suboptimal results, with economic operators focusing more on elements that can be automatically evaluated (such as price) and less on subjective but equally important characteristics such as quality. Finally, there is the ever present risk of modernisation resulting in an unequal spread of benefits: inappropriate eProcurement implementations could lead to a marginalisation of SMEs and/or foreign economic operators.

To address these points, the Commission adopted the 2004 Action Plan for the implementation of the legal framework for electronic public procurement, aimed at ensuring a timely and correct implementation of the Directives, and maximising the chances of seeing the envisaged benefits materialise in practice. While the Action Plan should be considered in its totality, it is built around three key objectives:

- Ensure a well functioning Internal Market in electronic public procurement:
- Achieve greater efficiency in procurement, improve governance and competitiveness
- Work towards an international framework for electronic public procurement

31 specific measures were grouped together under these objectives, each expected to contribute to the realization of a specific vision of eProcurement. Before examining this specific vision, it is however useful to first consider the context in which the Action Plan was created: the eProcurement landscape in the EU in 2004.

Looking back – eProcurement in 2004

At the time of the Action Plan's adoption, the earlier European Directives on public procurement did not yet foresee explicit support for eProcurement. As a result, there were large differences between the Member States' legal frameworks and their available infrastructure. The main characteristics of eProcurement in 2004 will be summarised below, based on the 2004 Impact Assessment which preceded the Action Plan.

Legal framework for eProcurement and implementation plans for the new Directives

In 2004, 17 out of 25 Member States already had provisions in their national frameworks with respect to the use of electronic means in public procurements. In 7 Member States, specific procedures (including eAuctions and DPS) had already been regulated.

With respect to the newly adopted Directives, Member States were optimistic about the timely implementation of the Directives, with the majority of implementations planned for 2005. As for the question of correct implementation, most Member States indicated that implementation guidance from the Commission would be appreciated and would be likely to impact their regulatory implementation choices. The main concern flagged at this time was the question of adding further details to the provisions of the Directives (so-called gold plating) to facilitate their application in practice. Guidance from the Commission was seen as useful to minimise the need for gold plating, namely to avoid the creation of interoperability barriers.

Infrastructure for eProcurement

The 2004 Impact Assessment identified 36 major public procurement systems in total, 21 of which were operational at the national level, 9 at the regional level, and 6 which were sector/context specific. These 36 systems covered 16 out of the 25 Member States. In the remaining 9 Member States, no major eProcurement systems were available.

With respect to available functionalities in the 36 systems, the following features were reported:

- Notification about tenders: available in 33 systems, i.e. 92%.
- Publication of tenders: 17 systems, i.e. 47%.

- Management of receipts/submission of tenders: 9 systems, i.e. 25%.
- Evaluation of tenders: 3 systems, i.e. 8%.
- Ordering: 8 systems, i.e. 22%.
- Invoicing: 1 system, i.e. 3%.

Clearly, the emphasis in 2004 was very much on the simpler pre-award phases (notably the one way processes of eNotification and eAccess), with eSubmission being much rarer, and post-award phases being almost non-existent. Experiences with advanced forms of eProcurement were similarly rare: at the operational level, experiences with eAuctions were restricted to 4 Member States, 1 Member State for DPS, and 6 Member States for eCatalogues.

Interoperability (or rather: cross border accessibility) was seen as a major issue. Member States with a functioning eProcurement system noted that their infrastructure generally operated as a strictly national initiative, which was difficult or impossible to use by foreign economic operators in practice. Specifically with respect to electronic signatures, 15 out of 25 Member States declared that advanced electronic signatures had been introduced (although this didn't necessarily mean that they were used in eProcurement). Actual eSignature usage was very limited, with only Austria reporting significant uptake. All Member States acknowledged the interoperability challenges in the cross border use of such signatures, and further action by the European Commission to help settle this issue was invited.

eProcurement policy

In order to support the roll-out of eProcurement, 23 Member States had adopted action plans or overall objectives. However, the scope of these strategies/action plans varied quite widely, as did their focus and level of detail. This divergence was considered likely to result in deployment at varying speed across the EU, creating a risk of market fragmentation. Human resource management and change resistance were seen as substantial barriers to deployment and uptake, both within public administrations and within economic operators. Overcoming cultural barriers, habits and institutional inertia was noted by some Member States as potentially the greatest challenge.

General conclusions on the 2004 status of eProcurement

In summary, in 2004 the availability of eProcurement systems was limited to slightly more than half of the Member States (16 out of 25), and support for two way communication within these systems (specifically eSubmission, and thus obviously also eOrdering, eAuctions, DPS etc) was quite limited. Member States noted that their existing systems generally operated in isolation and would be hard for foreign economic operators to use. Due to the fact that public procurement occurred largely in a decentralised way, it would be hard for Member States to address these issues consistently.

To remedy these problems, the main points of attention raised by the Member States were the need for implementation guidelines, compliance verification guidance, and support in bridging interoperability gaps. It is in this context that the Commission drafted the 2004 Action Plan.

Vision of the Action Plan and driving principles

As noted above, the Action Plan contained 31 measures which were expected to establish a vision for eProcurement best summarised on p.10 of the Commission Staff Working Document annexed to the Action Plan: "Use of electronic means should guarantee in practice that any business in Europe with a PC and an internet connection can participate in a public purchase conducted electronically." The desired end goal was an environment in which the fragmented landscape of 2004 would be eliminated to a large extent.

To that effect, the strategic choices of the Action Plan were oriented towards accelerating the adoption of eProcurement and ensuring market access by establishing the necessary building blocks. The Action Plan was built on the expectation that Member States would adopt eProcurement, and that these two goals (accelerate adoption and ensure market access) would occur naturally once the existing barriers had been eliminated and a favourable ecosystem for eProcurement was put in place. Generally, the approach was relatively 'light touch', and did not entail many obligations on the Member States' side.

Essentially, the following strategic priorities can be recognised in the Action Plan:

- The Commission chose to support the legal implementation process within the Member States through a series of measures aiming to achieve a common understanding, specifically by drafting an interpretative document, through the development of training demonstrators, and by providing support to them on a continuing basis.
- Member States were expected to implement fully electronic systems at national level (with a specific focus on appropriate tools for automated collection and publishing in Tenders Electronic Daily (TED), i.e. on eNotification), drawing on the common functional requirements identified by IDABC, assess the compliance of existing systems with the Directives, and ensure that the provisions of the Directives would be respected whenever they decided to use eProcurement.
- New Standardised notice forms and the Common Procurement Vocabulary (CPV) were given a prominent role: the Commission was to update these, and the Member States would be required to use them (although not necessarily in an electronic format). The Commission was also expected to present a blueprint for a fully electronic system for the collection and publication of procurement notices on TED.
- Member States were required to evaluate and update certain national policies, including notably by adopting national action plans to support the implementation of eProcurement (including quantifiable targets), to stimulate eProcurement participation (both by the most powerful buyers and SMEs), and by collecting statistical information on eProcurement uptake.
- Member States were required to apply qualified electronic signatures (including for cross border procurements) if required by national law; thus, here too, the choice to use electronic means (in this case the qualified signature) lay with the Member State.
- The Action Plan took a very low profile approach towards standardisation issues, relying mainly on ongoing IDABC activities, studies to be organised, and monitoring progress in standardisation bodies (notably CEN/ISSS). This applied to eSignatures, eCatalogues, eInvoicing, and eOrdering.
- With respect to eAttestations, the Action Plan built on the assumption that these would become more prevalent, and foresaw specific measures aiming to identify which eAttestations were most commonly used in practice.

- Knowledge dissemination and exchange of good practices were given a prominent role, both through the aforementioned studies and through ancillary forums such as the Public Procurement Network.
- Finally, with respect to the international dimension, the Action Plan focused on the revision of the Government Procurement Agreement (GPA), which acts as a common regulatory framework for international public procurements, and on liaising with other international bodies, including standardisation organisations, the Multilateral Development Banks and third countries.

By following these priorities, it was envisaged that the necessary building blocks for cross border eProcurement would be established, and that the ideal vision of a barrier free electronic public procurement market could be realised, with accelerated take-up in practice.

It is clear that the key success criteria to evaluate the impact of the Action Plan should also be defined with respect to those two points: on the one hand the elimination of any barriers to market access, and on the other actual take-up, both at the strictly national and cross border level.

The state of play – eProcurement in 2010

Some of the principal current trends and observations with respect to the development of eProcurement will be summarised below, and compared to the 2004 status.

Legal framework for eProcurement – timely and correct implementation of the Directives

While transposition is now complete, the evaluation shows that only 11 out of 27 Member States (41%) have transposed the Directives within their applicable deadlines. It should however still be acknowledged that transposition took notably shorter for the new Directives than for the preceding European framework. Thus, while transposition was by and large not timely in the strictest sense, the delays were generally limited and at any rate significantly smaller than with similar efforts in the past.

Infrastructure for eProcurement

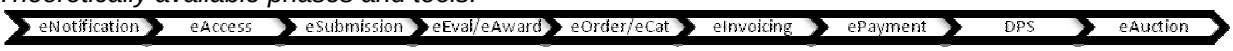
Based on the current evaluation report, at least rudimentary systems are now known to exist in all but two countries: Greece and Liechtenstein. Thus, 26 out of 27 Member States now have eProcurement systems in place, which is a very significant step forward compared to the 16 out of 25 Member States in 2004.

Looking at the number of major eProcurement systems in place, a shortlist was created during the evaluation of 129 sites (22 Central Purchasing Bodies (CPBs), 81 portal sites and 26 platforms). This is a roughly fourfold increase of available major eProcurement systems compared to the 36 systems identified in 2004. Clearly, the overview of the present evaluation report focuses on the main known eProcurement sites and is therefore not comprehensive. However, this was also the case in 2004, so

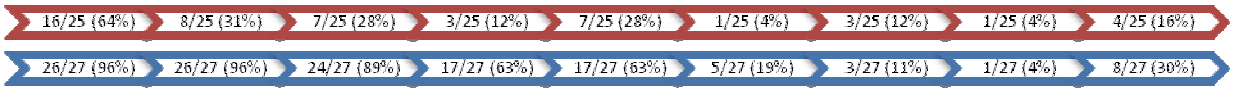
that the identified trend appears to be valid: the availability of national eProcurement infrastructure has certainly increased in the past six years.

A snapshot of available functionalities shows that the maturity of infrastructure has similarly improved since 2004:

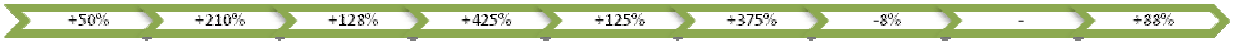
Theoretically available phases and tools:



2004 (red) and 2010 (blue) availability of phases and tools in key eProcurement systems among the Member States:



Evolution between 2004 and 2010:



Thus, availability of all phases and tools appears to have progressed substantially, with the exception of ePayment and DPS.

Usage of eProcurement

Uptake of eProcurement in the Member States varies from phase to phase, and from tool to tool. Summarizing the key findings of evaluation with respect to the main phases and tools emphasized by the Action Plan, the following findings can be forwarded:

- **eNotification:** based on official TED statistics, usage of eNotification has risen significantly in most countries between 2004 and 2010, with an average EU uptake percentage of 90,2% in 2009 (up from 7,9% in 2004), meaning that 90,2% of notices sent to the OJEU are sent in a structured electronic format.
- **eSubmission**: it is very difficult to assess where submission is being used to a significant extent, since quantitative data is only rarely made available, and the scope of the data (i.e. transactions or processes covered) is generally not defined or incomparable between countries. Based on the limited available data and the impressions of the study team, several countries have been able to implement successful eProcurement business cases, generally following one of three models:
    - CPBs using framework agreements for commodity purchases (supplies and services). The main successful examples of this approach based on the maturity of the infrastructure and any available usage/turnover figures are the Austrian *Bundesbeschaffung GmbH* (http://www.bbg.gv.at/), the French *Place de marché interministérielle* (www.marches-publics.gouv.fr), the Italian CONSIP (http://www.consip.it/on-line/Home.html), and the UK procurement portal BuyingSolutions (http://www.buyingsolutions.gov.uk/. 17 countries in total have presently established CPBs using framework agreements[1]. In 2009, TED statistics

[1] Austria, Belgium, Denmark, Finland, France, Germany, Hungary, Ireland, Italy, Latvia, Lithuania, Malta, Portugal, Romania, Slovakia, Spain and the UK

show that 11,17% of framework agreements are concluded by CPBs, which is significantly higher than the average of 7,32% for all contracting authorities (including non-CPBs). Using this approach, contracting authorities can build on the expertise of CPBs to organise their procurements in a flexible way (since framework agreements have already been concluded by the CPB) and without the traditional disadvantage of lower competition within a framework agreement (since the CPB can maintain framework agreements with a larger number of suppliers).

- The development by a public body of shared eProcurement infrastructure which a more or less defined group of contracting authorities can use to conduct their own procurements without a CPB being involved. This infrastructure can be developed at the national, federal or regional level, depending on the administrative organisation and policy preferences of a country. This approach is found in all countries where eProcurement infrastructure has been identified (i.e. all except Greece and Liechtenstein), although the scope and level of sophistication varies substantially. Turnover and usage figures are not commonly published, and it is typically not indicated whether turnover figures relate to any publications via the infrastructure (i.e. eAccess only) or whether they relate to eSubmissions as well. There are however a few cases where such data is available and indicates successful uptake, notably in Ireland (the eTenders Public Procurement portal - www.etenders.gov.ie), Italy (*Acquisti in Rete* - http://www.acquistinretepa.it/), Germany (*Vergabeplattform des Bundes*) www.evergabe-online.de) and Norway (Ehandel.no - www.ehandel.no). This model allows a contracting authority to organise eProcurements without having to implement their own infrastructure, but while keeping full control over the process as a contracting authority.
- Decentralised models in which contracting authorities can select from a wide range of eProcurement solution providers which meet predefined criteria (either technical criteria or actual accreditation). This approach was found in 15 countries, including 14 Member States[2], comprised mainly of countries with stronger regional/local autonomy or public procurement purchasing power or where there is a stronger tradition of public-private collaboration. Key examples include the Austrian Vemap procurement platform (www.vemap.com), Mercell (identified as a key solution in several Nordic and Baltic countries - Denmark, Estonia, Latvia, Lithuania, Norway and Sweden - as well as Germany), the French LT-MPE-platform (http://www.atexo.com/LT-MPE.htm) and the SIS-ePP-platform (http://www.sis-france.com/5.aspx), and the German Administration Intelligence AG platform (http://www.ai-ag.de/). As there can potentially be an huge number of implementations/uses of such platforms, their success is hard to quantify.

Obviously, mixed models exist in practice. It is difficult to compare the effectiveness of each of these models, due to the lack of comparable information on investment and returns. Based on available quantitative information and the fact that they are consistently presented as high revenue flagship initiatives when they exist in the country profiles, the first model (CPBs using framework agreements) appears to be most successful in ensuring higher quantity take-up and in realising cost savings.

- **eInvoicing:** eInvoicing is reported to be used to a significant extent in 6 countries, notably the Czech Republic, Denmark, Finland, Norway, Sweden and Spain. While still only a small group, this is none the less a notable increase over the single system reported in 2004.
- **ePayment:** while there do not appear to be any real barriers to its use in the European Union, this is a feature which is only rarely reported as being supported in eProcurement systems. Only 4 countries report using ePayments in their systems: Ireland, Finland, Norway and the

[2] Austria, the Czech Republic, Denmark, Estonia, France, Germany, Hungary, Latvia, Lithuania, Norway, Poland, Portugal, Romania, Sweden, and the UK

UK (i.e. only in common law and Nordic countries). This may be due to the fact that implementation of ePayment modules in the absence of other post-award phases (notably eInvoicing) offers only limited added value, since automated processing would at any rate not be possible.

- **eAuction:** compared to 2004, the number of countries using eAuctions in a systematic/frequent way has risen from 2 to 7, with 4 more using them infrequently or regionally, and 6 others reporting that development of eAuction systems were underway. The available information suggests that eAuctions can indeed realise significant cost savings, with figures of 10-20% being commonly quoted.
- **Framework agreements:** TED statistical data shows that the use of framework agreements has increased substantially in the past four years, with 25.563 concluded contracts reported in 2010, up from 6.836 in 2006. In four countries (Denmark, France, the Netherlands and the United Kingdom) more than 10% of notices submitted to TED relate to framework agreements. Thus, experiences with framework agreements appear to be largely positive, with Austria, the UK, Italy, Finland, France and Sweden reporting that framework agreements are a crucial part of their procurement policies (i.e. there is a policy or encourage or require the use of framework agreements). No specific concerns with respect to a potential negative impact on competition have been flagged in these countries. However, available statistics (notably TED data) suggest that framework agreements are substantially used to set up a framework with only a single economic operator, which would inevitably harm competition. There is no available quantitative data is on the exact magnitude of this negative impact.
- **DPS:** based on the analysis of country profiles and TED statistical data, it seems that DPS have failed to find significant uptake in the surveyed countries, in the sense that they are not reported to play an important strategic role in national procurement strategies, nor do they seem to account for a substantial part of the European eProcurement market.

In summary, the use of eNotices appears to have evolved positively in practice, but this is much less so for eSubmission and subsequent phases. At least at the national level, barriers to using eProcurement have largely been removed. The primary challenge has become the assurance of significant uptake, including by identifying optimal use cases and creating incentives for stakeholders.

Cross border accessibility

One of the main goals of the Action Plan was to eliminate barriers to cross border eProcurement. Within the first objective, measures focused mainly on promoting eSignatures (notably qualified eSignatures), and on encouraging the identification and follow-up of interoperability issues through IDABC and interactions between Member States and with standardisation bodies.

The desired goal of cross border accessibility of eProcurement infrastructure was largely not achieved. eSubmission currently relies on two possible options in order to ensure that economic operators are sufficiently identified and that the integrity and authenticity of their communications is guaranteed: either they require the use of username/password authentication following prior registration, or they use authentication systems supported by cryptography, e.g. using smart cards (so called Public Key Cryptography, or PKI). The Action Plan targeted mainly the latter systems.

In practical terms, username/password based systems (as used mainly in Ireland and the UK) currently pose no interoperability challenges other than the completion of the registration process

(which may be complicated due to language barriers or the need to provide information which is only available at the national level). PKI systems on the other hand – as legally required in 14 countries[3], and as may be required by the contracting authority in 7 more[4] – are currently almost universally unable to accept foreign solutions, meaning that foreign economic operators will be unable to use eSubmission unless they can obtain a PKI solution issued in the country in which they wish to submit an offer. eSignatures thus remain a barrier to cross border eProcurement in practice, due to the fact that their use is always mandatory in 13 Member States, and that they may be required in 5 more.

Apart from the issue of eSignatures, four specific eDocument types were targeted by the Action Plan: eAttestations, eInvoices, eOrdering and eCatalogues. The current situation can be summarised as follows:

- **eAttestations**: the existence and use of eAttestations was examined in the 2008 Feasibility study on the electronic provision of certificates & attestations most frequently required in public procurements[5]. This study looked at the state of play in 32 countries (including all Member States and EEA countries), and found that authentic electronic evidences were still altogether rare in the Member States. The main approach used by the surveyed countries to handle the problems related to attestations is to install electronic procedures that eliminate or reduce the need for attestations, either in a paper or electronic form. The use of self-declarations, existing in some form in 10 out of 32 countries, plays a significant role in practice as a surrogate for separate official eAttestations in public procurements, which are virtually non-existent.
- **eInvoices/eOrdering**: uptake remains largely limited to the strictly national level. While international standardisation work is progressing, use in practice is still centred around national variations of these standards, making cross border use impossible in practice. Apart from the standardisation issues, legal challenges also remain for eInvoicing. It was noted to be particularly complex to ensure that an eInvoicing solution which is compliant with legislations in a specific Member State would also satisfy the requirements in a different Member State. In practice, eInvoicing service providers need to assess on a country by country basis whether their solutions comply with local laws, frequently requiring direct contacts with local tax administrations. Thus, both legal and technical barriers to the cross border use of eInvoices remain.
- **eCatalogues:**. there is no widespread use yet of standards like UBL or UN/CEFACT XML Schemes. Some countries have partially implemented these standards (again with national variations), but there is as of yet very little interoperability in this domain. As a result, investments in this area by economic operators do not yet provide an optimal return.

eProcurement policy

As noted above, the Action Plan required Member States to evaluate and update certain national policies, including notably by adopting national action plans to support the implementation of eProcurement (including quantifiable targets), to stimulate eProcurement participation (both by the most powerful buyers and SMEs), and by collecting statistical information on eProcurement uptake.

[3] Croatia, France, Lithuania, Slovakia, Bulgaria, Czech Republic, Poland, Slovenia, Austria, Belgium, Italy, Portugal, Spain, and Greece.

[4] Iceland, Malta, The Netherlands, Norway, Romania, Sweden and Cyprus.

[5] See http://ec.europa.eu/internal_market/publicprocurement/docs/eprocurement/ecertificates-study_en.pdf

These requirements have not been followed systematically in practice:

- Only 18 out of 32 examined countries have adopted national action plans containing "measurable performance targets" as required by the Action Plan, with 14 countries having either no action plan or only loosely defined high level policy declarations. No action plans adopted by powerful national buyers have been identified in the course of the present study.
- The evaluation showed that data collection is still in its infancy in most Member States. Good practices were identified in 7 countries, with France being the main Member State that is systematically collecting comprehensive statistical data. Generally, efforts in this area appear to have been too low within most Member States: statistical data is scarce, generally limited in scope, and not comparable between countries.
- With respect to SME participation, a study of the country profiles and national action plans indicates that several countries have adopted policies to stimulate the participation of SMEs, with notable specific policies having been identified in Ireland, Italy, France, and the UK (particularly Scotland). These policies have been found to be effective in encouraging participation and winning rates in specific initiatives; e.g. the Italian MEPA reports that 97% of registered users are SMEs, and that they obtain roughly 90% of MEPA spending[6] (as compared to a known[7] 2005 Italian average of 49% of public procurement budget awarded to SMEs); similarly, French figures for the period between 2006-2008 are available from the Resah-idf (the *Réseau des Acheteurs Hospitaliers d'Ile-de-France* – Network of Hospital Buyers of the Ile-de-France region), which identified an increase of contracts won by SMEs in the amount of 72% (7,2 M€) in the period 2006-2008[8]. However, it is not clear if these trends are universal or restricted to these use cases, and whether they also exist at the national level (i.e. considering all instances of eProcurement, rather than only those relying on selected systems), as there is no data available on this point.

[6] Source: « The determinants of suppliers' performance in eProcurement: evidence from the electronic public administration's marketplace (MEPA), Gian Luigi Albano, Federico Dini, Roberto Zampino and Marta Fana; see http://www.consip.it/on-line/Home/Ricercaesviluppo/UfficioStudi/Ricercheincorso/documento4679.html

[7] See http://ec.europa.eu/enterprise/newsroom/cf/itemshortdetail.cfm?item_id=3376

[8] See http://www.pactepme.org/docs/pacte/gc/RESAH-IDF/bilan_2006-2008.pdf

Summary of the 2010 eProcurement landscape – did the Action Plan vision materialise?

Based on the overview above, a few general conclusions can be drawn, separate from the assessment of each individual objective or measure. Firstly, it is clear that the Action Plan was effective in a number of respects:

- The legal framework has been implemented relatively quickly, certainly in comparison with the preceding Directives.
- eProcurement policies were clearly driven at the national level via the encouragement of action plans. This in turn drove the development of infrastructure, and put eProcurement on the political agenda. The fact that infrastructure availability has increased and that uptake in most countries has also advanced significantly is no doubt at least partly the Action Plan's merit.
- Specifically with respect to eNotification, the approach taken in the Action Plan was a clear success. The infrastructure is in place and used to a very significant extent by most countries.
- European and international standardisation efforts have progressed as well under European influence, although uptake at the national level still requires too many implementation choices to permit any real interoperability.
- Knowledge dissemination and awareness has improved significantly, through the multitude of studies, projects and pilots initiated at the European level as prescribed by the Action Plan. This has led to a greater understanding of eProcurement possibilities and barriers.

Generally, while the impact of the Action Plan has been positive, it cannot be qualified as a uniform success. Notably, the litmus test forwarded by the Commission Staff Working Document annexed to the Action Plan ("any business in Europe with a PC and an internet connection can participate in a public purchase conducted electronically") has clearly not been achieved, with several clear accessibility barriers still remaining in virtually all countries, except those that have based their approach entirely on simplicity and pragmatism.

Evaluating the impact of the Action Plan – key conclusions

Based on this overview, our final conclusions on the impact and effectiveness of the Action Plan will be summarised below on the basis of the principal evaluation questions.

To what extent have public procurement procedures in the EU and EEA Member States been 'computerised', i.e. migrated from paper to the use of electronic means?

It is clear that the availability and maturity of eProcurement infrastructure has increased significantly since 2004. However, the question of migration from paper to electronic means relates primarily to uptake of this infrastructure in practice. The impact in this respect differs from phase to phase, and from tool to tool. The primary conclusion of the evaluation exercise is that there is a clear lack of data to assess this point. Only a few countries provide quantitative data, and it is rarely clarified whether the data relates to:

- Procurements which are concluded entirely using electronic communications, or whether only some of the phases (e.g. eNotification and eAccess) are done electronically;
- eProcurement from a supply perspective (i.e. the contracting authority permits the use of electronic communications) or from a demand perspective (i.e. economic operators actually use electronic communications, and if so, how many of them);
- Exclusively electronic models (where only the use of electronic means of communication is permitted) or mixed models (where economic operators may choose freely which means they prefer).

Despite this data deficiency, the available information is none the less sufficient to illustrate a few key trends. Apart from the use of eNotifications (where a positive evolution has already been signaled above), the following observations can be seen as particularly relevant:

- Three countries have implemented laws or policies in which eSubmission is mandatory for certain types of procurements. A key example of this approach is Portugal, where eSubmission through the platform used by the contracting authority became mandatory for all public procurements above a certain threshold. Austria, Italy and Sweden combine such obligations with the use of framework agreements: certain contracting authorities (typically at the federal, central or national level) are required to use the framework agreements made available to them. In addition, in France contracting authorities may impose the use of electronic procedures for procurements above EUR 90.000 as of 1 January 2010. This has resulted in substantial usage in practice:
    - The Austrian eShop (http://www.bbg.gv.at/kunden/elektronisch-einkaufen/e-shop/) reported a turnover of 830 million EUR in 2008, generating a cost savings of 178 million EUR over that same period of time[9]. Based on Eurostat data for 2008, this represents approximately 1,6% of Austria's public procurement budget (estimated at 53 billion EUR).

[9] See http://www.bbg.gv.at/fileadmin/daten/Downloads/ba/taetigkeitsbericht_2008.pdf

- The French Economics Observatory for Public Purchasing (*Observatoire Economique de l'Achat Public* (OEAP)) [10] reported that 4.3% of public procurements permitted the use of eSubmission in 2008[11]. It should be noted however that this precedes the entry into force of the new rules allowing eSubmission to be made mandatory, and thus does not yet reflect any impact of the new policy. In addition, it does not provide an indication of actual usage
- The Swedish Public Procurement Information Portal (http://www.avropa.se/) reports that annual turn-over is around 684 million EUR, approx. 8% of the total expenditure for the central government from external suppliers, and around 1,3% of total Swedish public procurement budget[12]. This single figure should not be considered representative for the Swedish eProcurement market however, since this is highly decentralised and relies on a large number of eProcurement portals and service providers.
- Italian State central administrations are obliged to use the framework contracts stipulated by Consip, often run via the national e-procurement portal www.acquistinretepa.it. The site indicates that the volume of eProcurement transactions reached 3.22 billion EUR in 2008, corresponding to 2.5% of the total public procurement budget[13]. Half of this is transacted on the platform "Acquisti in Rete".

Apart from these examples, the permissibility of using eSubmission in public procurements can be summarised as follows:

eSubmission is not permitted unless indicated otherwise by the contracting authority	eSubmission is permitted unless indicated otherwise by the contracting authority	Permissibility must be specified by the contracting authority (no default rule)
Austria Belgium Italy The Netherlands Poland Croatia	Bulgaria Czech Republic Estonia Hungary Portugal Slovenia[14] Spain Sweden Iceland	Cyprus Denmark Finland France Germany Greece Ireland Latvia Lithuania Malta Romania Slovakia UK Liechtenstein Norway
6 Countries (including 5 Member States)	**9 Countries (including 8 Member States)**	**15 Countries (including 13 Member States)**

Overview of national permissibility of eSubmission

Thus, in half of the countries[15] the permissibility of eSubmission is entirely dependent on a decision of the contracting authority. A smaller group of 9 countries (30%) take a 'default-yes' position, whereas 6

[10] See http://www.economie.gouv.fr/directions_services/daj/oeap/index.htm

[11] See http://www.economie.gouv.fr/directions_services/daj/oeap/recensement/presentation_recensement_2008.pdf, specifically p. 4. (table C).

[12] See http://www.avropa.se/upload/Dokument/Yttranden,%20rapporter,%20pm/In%20english%20for%20avropa.se_2009.pdf

[13] See http://www.acquistinretepa.it/pls/portal/url/page/PG_CONSIP/Fabbisogni_e_Indicatori?firsttab=Fabbisogni_e_Indicatori

[14] Specifically, the Slovenian Public Procurement Act notes that "Tenderers may submit their tenders electronically if this is supported by the information system used by the contracting authority. The contracting authority shall inform tenderers of the possibility of electronic submission of tenders in the tender documentation." (art. 67 (1-2)). Thus, availability of the appropriate infrastructure at the contracting authority's side appears to be the decisive factor.

others take a 'default-no' position. In practice, the prior permission of the contracting authority thus still plays a decisive role.

It should be stressed that the figures above are not comprehensive, since they do not cover the whole of the eProcurement markets in any of the cited countries. None the less, they are a strong indicator that eSubmission is still a largely paper process in most countries, given that usage figures do not exceed 5% of the total public procurement budget in any of the referenced cases. There is admittedly a very large 'dark number' of public procurements organized outside of these systems, which may or may not be concluded electronically. However, considering the complexity of organizing eProcurements, it seems doubtful that many countries have unknown eProcurement systems in place that could account for the remaining 95% of their procurement budgets being spent using electronic means.

Thus, the computerization of public procurement appears to have been fairly limited in most countries, especially for eSubmission and subsequent phases. This can be considered disappointing, as this evolution implies that the main challenges related to eProcurement have not been effectively addressed.

To what extent has the EU eProcurement Action Plan identified the right priorities and strategy?

The second key question is whether the Action Plan made the right choices to advance the use of electronic means in public procurement, and whether these choices have been effectively implemented in practice, especially in view of achieving the stated objectives of efficient and unhindered cross border eProcurement in the EU. Looking at the main achievements and currently remaining problems, these priorities appear to have been largely correctly chosen. This can firstly be seen in the more favourable evolutions, all of which were at least supported by the Action Plan:

- eProcurement system availability has increased, and the adoption of national action plans (as required by the Action Plan) has very likely played a noticeable part here.
- eNotification uptake can be described as very positive, and this would not have been possible without the development of the building blocks foreseen by the Action Plan.

The correctness of the chosen priorities can also be seen by examining the main remaining challenges, all of which were also identified by the Action Plan, but where a much smaller impact (or none at all) can be observed:

- eProcurement participation and uptake remains limited in most countries, especially when looking at eSubmission and subsequent phases;
- eSignature interoperability (especially cross border) remains virtually non-existent in practice;

[15] Luxembourg and Turkey were not included in the overview table, as their regulatory frameworks do not seem to permit fully electronic procurements at this time. In Luxembourg, new regulations were approved on 3 August 2009. Article 51 (2) of this *Règlement grand-ducal* notes that any electronic submission must be accompanied by a printed summary version, which will take precedence in case of differences between the electronic and printed version. Thus, it seems that fully electronic procurement is presently not possible. Similarly, in Turkey, the law permits the use of eProcurement via the Electronic Public Procurement Platform established by the Public Procurement Authority. However, this functionality is currently not available yet.

- Standardisation work has progressed, but has not lead to a common implementation of these standards in any of the identified key areas (eSignatures, eCatalogues, eInvoicing, and eOrdering);
- eAttestations have not become prevalent in virtually any country for eProcurement purposes, and for cross border use they remain entirely unsuitable. Workarounds (notably self-declarations of compliance) have been taken up instead, but this was not a development that was stimulated or even foreseen by the Action Plan.
- There is still a significant lack of usable statistical data with respect to eProcurement, which continues to impede the development of rational eProcurement policies.

The priorities thus seem to have been well chosen, since all of the main achievements and challenges can be linked to one or more measures. However, given that a significant number of these priorities have not been impacted significantly by the Action Plan, it is clear that the strategy of the Action Plan has not been effective in many respects.

Looking at the list of challenges above, two key weaknesses within the Action Plan's approach stand out:

Firstly, the Action Plan was very dependent on technological and policy progress in ancillary areas, for which it did not foresee forceful action itself:

- It assumed that eSignature interoperability would improve, especially with respect to qualified signatures. This was not an unreasonable assumption at the time, given that the reliable authentication of electronic communication was growing increasingly important in 2004 in several contexts (eCommerce in general, eGovernment, eBanking, eCommunication, …). As the eSignatures Directive had provided a European framework for authenticated communication, it was not unreasonable to expect greater adoption and cross border use of eSignatures.
- It assumed that existing standardisation work would lead to the adoption of common standards for eSignatures, eCatalogues, eInvoicing, and eOrdering. Again, this was not illogical, since standardisation work was already underway in these domains, and since each of these tools could create significant economic benefits to adopters, especially if a common European approach could be found that would create real economies of scale.
- It assumed that eAttestations would develop and be taken up at the national level. As paper attestations have traditionally played a strong role as evidentiary documents in public procurements, it would have been reasonable to expect eAttestations to take over this role in an electronic context. The fact that such attestations could be used in other contexts than public procurements (e.g. for tax purposes, social security, or even private sector use) might have been expected to support this evolution.

In reality, none of these points materialised, meaning that each of them remains a problem, especially at the cross border level. This is a key reason why the goal of cross border eProcurement has not been achieved.

However, it should also be stressed that the chosen approach was not necessarily wrong, but that it was certainly premature. Looking at the three issues mentioned above and at how they are currently being followed up, there are certainly hopeful signs ahead:

- The potential for creating eSignature interoperability for qualified signatures is currently seeing an enormous boost through initiatives linked to the implementation of the Services Directive.

- The standardisation work for the aforementioned documents appears to be converging around UBL 2.0. National instantiations of this standard are already in use in several Member States, and their further development is being tested in projects such as PEPPOL and e-PRIOR, building inter alia on the outputs of IDABC's work.
- An ambitious treatment of the eAttestations problem is being developed within the context of the PEPPOL project via the Virtual Company Dossier, which will help identify weaknesses in national approaches as well as provide a strategy on how to use eAttestations in cross border procurements.

Looking at the status of each of these points, the impression one gets is that a lot of building blocks are now being finalised which should have been available much sooner in order to achieve the objectives of the Action Plan. In summary and with the benefit of hindsight, the Action Plan was focused too much on achieving the final policy vision, rather than on first establishing the technical and organisational baseline that needed to be achieved at the national and European level.

In effect, the Action Plan's measures for the points enumerated above are fairly well suited to the situation existing in 2010, but not to the situation as it was in 2004. If the Action Plan was to achieve its objectives, measures would have to have been included to achieve the status as it is today, including the more pro-active eSignatures approach taken in the context of the Services Directive, and greater focus on developing and promoting standards for the key documents, including notably also commitments from Member States to use homogeneous implementations of these standards. It is worth noting that this latter point remains a weakness to this day.

A second problem with the Action Plan's approach is that it neglected the importance of administrative simplification as a strategy to stimulate eProcurement uptake and appeal. The evaluation showed that some of the most successful business cases at the national level with respect to eProcurement are not the most advanced ones, but rather the most accessible ones. The examples mentioned above improve accessibility through aggregation: a common infrastructure can be used and re-used by contracting authorities and economic operators alike to facilitate the public procurement process. The approaches taken with respect to authentication and eAttestations further illustrate this point:

- Countries which rely on eSignatures for electronic authentication have (with few exceptions) failed to resolve the cross border accessibility challenge. This may change in the future due to the aforementioned initiatives, but so far it remains a reality. In contrast, a small number of countries (with Ireland being the main example) have implemented systems based on simple username/password authentication. While such systems are inherently considered less secure than PKI based systems, the disadvantage of lesser security of username/password based systems appears to be largely theoretical in practice, since no incidents related to this approach have occurred since their introduction.
- With respect to eAttestations, it was already noted above that relatively few authentic eAttestations are being used in eProcurements in practice. Instead, countries generally aim to install electronic procedures that eliminate or reduce the need for attestations.

Neither one of these approaches were foreseen or envisaged by the Action Plan. Generally, the Action Plan focused strongly on a highly advanced ideal situation, based on what was conceptually possible, rather than what was realistically necessary.

This, in effect, summarises the main weakness of the Action Plan quite well: the measures addressing the interoperability challenges appeared to be based on what was technologically thinkable (state of the art solutions), rather than on what viable within the available timeframe.

Not all of the shortcomings should be laid at the Action Plan's feet, however. In some areas, there is also a clear failure on the side of the Member States, who have not always followed the measures directed towards them:

- Given that software demonstrators and XML schemas for core eProcurement functionalities were made available through IDABC, and that good practices have been shared extensively in recent years (including presently via the ePractice.eu website), it would not have been unreasonable to expect all Member States' infrastructure to at least fully support all pre-award phases. This is not presently the case. Even making allowance for the complexity of eProcurement and the interdependence with other eGovernment and eBusiness areas, it seems that the development of eProcurement infrastructure has not been given the political priority that was needed to achieve the Action Plan's goals in all Member States.
- A similar observation can be made with respect to eProcurement policy. Member States were required by the Action to evaluate and update certain national policies, including notably by adopting national action plans to support the implementation of eProcurement (including quantifiable targets), to stimulate eProcurement participation (both by the most powerful buyers and SMEs), and by collecting statistical information on eProcurement uptake. The evaluation shows that a large number of Member States have not followed these obligations.

Thus, while some of the strategies adopted by the Action Plan were certainly partially misaligned with reality, part of the responsibility also lies in the non-compliance with the obligations of the Action Plan on the Member States' side.

What are the overall outcomes and what lessons can be drawn from current experience? What if any, are the remaining issues, possible gaps and barriers?

Overall, one can only conclude that the Action Plan has largely failed to achieve its objective of efficient and unhindered cross border eProcurement in the EU.

The sections above have shown that several positive achievements have been realised in the field of eProcurement, but these play a role mainly at the national level. Several key barriers and challenges still remain, which can strongly affect cross border interoperability as well:

- **Lack of available infrastructure:** while all Member States have *some* eProcurement infrastructure in place, this does not always support all possible phases (e.g. eSubmission is entirely unavailable in 3 Member States). Infrastructure availability and maturity is still lacking in many cases, as shown in the overview above.
- **Lack of interoperable infrastructure:** standardisation in a number of areas has not progressed at the cross border level, as shown especially with respect to eSignatures and key eDocument types (notably eCatalogues, eInvoicing, and eOrdering). Their use in cross border settings remains fundamentally hampered due to a lack of a clear common European approach.
- **Legal uncertainties:** in a number of contexts, legal challenges still remain. This was noted to be the case with respect to electronic invoicing, where the cross border validity of invoices still cannot be determined without assessing the national situation.
- **Trustworthiness:** even when no legal or technical challenges exist, trustworthiness may be hard to assess. Key areas where this occurs are identification of the economic operator (can the contracting authority trust that the provided credentials are reliable?) and the assessment of the validity of evidentiary documents (does a document provide acceptable assurances with respect to the question being asked, e.g. tax compliance?).

- **Accessibility:** as a purely pragmatic issue, the accessibility of eProcurement solutions is also hampered due to language barriers and differences in interfaces, which require economic operators to be familiar with the local public procurement context.
- **Economic viability and use cases:** in the absence of clear quantitative data, it is hard to assess where the most successful use cases for eProcurement lie, and what the return on investment of specific choices is (e.g. centralization versus decentralization, framework agreements versus one-off procurements, when to use newer tools such as eAuctions and DPS, etc.).
- **Transparency:** there is a fundamental lack of reliable statistical eProcurement data. As a result, the identification of best practices is difficult, since comparative assessment is virtually impossible. In addition, this lack of data serves as a barrier to accountability with respect to policy making, both at the national and European level. In the absence of reliable data, the business case of eProcurement (especially at the cross border level) remains to some extent a matter of conviction rather than fact.
- **Market challenges:** the clear choice to use a specific technology can benefit uptake (as has been seen e.g. with respect to eInvoicing, where the only substantial use cases in eProcurement relate to the adoption of a single common implementation of a standard). However, such choices also tend to penalize market players which used different technologies. In addition, if this choice is made at the local / regional / national level, this leads to different choices being made across the EU, leading to new interoperability barriers.
- **Distribution of benefits:** finally, successful uptake of eProcurement requires a sufficiently equitable distribution of benefits between all stakeholders: contracting authorities, economic operators and any required service providers (such as PKI service providers or eProcurement software developers), taking into account the diversity of these stakeholders (smaller and larger contracting authorities, large enterprises and SMEs, national and foreign economic operators).

Examining how and where these issues have been addressed successfully across the Member States, the following set of key lessons emerges:

- In order to be accessible for cross border procurements, eProcurement systems must operate on the basis of solutions which emphasise accessibility and pragmatism over technological sophistication and theoretical security benefits.
- eProcurement is not treated by the Member States as a unified global process that must be supported in its entirety by a single system. Supported phases or tools vary from country to country, system to system, and even procurement to procurement. It is not meaningful to say that eProcurement is supported or mandatory in any given country without qualifying precisely what is meant and to which extent this is the case. European policy should recognize this fact by acknowledging and addressing the different specific challenges for each phase and tool.
- Successful business cases have been found in several countries. While clear statistical data is rare, flagship eProcurement projects which are most frequently presented by the Member States as being successes commonly involve CPBs using framework agreements for commodity purchases (supplies and services). More generally, aggregation is a cornerstone of successful eProcurement strategies: contracting authorities and economic operators must have the possibility of easily using and re-using existing solutions.
- A crucial challenge is to ensure that eProcurement solutions establish a benefit for all stakeholders. For the example of CPBs using framework agreements, this is clearly the case:

contracting authorities can build on the expertise of CPBs to organise their procurements in a flexible way, while economic operators only need to join a single framework to participate in multiple procurements. For other approaches this is less obvious: eAuctions for instance tend to cut costs for contracting authorities, but without a clear equivalent advantage at the economic operator's side, which reduces the appeal of public procurements to them. Similarly, the advantage of greater flexibility offered by DPS does not appear to be sufficient to create significant traction so far, since their precise place and role in the European eProcurement landscape is not clear.

- Finally, with respect to policy making, the available data suggests that achieving significant uptake of eProcurement requires a continued commitment to encourage contracting authorities and economic operators to migrate to eProcurement. Partial obligations to use certain eProcurement tools or services have been used to good effect in a number of countries, notably by requiring the use of eNotifications, framework agreements when these are available, or eInvoicing.

Virtually every aspect of eProcurement foreseen by the Action Plan is currently being used in the EU in some form, but in practice interoperability between solutions remains very limited. This implies that Member States are not investing their budgets optimally, since variations of solutions are being continuously redeveloped at the national/regional level. In order to be truly effective in creating cross border eProcurement, the main challenge is in achieving a 'trickle-up' effect, in which existing national solutions either converge or are re-used more systematically at the European level. The Action Plan has been ineffective in stimulating the emergence of such a common approach, and was thus too 'light touch' in this respect.

Looking ahead – reflections on potential future eProcurement policy

On the basis of the assessment above, several policy recommendations can be forwarded. Some of these are addressed towards the Member States, and some require follow-up at the European level.

Member State level policy improvements

With respect to infrastructure

Firstly, there are still a number of Member States whose infrastructure remains at a fairly rudimentary level. This includes specifically Member States which have no identifiable eProcurement infrastructure at all, and those which only support unilateral phases (eNotification and eAccess, but no eSubmission functionality). Given available best practice examples and state of the art, all Member States should at least be able to support the pre-award phases of eProcurement based on common infrastructure. eSubmission should not remain the fringe phenomenon that it still is in many Member States.

It should be emphasised that '*common* infrastructure' in this suggestion should not be misread as requiring *centralised* infrastructure. Some Member States with strongly decentralised approaches have successfully implemented regional or local eProcurement systems instead, whereas others have favoured collaboration with private sector partners to make a multitude of solutions available. The key success requirement is however that such solutions (centralised or decentralised) must be easily available to a multitude of contracting authorities.

Furthermore, such infrastructure should be actively promoted towards the contracting authorities which are eligible to use it. Member States should seriously consider requiring contracting authorities to consistently use eProcurement tools whenever these are available, including by offering economic operators the option to use eSubmission whenever possible.

With respect to cross border impact

A second major point is the cross border accessibility and usability of eProcurement infrastructure. With precious few exceptions, Member States have largely failed to make cross border eProcurement possible (or reasonably attractive) through an excessive reliance on local infrastructure and local policy choices. Key examples discussed extensively above include eSignature requirements, document standards and formats (including national instantiations of international standards for eInvoices, eCatalogues etc), and simple language issues.

Member States should assess critically whether their adopted practices and solutions are conducive to cross border procurement, and which solutions are available to them to remedy these problems. Pragmatic approaches should be favoured over ideal solutions that are unlikely to materialise in a reasonable period of time. If systematic solutions are presently unavailable or unworkable, foreign economic operators should at least have the possibility to use ad hoc workarounds.

With respect to policy accountability and data collection

Despite an explicit measure to this effect, the impact of eProcurement at the national level is presently almost impossible to measure due to the lack of accessible and comparable information on eProcurement practices within the Member States. Member States should be required to review their data collection processes with respect to eProcurement, and should be able to provide reasonably comprehensive data with respect to the aforementioned points. More concrete recommendations on this point are presented in the full report.

EU level policy improvements

Building on convergence and best practices

A first policy priority should be to build strongly on existing initiatives, projects and achievements, and ensuring that these converge towards common solutions. This approach differs from the 2004 Action Plan in its orientation towards achieving common and practically reusable components, rather than working at a high level and leaving too many implementation details to the Member States. This entails notably the following points:

- A number of ongoing eProcurement initiatives are already working on building towards convergence on issues that impede technical interoperability (including eSignatures, eCatalogues, eInvoicing, etc), with PEPPOL being a key example of this. This process should obviously remain high on the priority list, as it leads to the identification of good practices, the creation of reference implementations, and better interaction with standardisation bodies such as CEN.

- The importance and impact of cross-context links should be recognised. Efforts undertaken within the implementation of the Services Directive (including the SPOCS large scale pilot) can also serve as model approaches for eProcurement. Similarly, revisions of the European legal framework for key building blocks (such as the ongoing review of eInvoicing rules and the potential future review of the eSignatures framework) will have a crucial impact on the interoperability of eProcurement solutions on this point. Finally, the importance of administrative simplification has increased as a policy objective in recent years, which should also be reflected in the European eProcurement approach. eProcurement should be simpler than traditional procurements for all stakeholders if uptake is to be achieved.

Ensuring interoperable uptake at the national level

The section above is not fundamentally new compared to the 2004 Action Plan, and entails more of a shift in emphasis. A more crucial challenge should however also be met: convergence of standards and the identification of best practices is meaningless if uptake at the national level cannot be ensured. Several efforts undertaken under the 2004 Action Plan illustrate this point perfectly: basic software demonstrators and XML schemas for eProcurement were developed by IDABC as foreseen under the Action Plan, and standardisation work on several key document types (including eCatalogues, eInvoicing and eOrdering) has progressed at the international level, taking into account European inputs and experiences. Yet at the national level, implementations continue to differ, making interoperability difficult to impossible.

It is not possible to legally impose the use of a single implementation or a single standard as there is no legal basis for this, nor does this approach seem politically viable. However, it may be realistic to follow an approach based on the experiences gained in European initiatives, leading by example, and facilitating and encouraging the re-use of developed output. The goal would be to amend existing national approaches by a common European approach.

Broadly, work from leading eProcurement projects such as PEPPOL and e-PRIOR could be brought to maturity in the form of reference implementations. The European Commission could opt to implement these itself to conduct eProcurements by European institutions (which it is already doing within some Commission services for e-PRIOR), thus providing a working eProcurement reference model which Member States could choose to follow.

To the extent that technical implementation work could be made openly available to Member States (as is e.g. the case with part of the e-PRIOR outputs as discussed above), this could prove to be a viable approach to push workable solutions to Member States whose infrastructure has not yet reached an advanced implementation level. For other Member States which have already established a partially functional but non-interoperable infrastructure, outputs could be made available in a modular fashion, i.e. based around specific functionalities to be supported (signature validation modules, catalogue development and integration modules, invoicing modules,…). Additional efforts would then be invested in developing connectors allowing specific modules to be integrated into existing eProcurement infrastructures. In this way, Member States would have the freedom of integrating any necessary modules that would be usable at the European level, without invalidating their existing eProcurement work.

Uptake of these modules would be strictly voluntary. However, if the goal can be achieved of developing modules that support specific functionalities at the European level, it seems likely that this

would be a sufficient incentive for implementation in Member States which have not yet solved these problems themselves.

Concluding remarks

When examining the status of eProcurement in 2010 and looking at the main achievements since the adoption of the Action Plan in 2004, it is clear that successes can be mainly identified for eProcurements that do not involve any cross border aspects. Considering that the Action Plan aimed to achieve an open and accessible public procurement market, in which "any business in Europe with a PC and an internet connection can participate in a public purchase conducted electronically", one can only conclude that the Action Plan has largely failed to achieve this goal.

Even when examining only purely national procurements, development is uneven across the Member States: while simpler phases such as eNotification are used widely, more advanced phases requiring bilateral communication (beginning with eSubmission) are much less common, with some Member States still lacking the required infrastructure. The EU-wide transition to fully electronic procurement is thus far from complete, in spite of the smaller successes outlined above.

Future EU eProcurement policy will need to build on the lessons learnt from the implementation of the Action Plan. The existence of a pragmatic and realistic vision of eProcurement will need to take a central role in that respect. A crucial weakness of the 2004 Action Plan was its dependence on progress in domains for which no forceful action was foreseen (e.g. in the areas of eSignatures and a multitude of eDocuments). This is an aspect which will need to be remedied in the future, relying either on (provisional) workarounds to address these points, or on a clear roadmap to provide longer term solutions (e.g. based on European projects in this area or on existing international initiatives), or a combination of both approaches. An strategy based on assumptions of progress for such complex topics should not be deemed acceptable.

This should not be taken to mean that action is only required at the EU level. Within the Member States too, there is room for improvement. The accessibility of existing eProcurement systems to economic operators in other countries does not seem to be systematically considered, given the frequent choice for systems which are difficult, complicated or expensive to use for economic operators established in other Member States. In addition, there is little transparency in most Member States on the scale and effectiveness of their eProcurement initiatives, making it particularly hard to determine how many offers are actually submitted electronically, their financial value, and which contracting authorities/economic operators reap the most rewards from eProcurement. This type of data collection is a responsibility that must be primarily shouldered by the Member States.

Finally and in conclusion, it should also be recognised that a lot of groundwork has been laid since the adoption of the Action Plan, both at the national and European level. Through these initiatives, a lot of know-how and good practice cases have been built up. This is a situation which is clearly superior to the status in 2004, when most Member States could only boast a limited field experience with eProcurement. The main challenge for the coming years will be to find a way to spread and interconnect these experiences and to improve their use and accessibility. If this challenge can be met, the envisaged goal of an open and accessible European electronic public procurement market can still be achieved. Given the potential economic and societal benefits, this is a goal which the European Union can no longer afford to miss.

1 Introduction – Framework for electronic public procurement in the EU Procurement Directives and goals of the 2004 EU Action Plan

1.1 Introduction – Importance of eProcurement in the E.U.

Public procurement accounts for a very substantial part of the EU economy. Eurostat data for 2008[16] indicates that for the 27 Member States, approximately 3,14% of their GDP is openly advertised in the OJEU, corresponding to a budget of around 392 billion EUR in 2008[17]. More importantly, this budget is estimated by Eurostat as being around 18,15 % of the total public procurement budgets in the Member States (i.e. including procurements which are not published in the OJEU), bringing the estimated total value of public procurements in the EU-27 in 2008 to 17,30% of EU GDP, or about 2,16 trillion EUR.

Given the magnitude of these budgets, there is a great public interest in making sure that these funds are well managed, and that any inefficiencies are eliminated. A hypothetical reduction of average public procurement budgets of 1% would already amount to a saving of 3,92 billion EUR for EU advertised public procurements, and of 21,6 billion EUR for all EU public procurements together.

The potential for cost savings is one of the main reasons for the European and national interest in electronic public procurement. When correctly implemented, the use of electronic means of communication in public procurement can reduce the time and efforts required to organise and participate in public procurements, thus decreasing the operational costs for contracting authorities and economic operators alike, and increase participation and thus competition, thereby improving the quality and/or lowering the costs of acquired goods, works and services. If the introduction of eProcurement could reach its frequently quoted[18] potential of saving 5% on expenditure costs and up to 50-80% on transaction costs for both buyers and suppliers, the economic benefit would clearly be enormous.

However, the potential benefits of eProcurement are not limited to direct cost savings. Public procurements are traditionally perceived as being complicated, labour intensive and frequently intransparent. The introduction of electronic tools to overcome some of the traditional barriers in this respect (including the preparation of calls and offers, collection of evidentiary documents, proof of timely submission, and comparative assessment of offers based on set criteria, to name but a few options) can change this, and could thus help to achieve non-economical public governance benefits, such as increased transparency, speed and efficiency, reduction of administrative errors, and an improvement of fairness.

The introduction of new procurement tools which leverage the potential of electronic communications could prove crucial in this respect: dynamic purchasing systems and eCatalogues can help eliminate

[16] Procurement data classified as 'Public procurement advertised in the Official Journal (as a % of total public procurement and as a % of GDP)', searchable via http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database

[17] Based on Eurostat's 2008 estimate of European GDP, which amounted to around 12.50 trillion EUR.

[18] Quoted in the 2004 Action Plan; see http://ec.europa.eu/internal_market/publicprocurement/docs/eprocurement/actionplan/actionplan_en.pdf.

red tape, which is particularly crucial to improve the involvement of SMEs in public procurements; eNotifications and buyer profiles should make it easier for public administrations to formulate their calls in an error-free way and for economic operators to identify opportunities; and eAuctions could help administrations to get the greatest value for money by allowing economic operators to dynamically improve the economic appeal of their bids.

Finally, one should not overlook the broader potential societal impact of eProcurement. Administrations, businesses and citizens alike have grown increasingly comfortable in the use of electronic means of communication in their everyday transactions, and are keenly aware of the increases in efficiency and productivity brought about by this transition. Public sector processes which do not follow this trend will be increasingly perceived as anachronisms and signs of inefficient management, harming confidence in the public sector. Inversely, progressive administrations can also play a leading role towards their businesses and citizens by showing them new and more efficient ways to conduct business and manage administrations, including through the use of reliable and trustworthy communication technologies. In that respect, a timely and efficient adoption of eProcurement can be expected to influence the uptake of such technologies in other areas as well.

Thus, the expected benefits of electronic procurement are substantial. It is for this reason that the 2004 Public Procurement Directives 2004/17/EC and 2004/18/EC introduced several provisions aimed at enabling eProcurement uptake in all Member States, which were subsequently supported by the 2004 eProcurement Action Plan to assist in their implementation. In this report, we will examine the impact and effectiveness of the Action Plan in shaping the national eProcurement situation.

1.2 The regulatory framework for eProcurement

The European regulatory framework has been incrementally updated since 2004 to ensure that the necessary building blocks are in place to support electronic public procurement as described above.

The primary initiatives in this respect were the 2004 Public Procurement Directives (2004/17/EC[19] and 2004/18/EC[20]), which address respectively public procurements in certain utilities sectors (water, energy, transport and postal services), and public works contracts, public supply contracts and public service contracts in general. The Directives regulate public procurement in general rather than electronic procurement specifically, but none the less contain a number of rules and principles which are particularly relevant in an eProcurement context. These will be examined in greater detail below, but include notably:

- Rules with respect to ***dynamic purchasing systems***, defined as 'a completely electronic process for making commonly used purchases, the characteristics of which, as generally available on the market, meet the requirements of the contracting authority, which is limited in duration and open throughout its validity to any economic operator which satisfies the

[19] Directive 2004/17/EC of the European Parliament and of the Council of 31 March 2004 coordinating the procurement procedures of entities operating in the water, energy, transport and postal services sectors, see http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32004L0017:EN:NOT

[20] Directive 2004/18/EC of the European Parliament and of the Council of 31 March 2004 on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts, see http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32004L0018:EN:NOT

selection criteria and has submitted an indicative tender that complies with the specification' (article 1.6 of Directive 2004/18/EC and 1.5 of Directive 2004/17/EC);

- Rules with respect to ***electronic auctions***, defined as 'a repetitive process involving an electronic device for the presentation of new prices, revised downwards, and/or new values concerning certain elements of tenders, which occurs after an initial full evaluation of the tenders, enabling them to be ranked using automatic evaluation methods' (article 1.7 of Directive 2004/18/EC and 1.6 of Directive 2004/17/EC);
- Rules with respect to written ***communication***, clarifying that the concept of writing includes 'any expression consisting of words or figures which can be read, reproduced and subsequently communicated. It may include information which is transmitted and stored by electronic means' (article 1.12 of Directive 2004/18/EC and article 1.11 of Directive 2004/17/EC); 'electronic means' in turn are generally identified as 'using electronic equipment for the processing (including digital compression) and storage of data which is transmitted, conveyed and received by wire, by radio, by optical means or by other electromagnetic means' (article 1.13 of Directive 2004/18/EC and article 1.12 of Directive 2004/17/EC);
- Rules with respect to the use of the ***Common Procurement Vocabulary*** (CPV), as the reference nomenclature applicable to public contracts;
- Rules to support the ***publication of notices***, including through the use of a set of standardised notice forms and through so-called ***buyer profiles***. Usage of the standardised forms is mandatory above the EU thresholds, but the use of electronic means to communicate these standardised forms is not required. However, for so-called accelerated procedures, notices must be sent either by telefax or by electronic means, and incentives for the use of electronic means are provided in the Directives; e.g. through the shortened publication (delay of 5 days instead of 12) and through the increased maximum permitted length of the notices (may surpass 650 words) (article 36.3 and 36.6 of Directive 2004/18/EC; not repeated in Directive 2004/17/EC). Buyer profiles on the other hand are a loosely defined notification modality consisting a collection of data regarding the procurement activities of a given contracting authority, which may include prior information notices, information on ongoing invitations to tender, scheduled purchases, contracts concluded, procedures cancelled and any useful general information, such as a contact point, a telephone and a fax number, a postal address and an e-mail address (point 2(b) of Annex VIII of Directive 2004/18/EC, and point 2(b) of Annex XX of Directive 2004/17/EC);
- Rules related to the tools used for ***communication through electronic means***; this includes an exception provision for the communication of evidentiary documents in paper form if these are not available in an electronic format (article 42 of Directive 2004/18/EC, and article 48 of Directive 2004/17/EC). In addition, these rules explicitly allow Member States to require that electronic tenders are accompanied by an advanced ***electronic signature*** in conformity with article 5 paragraph 1 of Directive 1999/93/EC, i.e. an advanced electronic signature based on a qualified certificate and created using a secure signature creation device (frequently designated as a 'qualified signature';
- Finally, while no specific rules are included in the Directives, the recitals refer to the use of ***eCatalogues*** as a tool to facilitate public procurements (recital 12 of Directive 2004/18/EC and recital 20 of Directive 2004/17/EC), specifically as a modality for participating in procurements under framework agreements or within DPS.

The Public Procurement Directives are supported through a number of related regulatory initiatives, including notably:

- Commission Directive 2005/51/EC of 7 September 2005 amending Annex XX to Directive 2004/17/EC and Annex VIII to Directive 2004/18/EC of the European Parliament and the

Council on public procurement, and Commission Regulation (EC) No 1564/2005 of 7 September 2005 establishing standard forms for the publication of notices in the framework of public procurement procedures pursuant to Directives 2004/17/EC and 2004/18/EC of the European Parliament and of the Council. Collectively, this Directive and Regulation establish a new set of notice forms which the Member States must use to communicate new procurements;

- Commission Regulation (EC) No 213/2008 of 28 November 2007 amending Regulation (EC) N° 2195/2002 of the European Parliament and of the Council on the Common Procurement Vocabulary (CPV) and Directives 2004/17/EC and 2004/18/EC of the European Parliament and of the Council on public procurement procedures, as regards the revision of the CPV;
- Commission Decision 2008/963/EC of 9 December 2008 amending the Annexes to Directives 2004/17/EC and 2004/18/EC of the European Parliament and of the Council on public procurement procedures, as regards their lists of contracting entities and contracting authorities; this Decision amends the Directive to include the newer Member States in the relevant Annexes.

In this way, some of the provisions of the Directives which required further elaboration – notably to establish homogeneous notification forms and to update the CPV nomenclature – have been given the needed regulatory framework.

However, it was recognised already in 2004 that the correct national transposition of the Directives as such by the prescribed deadline of 31 January 2006 would be very ambitious, and furthermore that the establishment of a legal framework that was considered as conducive to eProcurements would not necessarily be sufficient to ensure that implementation and take-up in practice would occur at a level that would allow all of the aforementioned benefits (cost cutting, efficiency, transparency, etc.) to be realised.

Therefore, the Commission adopted the 2004 Action Plan for the implementation of the legal framework for electronic public procurement, aimed at ensuring a timely and correct implementation of the Directives, and maximising the chances of seeing the envisaged benefits materialise in practice.

1.3 The policy perspective: the 2004 EU Action Plan and the 2005 Manchester Declaration

The legal framework described above has been supported by a general EU policy aimed at encouraging the uptake of eProcurement, both at the national and at the cross border level. The most recent specific target can be found in the 2005 Manchester Declaration, which formulated the very ambitious goal that half of all public procurements in the EU should be completed online by 2010.

This target built in part on the Action Plan that was put in place by the European Commission in December 2004, which defined specific measures to be taken by the Commission, Member States and other key stakeholders to ensure that eProcurement could be effectively adopted. The main purpose of the present report is to evaluate the impact of the Action Plan over the past five years, by determining if it has proven to be efficient and effective in shaping eProcurement practices.

While the Action Plan should of course be considered in its totality, it can structurally be broken up into three key objectives which were embraced explicitly by the Action Plan:

- **Objective I - Ensure a well functioning Internal Market in electronic public procurement**

  Four aspects of this objective were identified:

  - Correct and timely implementation of the legal framework
  - Complete the framework for the appropriate basic tools
  - Remove/prevent barriers for conducting procurements electronically
  - Detect and address interoperability problems over time
- **Objective II - Achieve greater efficiency in procurement, improve governance and competitiveness**
  - Increase efficiency of public procurement and improve governance
  - Increase competitiveness of public procurement markets across the EU
- **Objective III - Work towards an international framework for electronic public procurement**

Collectively, the proposed measures were expected to contribute to the realisation of a specific vision of eProcurement. In this report, we will try to identify to what extent the Action Plan has been successful in this respect, and what future measures might be useful to address any remaining gaps or issues.

1.4 Structure of the evaluation report

To evaluate the Action Plan's role in shaping the current European eProcurement landscape, we will proceed through the following logical steps:

- Firstly, in chapter 2 below ("Approach and methodology"), we will explain how the present evaluation was conducted. As a first step, we will examine the intervention logic behind the Action Plan in a comprehensive manner, by looking at each objective, action and measure in the Action Plan and identifying the corresponding expected results and impacts. This will allow us to derive how eProcurement was expected to evolve, and why specific measures were chosen in the Action Plan. This, in turn, will allow us to choose the most relevant evaluation questions. Then, as a second step, we will explain how the information in this report was collected and processed, and why certain areas were emphasized more than others.
- Chapter 3 ("The state of play – overview") will contain a summary of the status of eProcurement in the examined countries, looking both at the different phases of an electronic procurement process, and at the different tools that can be used, from a legal, technical and organisational perspective. Rather than looking at each country in detail, the emphasis will be on identifying general trends and patterns, and on assessing their main advantages and disadvantages.
- Chapters 4 through 7 then will examine each point in greater detail, looking at each country individually, and identifying major choices and trends with respect to regulation and policy (chapter 4), available infrastructure (chapter 5), eProcurement phases (chapter 6) and tools

(chapter 7). We will also briefly assess to what extent the observed status matches the vision for eProcurement held up by the Action Plan in 2004.

- In chapter 8 of the report, the impacts of the Action Plan will be assessed, looking specifically at whether the measures defined by the Action Plan have provided the results and impacts identified in the intervention logic definition. Each objective will be assessed separately, along with an appreciation of the extent to which the explicit and implied assumptions behind the Action Plan (i.e. the basic vision for eProcurement that was used as a basis for the Action Plan in 2004) have proven correct, and what the core issues are that still need to be addressed.
- Finally, overall conclusions on impacts and remaining gaps will be provided in chapter 9, on the basis of the evaluation questions identified in the methodology section. Recommendations on future data collection actions will also be provided, to address the current shortage of reliable quantitative data.

2 Approach and methodology of the evaluation

As a first step of the evaluation, we will try to bring out the intervention logic behind the Action Plan, set out the resulting evaluation questions to be answered in the report, and describe our basic methodological approach.

To achieve this goal, we need to take a step back and examine the status of eProcurement and the policy concerns as they existed in 2004. To do this, the primary data sources are:

- The Action Plan itself (as a summary of the main policy objectives);
- The 2004 Impact Assessment on the Action Plan on electronic Public Procurement (as a summary of the status of eProcurement in 2004[21] and of potential scenarios for the implementation of eProcurement by 2010[22]);
- The Commission Staff Working Document annexed to the Action Plan (as a summary of the main reasons for the choices made in the Action Plan[23]).

A comprehensive analysis of these three sources will allow us to answer the following crucial questions:

- *What* were the objectives of the Action Plan, and *how* were these objectives to come about? This can be done by bringing out the intervention logic on the basis of the Action Plan itself (section 2.1 below).
- *Why* were these specific objectives and means chosen? This requires us to consider the state of eProcurement in 2004, on the basis of the 2004 Impact Assessment, and to see how this contributed to the establishment of the Action Plan (section 2.2).
- Finally, *what was the vision for the evolution of eProcurement behind the Action Plan?* This can be determined on the basis of all three aforementioned documents (Action Plan, Impact Assessment and Commission Staff Working Document), which should allow us to derive what future developments were foreseen in 2004 (section 2.3).

On the basis of this, it will become clear how the Action Plan was expected to impact eProcurement, and thus what the relevant evaluation are, along with possible success criteria / realistic success indicators.

[21] Mainly in part one of the Impact Assessment, see http://ec.europa.eu/internal_market/publicprocurement/docs/eprocurement/2004-12-impact-external-vol1_en.pdf

[22] Mainly in part two of the Impact Assessment, see http://ec.europa.eu/internal_market/publicprocurement/docs/eprocurement/2004-12-impact-external-vol2_en.pdf

[23] More accurately: the Commission Staff Working Document of 29 December 2004 - Annex to the Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions - "Action plan for the implementation of the legal framework for electronic public procurement"; see http://ec.europa.eu/internal_market/publicprocurement/docs/eprocurement/2004-12-impact-assessment_en.pdf

2.1 The intervention logic

As a first step, we need to examine how the Action Plan was built up, and what the expected impacts were envisaged to be.

As noted above, the Action Plan is built up around three key objectives:

- **Objective I - Ensure a well functioning Internal Market in electronic public procurement**

  Four aspects of this objective were identified:
  - Correct and timely implementation of the legal framework
  - Complete the framework for the appropriate basic tools
  - Remove/prevent barriers for conducting procurements electronically
  - Detect and address interoperability problems over time
- **Objective II - Achieve greater efficiency in procurement, improve governance and competitiveness**
  - Increase efficiency of public procurement and improve governance
  - Increase competitiveness of public procurement markets across the EU
- **Objective III - Work towards an international framework for electronic public procurement**

For each of these objectives, the Action plan proposed a series of actions, which were to be realised to a more concrete set of measures to be undertaken by specific stakeholders (primarily the Member States and the European Commission, but also some third parties). Collectively, these measures were expected to realise a specific vision of eProcurement for the future, as it was envisaged in 2004.

In order to evaluate now (in 2010) retrospectively how effective and efficient the Action Plan has been, we must first define the intervention logic[24], i.e. establish a logical model visually representing what was expected to happen as a consequence of the Action Plan, at the time of its adoption. The description of the intervention logic is essential in order to identify the specific questions (i.e. testing hypotheses) that can be used as indicators to evaluate the impact of the Action Plan.

In the sections below, we will attempt to provide a description of the intervention logic behind the Action Plan, first by examining each of the three objectives separately, and then by considering them as a whole. In each case, we will provide a table breaking the objective down into its most basic elements, determining specifically:

- What the relevant actions and measures were;

[24] For an explanation on this concept, see the DG Markt Guide to evaluating legislation, p. 21 and following; http://ec.europa.eu/dgs/internal_market/docs/evaluation/evaluation_guide.pdf

- What the expected results of each action were;
- What the direct and indirect impact of each action was expected to be;
- What the overall impact was expected to be, i.e. the main strategic objective that was expected to be reached via the action.

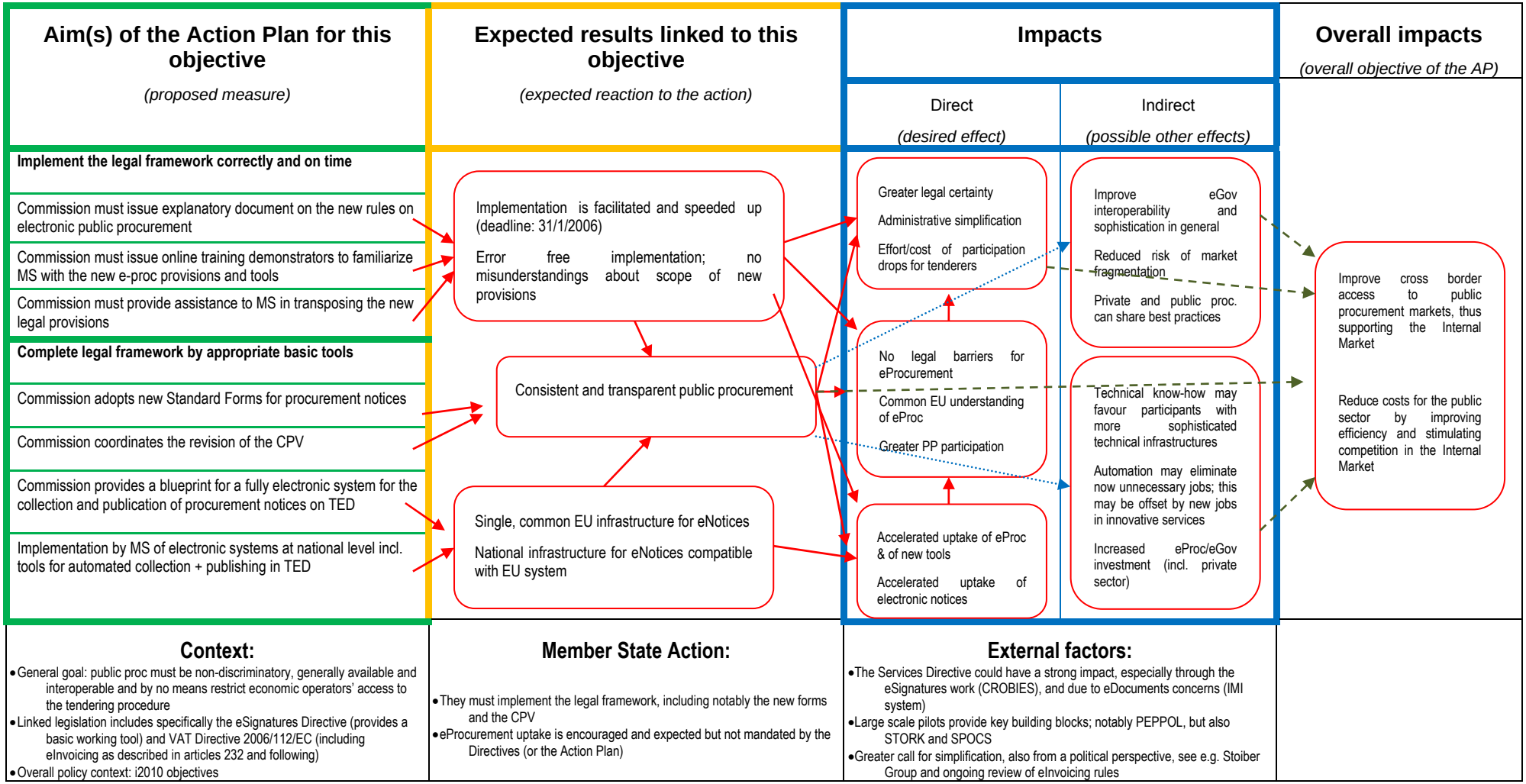
Globally, this approach will help in establishing the link between the Action Plan's objectives and the envisaged impacts, which will help in formulating relevant questions to evaluate the impact of the Action Plan.

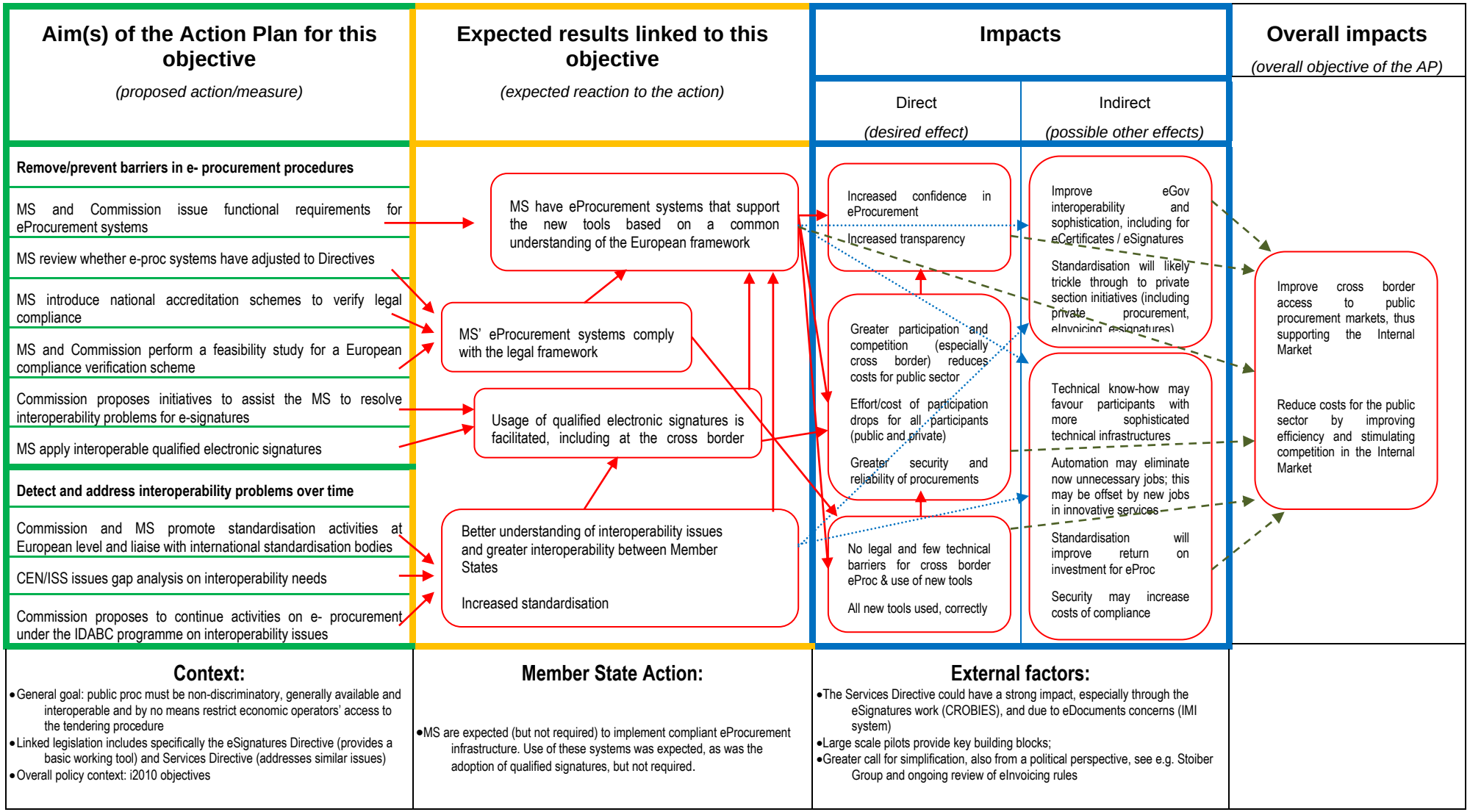
Thus, in each of the three sections below we will analyse one of the objectives of the Action plan, and schematically identify the specific measures proposed in the Action Plan for this objective, the expected results for this measure, and the expected and uncertain impacts of each measure. Causal links will be indicated using red arrows for expected impacts ('X was expected to trigger Y') and using blue dotted arrows for uncertain impacts ('X might also trigger Y'). Dashed lines indicate how the overall impacts were expected to occur. Logically related results and impacts will be grouped together wherever possible to ensure the readability of the graphics.

Finally, as it is clear that the objectives of the Action Plan are interlinked, in the end one larger summary scheme will be provided (as suggested in the DG Markt Guide to evaluating legislation), identifying the main objectives, results and impacts of the Action Plan as a whole, along with the general context of the Action Plan, external influences and the overall impact of the Action Plan from a broader European policy perspective.

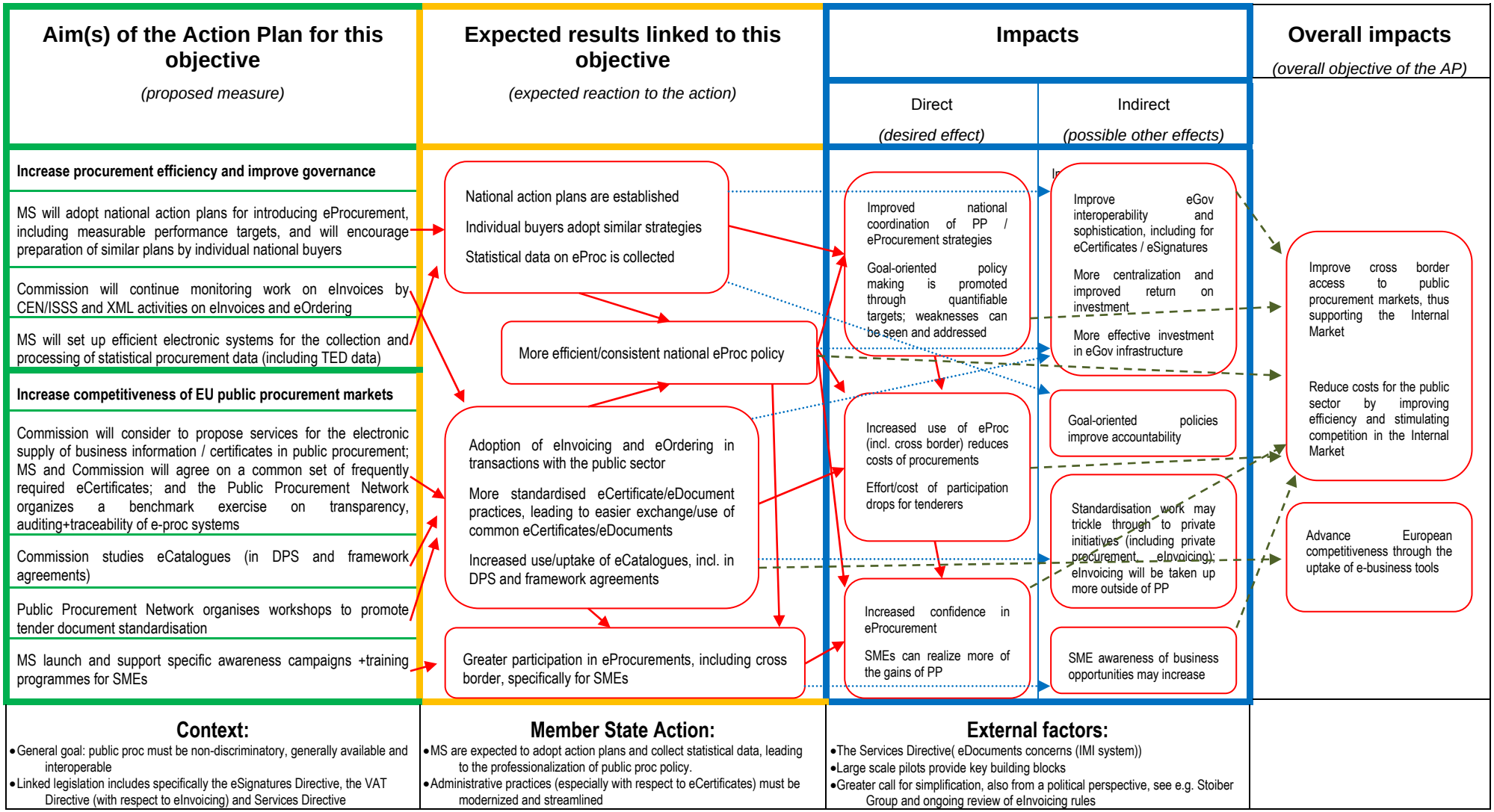
The resulting schemes will then be used as an input to describe the establishment of the Action Plan (section 2.2) and the vision for the evolution of eProcurement behind the Action Plan (section 2.3).

2.1.1 First objective - Ensure a well functioning Internal Market in electronic public procurement

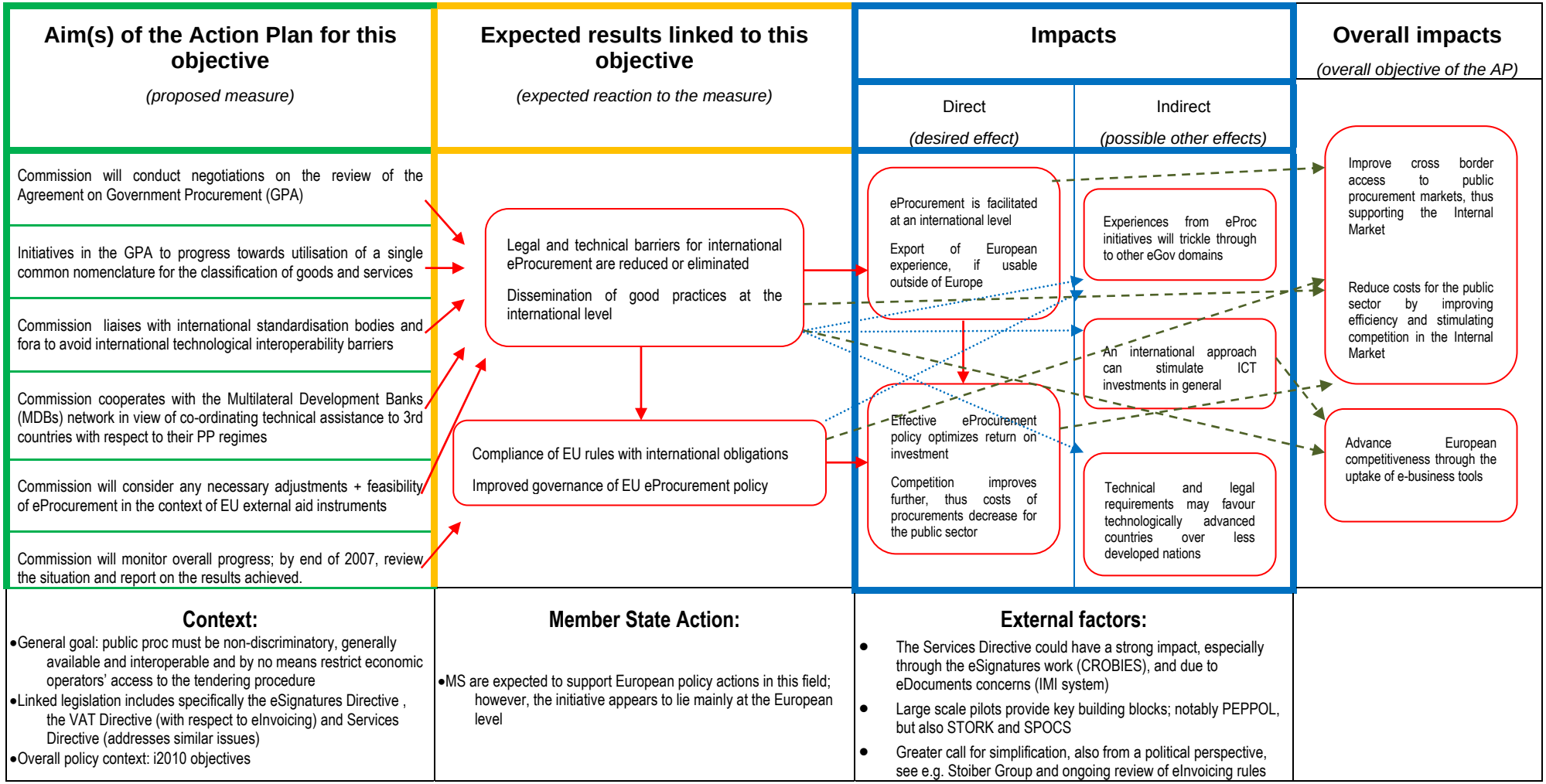



Aim(s) of the Action Plan for this objective
(proposed action/measure)
Expected results linked to this objective
(expected reaction to the action)
Impacts
Direct
(desired effect)
Indirect
(possible other effects)
Overall impacts
(overall objective of the AP)
Remove/prevent barriers in e- procurement procedures
MS and Commission issue functional requirements for eProcurement systems
MS review whether e-proc systems have adjusted to Directives
MS introduce national accreditation schemes to verify legal compliance
MS and Commission perform a feasibility study for a European compliance verification scheme
Commission proposes initiatives to assist the MS to resolve interoperability problems for e-signatures
MS apply interoperable qualified electronic signatures
Detect and address interoperability problems over time
Commission and MS promote standardisation activities at European level and liaise with international standardisation bodies
CEN/ISS issues gap analysis on interoperability needs
Commission proposes to continue activities on e- procurement under the IDABC programme on interoperability issues
MS have eProcurement systems that support the new tools based on a common understanding of the European framework
MS' eProcurement systems comply with the legal framework
Usage of qualified electronic signatures is facilitated, including at the cross border
Better understanding of interoperability issues and greater interoperability between Member States
Increased standardisation
Increased confidence in eProcurement
Increased transparency
Greater participation and competition (especially cross border) reduces costs for public sector
Effort/cost of participation drops for all participants (public and private)
Greater security and reliability of procurements
No legal and few technical barriers for cross border eProc & use of new tools
All new tools used, correctly
Improve eGov interoperability and sophistication, including for eCertificates / eSignatures
Standardisation will likely trickle through to private section initiatives (including private procurement, eInvoicing, esignatures)
Technical know-how may favour participants with more sophisticated technical infrastructures
Automation may eliminate now unnecessary jobs; this may be offset by new jobs in innovative services
Standardisation will improve return on investment for eProc
Security may increase costs of compliance
Improve cross border access to public procurement markets, thus supporting the Internal Market
Reduce costs for the public sector by improving efficiency and stimulating competition in the Internal Market
Context:
•General goal: public proc must be non-discriminatory, generally available and interoperable and by no means restrict economic operators' access to the tendering procedure
•Linked legislation includes specifically the eSignatures Directive (provides a basic working tool) and Services Directive (addresses similar issues)
•Overall policy context: i2010 objectives
Member State Action:
•MS are expected (but not required) to implement compliant eProcurement infrastructure. Use of these systems was expected, as was the adoption of qualified signatures, but not required.
External factors:
•The Services Directive could have a strong impact, especially through the eSignatures work (CROBIES), and due to eDocuments concerns (IMI system)
•Large scale pilots provide key building blocks;
•Greater call for simplification, also from a political perspective, see e.g. Stoiber Group and ongoing review of eInvoicing rules

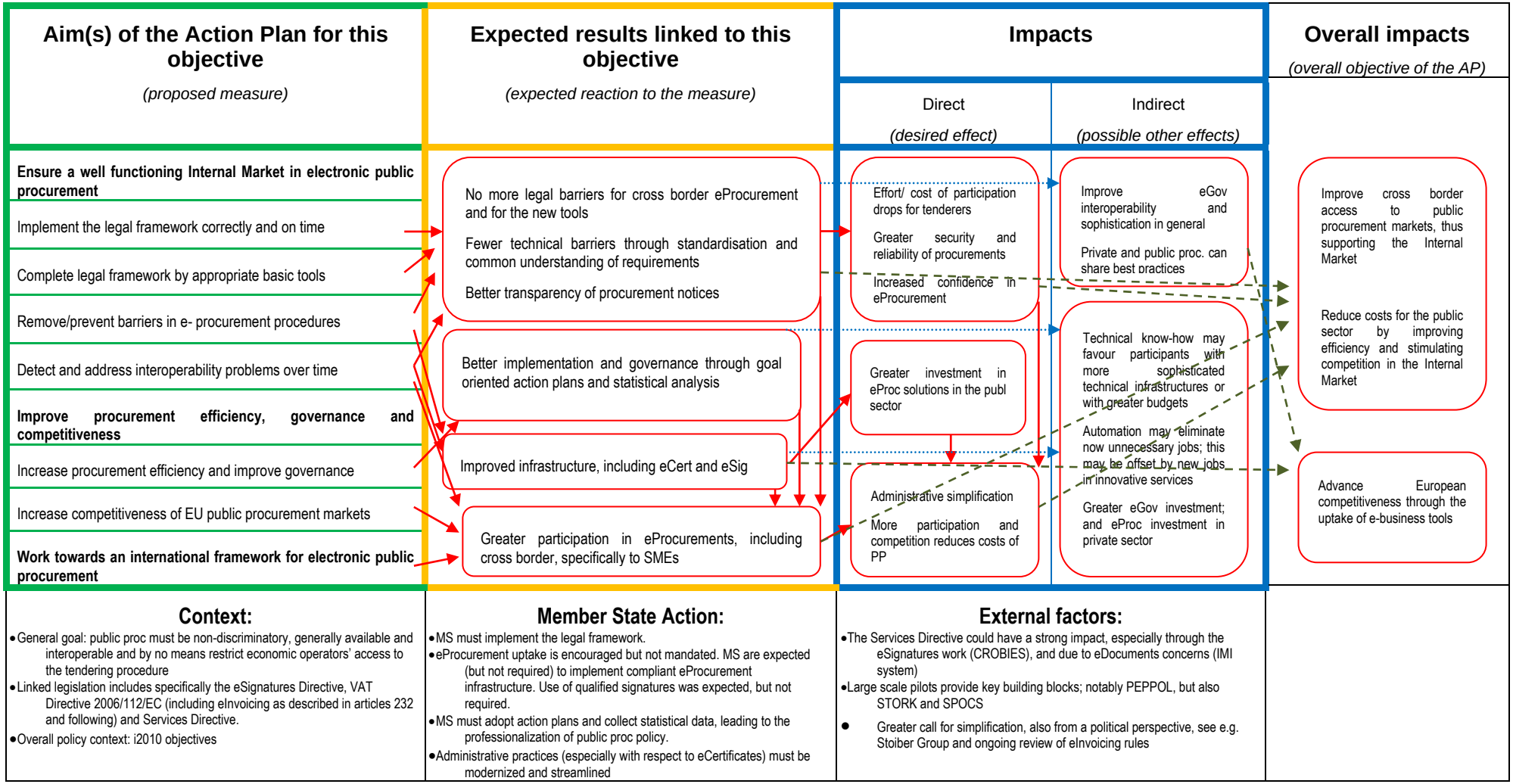
2.1.2 Second objective - Improve procurement efficiency, governance and competitiveness



2.1.3 Third objective - Work towards an international framework for electronic public procurement



2.1.4 Summary table – key measures, results and impacts



2.2 Establishment of the Action Plan

Based on the graphical overview of the intervention logic above, the next step is to examine *why* these specific objectives and means were chosen in the Action Plan, based on the state of eProcurement in 2004.

In the sections below, we will first briefly discuss the major principles of the intervention logic as shown in the graphical overview above (section 2.2.1), then the status of eProcurement in 2004 on the basis of the 2004 Impact Assessment (section 2.2.2), and finally we will tie these together by discussing how the policy choices of the Action Plan were envisaged to address the eProcurement issues in 2004.

2.2.1 Summary of the intervention logic principles

The Action Plan itself already noted that it was organised along three axes (the objectives discussed above):

- Ensure a well functioning Internal Market when public procurement is conducted electronically;
- Achieve greater efficiency in procurement and improve governance;
- Work towards an international framework for electronic public procurement.

As was also shown in the intervention logic graphics above (notably the 'overall impacts' columns), there is a common thread between these objectives: all of the measures in the Action Plan aim to accelerate the adoption of electronic public procurement in the Member States, in a way that would eliminate as far as possible any barriers to market access, i.e. barriers to the cross border use of eProcurement.

Each objective and each action serves a different aspect of this common thread, with the first and third objectives looking more emphatically (but not exclusively) at the market access aspects (the first objective at the Internal Market, and the third objective at the international market), and with the second objective focusing more on the acceleration of adoption.

From a strategic point of view, it should principally be noted that the Action Plan emphasises the establishment of the necessary basic building blocks for eProcurement (both at the national and European level), either by creating these building blocks (legal and infrastructural) or by eliminating/mitigating barriers to their use, but that the actual usage of eProcurement tools by the Member States is not mandated at any point. The approach is thus strongly oriented towards creating the possibilities, opportunities and incentives at the national level, rather than forcing the usage of eProcurement.

This means that a significant margin for policy making was left to the Member States. While certain elements of the Action Plan aimed to establish a common European approach, it also left room for

diversity in policy and implementation choices. The Action Plan's measures were thus conceived as being sufficient to conclusively address all barriers to cross border eProcurement.

This can be demonstrated by re-examining the individual measures in the Action Plan, and identifying the targeted party and the nature of the measure. For the first objective, the overview looks as follows:

Measure	Targeted party	Nature of the measure
The Commission issues an interpretative document on the new rules on eProcurement	Commission	Support in implementation
The Commission makes online training demonstrators available	Commission	Support in implementation
The Commission provides appropriate assistance to Member States in transposing the new legal provisions	Commission	Support in implementation
The Commission adopts new Standard Forms	Commission	Obligation to establish common infrastructure
The Commission presents proposals for revising the CPV	Commission	Obligation to establish common infrastructure
Commission presents a blueprint for a fully electronic system for the collection and publication of procurement notices on TED	Commission	Obligation to establish common infrastructure
Member States implement fully electronic systems at national level including appropriate tools for automated collection and publishing in TED	Member States	Obligation to establish national infrastructure
Member States and the Commission test, refine and validate the results of the IDA common functional requirements for eProcurement systems	Member States and Commission	Support in implementation
Member States review whether all operational eProcurement systems have been adjusted to the requirements of the Directives	Member States	Compliance assessment of existing systems
Member States introduce national accreditation schemes	Member States	Compliance assessment of existing systems
Member States and Commission consider through a feasibility study whether to introduce a European compliance verification scheme	Member States and Commission	Prospective policy assessment for compliance assessment
Commission proposes an action under the IDABC programme to help Member States coordinate implementing the use of advanced qualified signatures	Commission	Support in implementation
Member States apply, if required by national law, interoperable qualified electronic signatures	Member States	Statement of principle
CEN/ISSS completes gap analysis on interoperability needs	CEN/ISSS	Identification of interoperability barriers
Commission proposes to continue activities on interoperability issues	Commission	Identification/resolution of interoperability barriers

and monitoring of Member States developments		
The Commission and Member States promote standardisation activities at European level	Commission and Member States	Identification/resolution of interoperability barriers

Overview of measures under the first objective of the Action Plan

Looking at the table above, the following conclusions stand out:

- Member States are not required to use eProcurement at any stage. They are only required to implement the required building blocks, i.e. implement fully electronic systems at national level, assess the compliance of existing systems with the Directives, and ensure that the provisions of the Directives are respected if they decide to use eProcurement. As foreseen under the Directives, the Member States are required to use the new Standardised Forms and the CPV, but this does not necessarily involve the use of electronic means. Similarly, the Action Plan requires Member States to apply qualified electronic signatures (including for cross border procurements) if required by national law; thus, here too, the choice to use electronic means (in this case the qualified signature) lies with the Member State.
- The Commission is tasked with more direct obligations, which pertain to the establishment of the necessary tools (Standardised Forms and CPV), supporting the Member States in their implementation tasks, and foreseeing specific actions to reduce or eliminate interoperability issues.
- One third party (CEN/ISSS) is addressed as well through a specific measure, specifically aimed at identifying interoperability barriers.

The same pattern holds true in examining the measures scheduled under the second objective:

Measure	*Targeted party*	*Nature of the measure*
Each Member State prepares a national plan for introducing electronic public procurement	Member States	National policy to support adoption
Each Member State encourages similar plans by national buyers	Member States	National policy to support adoption
Commission continues monitoring work on eInvoices and eOrdering	Commission	Completing the framework
Member States set up statistical data collection and processing systems	Member States	Improving knowledge
Commission considers proposing services for the electronic supply of certificates	Commission	Completing the framework
Member States and the Commission agree on a common set of frequently required electronic certificates	Member States and Commission	Completing the framework
Commission proposes launching a study on eCatalogues using work by CEN/ISSS	Commission	Completing the framework
Public Procurement Network launches benchmark on auditing, transparency, and traceability of eProcurement systems	Public Procurement Network	Improving knowledge

Public Procurement Network organises workshops to improve tender document standardisation	Public Procurement Network	Improving knowledge
Member States launch and support specific awareness campaigns and training programmes targeted at SMEs at national and regional level	Member States	National policy to support adoption

Overview of measures under the second objective of the Action Plan

Again, measures aimed at the Member States aim to ensure that their policies encourage eProcurement, without however mandating the use of eProcurement, whereas the Commission is tasked with ensuring that the ecosystem required to fully realise the benefits of eProcurement is completed, including through a common vision on electronic business certificates, eInvoices and eOrdering. The Public Procurement Network, as an additional forum for the Member States to exchange their experiences and know-how, is also addressed by two measures, both of which aim to increase knowledge and understanding of specific aspects of eProcurement.

Finally, while the measures are exclusively oriented towards the Commission, the third objective again shows that the emphasis is on establishing critical enablers for eProcurement, rather than imposing any uptake:

Measure	Targeted party	Nature of the measure
The Commission pursues negotiations on the review of the Government Procurement Agreement (GPA)	Commission	Enabling international procurement
The Commission takes initiatives in the GPA to progress towards a common nomenclature for the classification of goods and services	Commission	Identification/resolution of interoperability barriers
The Commission interacts with international standardisation bodies and fora to avoid emergence of interoperability barriers	Commission	Identification/resolution of interoperability barriers
Commission cooperates with the Multilateral Development Banks network in view of co-ordinating technical assistance	Commission	Enabling international procurement
Commission considers adjustments and the feasibility of eProcurement in the context of the EU's external aid instruments	Commission	Enabling international procurement

Overview of measures under the third objective of the Action Plan

Globally, the trend is clear: the Action Plan mainly aimed to accelerate adoption of eProcurement and ensure market access by establishing the necessary building blocks. Member States were not required to adopt eProcurement at any stage; indeed, introducing binding requirements would not have been possible via an Action Plan in the absence of supporting provisions in the Directives. Rather it was hoped that these two goals (accelerate adoption and ensure market access) would occur naturally once the existing barriers had been eliminated and a favourable ecosystem for eProcurement was put in place, i.e. a framework to support all phases of eProcurement, including through supporting policies and awareness raising at the national level.

To understand the reasons behind these choices, it is important to consider the status of eProcurement at the time of the Action Plan's creation.

2.2.2 Status of eProcurement in 2004

To appreciate the reasons behind the measured listed above *(why* were these specific objectives and means chosen?), we should consider the state of eProcurement in 2004, on the basis of the 2004 Impact Assessment. While it would lead us too far to examine the European state of eProcurement in 2004 in detail[25], we can briefly identify the main achievements and issues at that time.

When the 2004 Impact Assessment was conducted, the Public Procurement Directives had already been adopted, but they had not yet been implemented in any Member State. Since the earlier European Directives on public procurement did not foresee explicit support for eProcurement, there were large differences between the Member States' legal frameworks and their available infrastructure. The 2004 Impact Assessment noted the following points:

With respect to the implementation of the legal framework:

- Member States were optimistic about the timely implementation of the Directives, with the majority of implementations planned for 2005, and no expected violations of the implementation deadlines.
- As for the question of correct implementation, only Denmark had a specific strategy in place yet. Other Member States indicated that implementation guidance from the Commission would be appreciated and would be likely to impact their regulatory implementation choices. The main concern flagged at this time was the question of adding further details to the provisions of the Directives (so-called gold plating) to facilitate their application in practice. While no Member States had specific plans for gold plating, guidance from the Commission was seen as useful to minimise the need for gold plating (which could result in interoperability barriers).
- 17 out of 25 Member States already had provisions in their national frameworks with respect to the use of electronic means in public procurements. In 7 Member States, specific procedures (including eAuctions and DPS) had already been regulated.
- In 2003, 23 out of 25 Member States were planning to transpose the provisions with respect to eAuctions (all but Belgium and Finland), and 18 out of 25 planned to implement support for DPS (excluding Belgium, Finland, France, Hungary, the Netherlands, Poland and Portugal). 16 Member States expected that buyer's profiles would be used.
- The link with eInvoicing was identified as a potential problem, given that uptake of eInvoicing was still very limited, and that eInvoicing would be necessary to reap the full benefits of eProcurement. Further action on this issue was invited as well.

[25] For a detailed overview, see the 2004 Impact Assessment: Action Plan on electronic Public Procurement, specifically Part 1: Baseline Analysis (December 2004); http://ec.europa.eu/internal_market/publicprocurement/docs/eprocurement/2004-12-impact-external-vol1_en.pdf

With respect to available infrastructure:

- 36 public procurement systems were identified in total, 21 of which were operational at the national level, 9 at the regional level, and 6 which were sector/context specific. 29 of the 36 systems were owned by a public body, although some of these were operated by private parties.
- These 36 systems covered 16 out of the 25 Member States; thus no eProcurement systems were available in 9 Member States.
- The following functionality figures were provided for these systems:
    - Notification about tenders: 33 systems, i.e. 92%.
    - Publication of tenders: 17 systems, i.e. 47%.
    - Management of receipts/submission of tenders: 9 systems, i.e. 25%.
    - Evaluation of tenders: 3 systems, i.e. 8%.
    - Ordering: 8 systems, i.e. 22%.
    - Invoicing: 1 system, i.e. 3%.
- Experiences with advanced forms of eProcurement were rare:
    - Public authorities in 10 countries had experiences with electronic auctions.
    - Public authorities in 2 countries had experiences with DPS.
    - Public authorities in 14 countries had experiences with eCatalogues.

  It should be noted that much of the reported experiences were only at the pilot level (6/10 for eAuctions, 1/2 for DPS, and 8/14 for eCatalogues); at the real-life operational level, experiences were thus only available in 4 countries for eAuctions, 1 for DPS, and 6 for eCatalogues. Further guidance on functional requirements was thus welcomed.
- Member States foresaw difficulties in ensuring that their technical infrastructure would be fully compliant with the provisions of the Directives. 11 Member States believed that they had eProcurement systems that complied with the Directives, whereas 14 believed that they did not. Specifically for newer features of the Directives (which at the time included eSubmission), compliance was expected to be rather low. The Member States therefore invited further guidance to conducting compliance assessments.
- Interoperability (or rather: cross border accessibility) was seen as a major issue. Member States with a functioning eProcurement system noted that their infrastructure generally operated as a strictly national initiative, which was difficult or impossible to use by foreign economic operators in practice. Interoperability issues were noted inter alia with respect to nomenclature, eCatalogues and eSignatures.
- Specifically with respect to electronic signatures, 15 out of 25 Member States declared that advanced electronic signatures had been introduced (although this didn't necessarily mean that they were used in eProcurement). Of the remaining 10 Member States, 7 declared their intention of introducing such signatures. Actual signature usage was very limited, with only Austria reporting significant uptake. 9 Member States reported that advanced electronic signatures would become mandatory for eProcurement, 8 reported that they would not, and the remainder hadn't decided on this issue yet. All Member States acknowledged the interoperability challenges in the cross border use of such signatures, and further action by the European Commission to help settle this issue was invited.

With respect to policy challenges:

- 21 Member States had developed a strategy for the introduction of operational eProcurement, and 23 had introduced an overall objective for the introduction of operational eProcurement. The scope of these strategies/action plans varied quite widely, as did their focus and level of detail. This divergence was considered likely to result in deployment at varying speed across the EU, creating a risk of market fragmentation.
- 19 Member States declared that they had established central procurement bodies, whereas the other 6 declared they had not.
- Uptake of framework agreements varied depending on the level of contracting authority. 10 out of 25 Member States declared not to use framework agreements at all. 15 Member States used them at the national level, 10 at the regional level, and 12 at the local level.
- Participation of SMEs was flagged as a concern, given the possible higher complexity and higher costs of eProcurement, at least in the initial stages.
- Human resource management and change resistance were seen as substantial barriers, both within public administrations and within economic operators. Overcoming cultural barriers, habits and institutional inertia was noted by some Member States as potentially the greatest challenge.
- In general, economic barriers were seen as significant, with the business case for eProcurement being hard to assess, especially at the economic operator's side. The economic operator might be required to make significant investments, without a clear perspective on the return.

In summary, in 2004 the availability of eProcurement systems was limited to slightly more than half of the Member States (16 out of 25), and support for two way communication within these systems (specifically eSubmission, and thus obviously also eOrdering, eAuctions, DPS etc) was relatively limited. Member States noted that their existing systems generally operated in isolation and would be hard for foreign economic operators to use. Due to the fact that public procurement occurred largely in a decentralised way, it would be hard for Member States to address these issues consistently.

To remedy these problems, the main points of attention raised by the Member States were the need for implementation guidelines, compliance verification guidance, and support in bridging interoperability gaps. It is in this context that the Commission drafted the 2004 Action Plan.

2.2.3 Policy choices of the Action Plan

Based on the status of eProcurement in 2004 as summarised above, several policy options were available to the Commission when deciding upon the most appropriate measures within the Action Plan. The main options and considerations were outlined principally in the 2004 Impact Assessment (in the discussion of potential scenarios for the implementation of eProcurement by 2010[26]), and in the Commission Staff Working Document annexed to the Action Plan (as a summary of the main reasons

[26] Part two of the Impact Assessment, see http://ec.europa.eu/internal_market/publicprocurement/docs/eprocurement/2004-12-impact-external-vol2_en.pdf

for the choices made in the Action Plan[27]). Without endeavouring to be exhaustive, we will try to summarise the main scenarios considered in 2004, and the Commission's final preference.

2.2.3.1 Findings from the 2004 Impact assessment

Essentially, the 2004 Impact Assessment identified three possible policy scenarios:

- Firstly, a **baseline scenario**, which was a projection of the 2004 main development trends in the field of electronic public procurement provided that the Commission were to take no further policy action (i.e. a 'no policy' scenario). In this case, uptake of eProcurement was still expected to progress, but at a very uneven pace between countries. The impact assessment predicted that under this option, by 2010:
    - The goal of generalised use of electronic means in public procurement would only be expected to be reached in the notification phase. This would mean that contract opportunities will be advertised online, but not necessarily that the tender notices are distributed electronically by the contracting authority.
    - A lower, but still significant, use of electronic means would be expected in the publication of tender documents and invoicing.
    - For the remaining phases, public procurement would not be expected to reach critical mass.

  This option was labelled as an insufficient driver in the 2004 Impact Assessment.
- Secondly, a **balanced approach** scenario, where a focused, and limited number of policy instruments are applied at the European level to ensure full and correct adoption of the new procurement directives at national level in collaboration with the EU Member States and to ensure that the implementation of electronic public procurement at national level across the EU does not conflict with the fundamental principles of the internal market. The scenario emphasised the need for measures to support timely implementation, prevent some compliance problems and promote harmonisation. The main responsibilities for meeting the requirements of the legislation would be left with the Member States.
- Thirdly, an **extensive effort** scenario, where a number of policy instruments are applied across the board by the European Commission in collaboration with the Member States in order to ensure not only the full and correct adoption of the legal framework at national level and the compliance of electronic public procurement systems with the fundamental principles of the internal market, but also to promote the uptake of electronic public procurement across the EU. This policy option was expected to significantly increase the pace of the conversion to eProcurement, thus opening up the market and realising further savings by promoting the participation in public procurements.

Based on these three basic scenarios, the following mix of policy instruments was proposed in the 2004 Impact Assessment:

[27] Commission Staff Working Document of 29 December 2004 - Annex to the Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions - "Action plan for the implementation of the legal framework for electronic public procurement"; see http://ec.europa.eu/internal_market/publicprocurement/docs/eprocurement/2004-12-impact-assessment_en.pdf

- Adoption of an interpretive document and support (consultation, information to Member States);
- Monitoring of implementation of new Directives in the Member States;
- Disseminating best practice examples and guidelines;
- Changing procurement instruments and processes to achieve simplification and efficiency gains;
- Revise and promote use of CPV vocabulary in EU and internationally;
- Promote interoperability and standards for different levels of electronic signatures;
- Promote interoperability and standards for eInvoices;
- Provide funding for international standardisation initiatives;
- Monitoring of the development in the area of security;
- Awareness and information dissemination activities targeted at economic operators and contracting authorities;
- Provision of training opportunities for economic operators and contracting authorities;
- Improve functioning and user friendliness of TED and promote use of TED above and below threshold.

Furthermore, the Impact Assessment suggested that three other policy instruments could be implemented as pilot activities:

- Surveillance of the public procurement market in Europe;
- Develop fully electronic system for local processing and validation of notices;
- Support development and innovation of simple and cost-efficient eProcurement systems.

Finally, two policy instruments were flagged as potentially useful under specific circumstances:

- The introduction of a voluntary accreditation scheme at European level;
- The promotion of interoperability and standards for different levels of electronic catalogues.

Thus, a mix of policy actions was proposed that would cover assistance in the implementation of the Directives by the Member States (as foreseen under the balanced approach scenario), but that also included a number of more operational actions aimed to establish certain key building blocks for the actual uptake of eProcurement in practice (as foreseen under the extensive effort scenario).

Clearly, much of these actions were ultimately included in the 2004 Action Plan, albeit in a sometimes modified form. In the section below, we will examine the considerations identified as conclusive to establish the final Action Plan in the Commission Staff Working Document annexed to the Action Plan.

2.2.3.2 Policy choices as discussed in the Commission Staff Working Document

The Working Document started from the observation that (as described above) uptake of eProcurement in the EU up until that point had been slow and uneven, with most Member States still at an early stage of development. National policies and strategies (when available) tended to focus strongly on realising cost savings, while largely overlooking the European dimension. Most applications were being developed on the basis of existing commercial marketplace products with minimal customisation, resulting in eProcurement systems that were software-driven rather than legislation-driven, thus creating limited interoperability across Europe. In this environment, it could be anticipated that electronic and paper procurement would need to co-exist for some time.

The expected gradual migration from paper based to electronic procurement would therefore need to be managed carefully, in order to address all of the risks already discussed above (including with respect to the legal environment, the technical environment, the administrative and organisational processes, businesses' access, and knowledge, skills and awareness). The final outcome should be an environment where the openness of the electronic public procurement market could be guaranteed, in a way that would ensure a critical mass of users (buyers and suppliers). Thus, the two basic goals of the Action Plan were established: accelerating the adoption of eProcurement to achieve this critical mass, and safeguarding market access by eliminating any barriers to the cross border use of eProcurement.

To achieve these goals, a 'business-as-usual' scenario (corresponding to the baseline scenario of the Impact Assessment) was seen as clearly insufficient. The other extreme, a 'fully standardised' scenario that would favour fully standardised common tools (including detailed descriptions of the desired architecture, functions and standards) was also rejected as being unrealistic. Two more moderate scenarios were however retained as viable:

- A 'classic approach', using legal instruments available at the European level in a focused and limited number of actions in order to ensure the full and correct transposition of the new provisions in national laws, to prevent the emergence of legal barriers and to complete the legal framework by adopting specific instruments (e.g. fully electronic standard forms, updated CPV) including agreement on international disciplines for electronic public procurement;
- The 'partnership approach': building on the 'classic approach', and initiating actions across the board in close cooperation and in a co-ordinated way between the Community and Member States in order to prevent barriers, improve governance and achieve greater efficiency in public procurement markets.

As in the Impact Assessment and building on its suggestions, a series of policy actions was then proposed and mapped against the three objectives of the Action Plan. Actions addressing mainly legal and technical barriers became a part of Objective 1 (establishing a well functioning Internal Market), actions focusing mainly on administrative and organisational barriers, businesses' access, and knowledge, skills and awareness became a part of Objective 2 (achieving greater efficiency in public procurement), and those favouring compliance with international obligations would fall under objective 3 (building an international eProcurement framework).

By weighing these against the 'classic approach' and 'partnership approach' options, the Working Document concluded that the 'partnership approach' would offer substantial benefits that would far outweigh any potential downsides. Notably, the partnership approach offered the key benefits of being

sufficiently comprehensive to effectively reduce Internal Market barriers and stimulate uptake of eProcurement. While it was acknowledged that some interoperability barriers would remain (which would not be the case under the 'fully standardised scenario'), this was seen as inevitable due to the diverse nature of these barriers and their structural characteristics. The Working Document also noted that, while this partnership approach might appear as a weaker than more orthodox tools of regulatory intervention and legal action, the application of those tools would likely have been ineffective in view of the complexity of implementing eProcurement.

An Action Plan was therefore proposed that would achieve these key objectives based on interaction and collaboration between all of the key stakeholders, both at the national, European and international level.

2.3 Summary of the ideal position as postulated in the 2004 EU Action Plan

At the heart, the vision for eProcurement embraced by the 2004 EU Action Plan was summarised on p.10 of the Commission Staff Working Document annexed to the Action Plan: "Use of electronic means should guarantee in practice that any business in Europe with a PC and an internet connection can participate in a public purchase conducted electronically." Thus, the end goal was an environment in which the fragmented landscape of 2004 would be eliminated to a large extent.

In effect, the stated ambition ('any business with a PC and an internet connection can participate') indicates a desire to see public procurement systems evolve from the existing and more formalistic paper environment to something much more like the consumer oriented e-business platforms which at the time had managed to survive the 'dot com bubble-crisis' of 2001, such as eBay and Amazon.

The model that such platforms presented for an eProcurement market indeed sounds appealing: these B2C/C2C platforms had managed to create a fully electronic international business market, accessible to anyone 'with a PC and an internet connection', and achieving substantial growth figures. By working around middlemen and reducing 'brick-and-mortar'-restrictions (e.g. round the clock accessibility), they could offer competitive prices and services to a general audience. As shown in the eBay example, even eAuction models could be supported, at a time when this modality was still in its infancy for public procurement in most Member States.

None the less, there are a few crucial differences that made (and continue to make) it difficult to directly apply these solutions to a public procurement environment, with two key issues being the legal requirements imposed on public procurements to ensure an equitable outcome, and of course the scale of the risk: both budgets and public interest in public procurements are several orders of magnitude larger than the average eBay/Amazon purchase. This makes it highly complex to obtain the same final result ('any business with a PC and an internet connection can participate') in a very different environment (rules of equity and need for stronger risk management). In a very real way, the litmus test to determine the impact of the Action Plan then becomes the following question: to what extent have Member States been able to achieve an openness comparable to these general e-business platforms, while still ensuring equity and risk management in their environments?

The Action Plan chose to migrate towards an open environment via a partnership approach, in which building blocks were to be gradually established in collaboration with the most suitable partners and then taken up voluntarily by the Member States, rather than a more heavy-handed approach in which

full standardisation would be followed by mandatory take-up at the national level. This choice was made based on the pragmatic perspective that such a heavy-handed approach would be unrealistic and likely ineffective, since many of the identified barriers also exist outside of an eProcurement context. Policy intervention based on an eProcurement Action Plan would thus likely spill over into other policy areas, creating possibly undesirable side-effects.

None the less, the Action Plan promoted a clear ideal vision of a barrier free electronic public procurement market, with accelerated take-up in practice.

It is clear that the key success criteria to evaluate the impact of the Action Plan should also be defined with respect to those two points: on the one hand the elimination of any barriers to market access (including from a cross border perspective), and on the other actual take-up.

In the following section, we will explain our methodological approach, including the specific questions to be evaluated in this report.

2.4 Methodological approach

2.4.1 Scope of the evaluation

The scope of the study is determined by its goal of evaluating the impact of the Action Plan in shaping the current eProcurement landscape, and in determining to what extent the vision and specific measures of the Action Plan have contributed positively to this landscape. At a high level, the following evaluation questions must be addressed:

- To what extent have public procurement procedures in the EU and EEA Member States been 'computerised', i.e. migrated from paper to the use of electronic means (including legal/policy/economic/technical aspects)?
- To what extent has the EU eProcurement Action Plan contributed to progressing towards the use of electronic means in public procurement, and to achieving or at least nearing the stated objectives of efficient and unhindered cross border eProcurement in the EU?

On the basis of the current status of eProcurement in the Member States, we will then need to examine the need for further actions at the European level, focusing on three concerns:

- What, if any, are the remaining issues, possible gaps and barriers that need to be addressed, in order to reach the objectives of the Action Plan of efficient and unhindered cross border eProcurement in the EU?
- What, if any, are the necessary policy improvements to be undertaken, and at which level (it is particularly important to identify whether action is more appropriate at EU or national level)?
- What future monitoring and evaluation requirements need to be put in place or improved to facilitate the assessment of future policy action in this area?

In the sections below, we will outline how we aim to answer these questions.

2.4.2 Definition of key evaluation questions

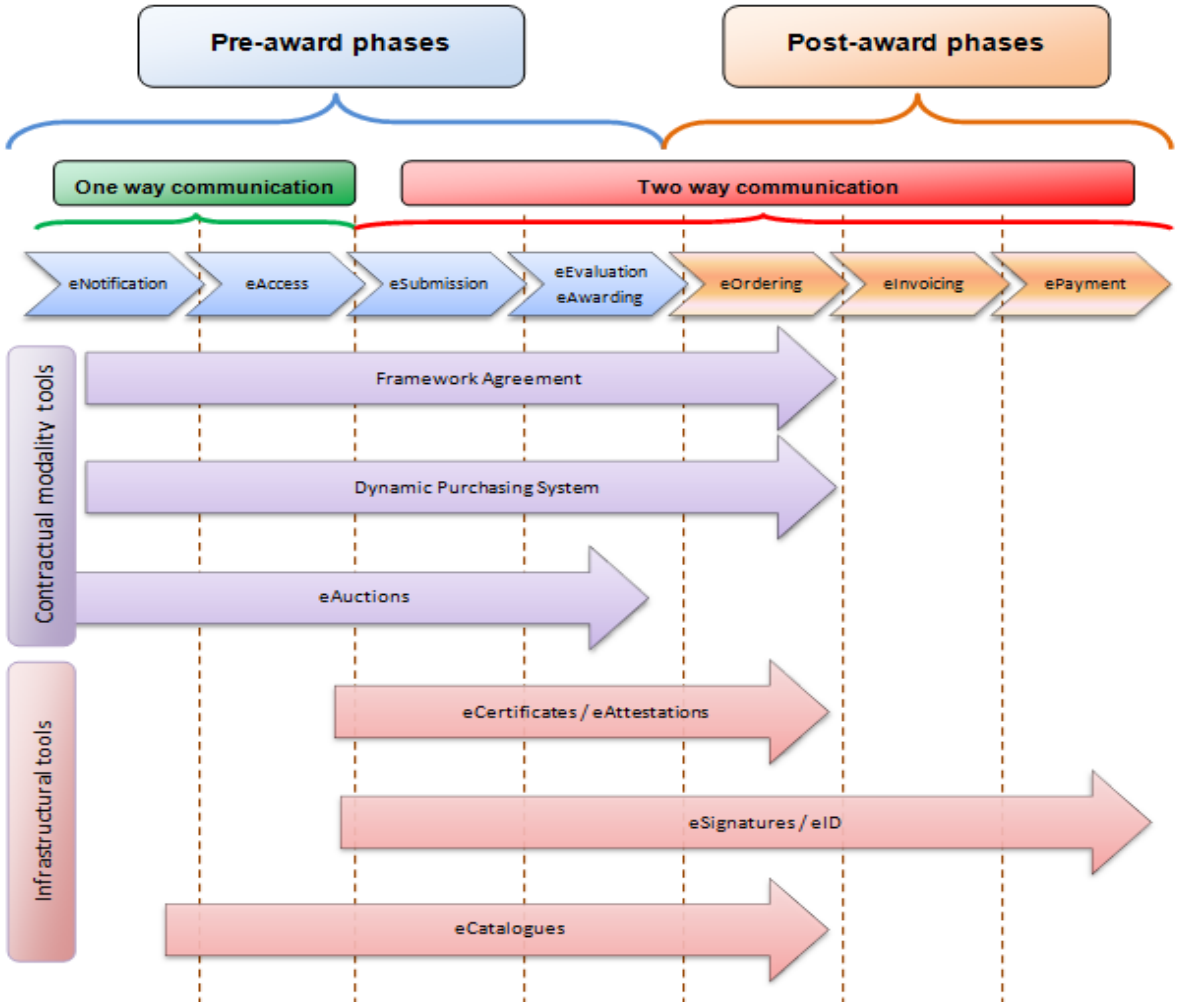
The two core questions for the evaluation of the Action Plan have been formulated above: to what extent has eProcurement been taken up, and to what extent has the Action Plan contributed to this? These seemingly simple questions are hard to address in practice. For the issue of take-up of eProcurement, a critical issue is that eProcurement encompasses a larger number of phases and tools, all of which can be completed partially or entirely using electronic means. In order to be able to draw meaningful conclusions about the state of eProcurement, we will have to examine each of those phases and tools separately, and evaluate to what extent the use of electronic means has become prevalent. To structure the existing phases and tools of eProcurement, we will use the categorisation presented in the graphic below, covering all key phases and tools that we will need to consider in detail, including pre-award and post-award phases.

For the purposes of the present report, the phases of eProcurement are understood as follows:

- eNotification: the electronic publication of tendering opportunities (including via procurement notices). This includes notably the submission of standardised notices to the Commission for publication via TED.
- eAccess: the publication of all necessary documents pertaining to the procurement on the web. This relates only to general documents, and not to documents that a specific economic operator may require (electronic attestations and certificates, e.g. tax attestations).
- eSubmission: the submission of proposals online.
- eEvaluation/eAwarding: the partial (i.e. decision support) or entire automation of the assessment of bids (eEvaluation), and the formalisation and communication of the outcome to the tenderers (eAwarding). Fully automated assessment is by definition only possible if assessment criteria are entirely quantitative (i.e. it does not require subjective appreciation) and clearly defined.
- eOrdering: the automatic placement of orders online, including particularly through the use of eCatalogues. This requires that a framework for the procurement has already been established.
- eInvoicing: the delivery of electronic invoices.
- ePayment: any digital financial payment transaction involving currency transfer between two or more parties.

It should be noted that the phases are not interdependent and may not always be present in a specific eProcurement process. It is e.g. entirely conceivable that an opportunity is published (eNotification) along with the necessary documentation (eAccess) and that an offer can be submitted electronically (eSubmission), but that all the following steps are done entirely through analogue processes.

Separately from these logical phases of eProcurement, the graphic below also identifies the different tools that can be used as a part of eProcurements, and which may span several phases. These include notably three contracting types (usage of framework agreements, DPS and eAuctions) and the use of horizontal building blocks that may or may not be used during several phases of an eProcurement (eAttestations, eSignatures/eID and eCatalogues), depending on the applicable legal framework, the available infrastructure and the policies of notably the contracting authority.



Overview of possible phases and tools in an eProcurement process

Each one of these tools and phases will be examined separately in the analysis sections below, to determine to what extent electronic means are being used, looking at individual countries (Member States and EEA Countries), but also at country clusters with a common approach.

Generally, with respect to the status of eProcurement in each of the countries, the following questions must be examined:

- Which parts/phases of the public procurement process have/have not been migrated to electronic means? Why/why not?
- To what extent have Member States chosen, in their national transposition of the legal framework, to exercise central control over the implementation process, and how has this impacted the transition process?

- **Legal aspects:** To what extent have the relevant provisions of the new legal framework been transposed by the Member States (current applications / planned future developments)?
  - Which Member States have chosen to limit themselves to the transposition of the directives and which have gone beyond it and how?
  - What specific provisions have been made in the transposition context aimed specifically at unhindered, interoperable cross border eProcurement in the EU? By whom and how?
- **Policy aspects:** What are the main basic national transposition and implementation choices and strategies?
  - Which Member States have adopted coherent national Action Plans for eProcurement or other, similar national implementation strategies and what are the defining features of such national implementation strategies?
  - What impact has the existence of a national Action Plan/ implementation strategy had on the effective uptake of eProcurement, also as compared to the EU Action Plan?
  - Are certain national transposition and implementation concepts more conducive to the effective uptake of eProcurement than others? If so, which and how?
- **Economic and technical aspects:** to what extent are electronic means used to replace paper and to what extent to exploit new, exclusively electronic tools and purchasing methods?
  - What is the current situation/effective up-take, and associated cost-benefits, of using electronic means to replace paper in traditional public procurement processes in the Member States?
  - What are the main developments regarding technical implementation aspects and standards in using electronic means to replace paper in traditional public procurement processes in the Member States? To what extent are implementations based on open source?
  - When using electronic means to replace paper in traditional public procurement processes, has eProcurement been organised in a way such as to respect the objectives of the Action Plan, in particular, to avoid barriers to cross border public procurement?
  - How consistent are these developments across Member States?

These questions will provide a baseline of information at the national level (including general trends between several clusters countries or across the EU). This baseline can then be used as a resource to examine the effective implementation of the Action plan, through a separate set of questions:

- Which steps have been taken at national and EU level to facilitate the use of eProcurement and to expedite transition, within the context of the Action Plan? Which relevant steps, if any, have been taken outside that context?
- Which steps have been taken at national and EU level to facilitate the use of eProcurement and to expedite transition, within the context of the Commission's IDABC programme?
- Have some actions been more successfully implemented than others and if so, why?
- To what extent have the eProcurement Action Plan and its stated objectives been taken into consideration in the national transposition and implementation choices and strategies for public procurement directives 2004/18/EC and 2004/17/EC?
- To what extent have interoperability and cross border aspects been taken into account/been addressed by Member States?
- What difficulties/barriers (e.g. to market access) for cross border tendering does eProcurement in Member States create for non-EU 3rd country suppliers and vice versa?

Finally, we must assess the impact of the Action Plan at the national level, including the contribution of individual actions, to the use of eProcurement in the EU:

- Did the Action Plan identify the right bottlenecks/obstacles to eProcurement?
- Have new issues or challenges emerged which need to be recognised and addressed in coordinated way?
- Did EU action plan foresee the right initiatives, implement an effective approach to realise the stated objectives?
- In particular, how have the strategy and actions funded under the Commission's IDABC programme contributed to the implementation of the action plan?

In chapter 3 below, we will first try to provide a bird's eye overview of the current eProcurement landscape in the 32 examined countries. Specific details will then be examined in chapters 4 through 8, with the applicable questions from the list above to be examined separately in chapter 9.

2.4.3 Methodological approach to data collection and analysis

2.4.3.1 Source materials – available data

One of the primary challenges for the present evaluation is the lack of comprehensive and reliable data sources on the national eProcurement status in a format that would allow comparison between the countries (including quantitative and statistical data).

To address this issue within the available timeframe, a three step approach was followed to ensure that a comparable and acceptable baseline of information would be available for each of the 32 countries to be examined.

- Firstly, an **overview of all existing relevant data sources** was drafted (see Annex A), and each of the available sources was analysed to determine their scope (what is the available information?), the level of detail and completeness (is the information usable?), and whether the information was still up to date. These sources included notably policy documents, studies that have been organised by the European Commission in relation to specific aspects of eProcurement (including specific phases or tools), ePractice use cases, the recent survey conducted by Ernst & Young as a run-up to the present study, and statistical data made available through the TED database or through Eurostat.
- A **standardised country profile** was then drafted by the study team, which included certain core information on each country (the 27 Member States, 3 EEA countries and the Candidate Countries Turkey and Croatia), including with respect to their legal framework, policy preferences, available infrastructure (at least with respect to the main eProcurement solutions as known to the study team), and actual uptake and impact (insofar as available). A country profile was created for each of these countries, including information drawn from the aforementioned sources, which was then amended and extended via desk research by the study team (including by examining online public procurement portals, available legislation,

ePractice use cases, and progress made through ongoing projects). The resulting profiles were finalised in late January 2010.

- These country profiles were then submitted for **validation by the national experts within the eProcurement Working Group**. This would allow national experts to ensure that the data provided in these reports would be at least reasonably representative of their national information.

It is clear that this approach will not be enough to address all challenges in the data set: exact quantitative data is scarce, even at the national level, as is data with respect to the economic impact of eProcurement (investments made and savings realised). When available, such data is usually not comparable between data sets (i.e. between countries), due to subjective elements or different understandings of the basic terminology.

By way of illustration, the evaluation also draws in some sections of the analysis on the outcomes of a recent eProcurement survey conducted by Ernst & Young. This specific survey was organised on-line, and invited a total of 3.235 entities to participate, consisting of 289 institutions with policy responsibilities, 1.148 economic operators, 1.716 contracting authorities, and 82 central purchasing bodies. These entities hailed from all Member States and EEA countries. As will be seen below, the responses can provide interesting indications, but the data set has some clear weaknesses as well:

- Low response rate: only around 300 entities provided a reply. This means the data is not fully representative of the European eProcurement market.
- Incomplete replies: possibly due to the length of the survey (an average of 60 questions, depending on the answers given), only one in five respondents completed the survey entirely. Thus, especially for the final questions in the survey, answers are relatively scarce.
- Multiple choice replies: most questions were in a multiple choice format. While this approach lends itself well to automated processing and the creation of statistics, nuances may be lost. This is problematic, given that a large number of the questions measured the opinion and impressions of participants, rather than clearly quantifiable data.

Thus, this data is mostly of interest to provide first impressions of key stakeholders, rather than being a good measure of the current eProcurement status in the EU.

Similarly, given that these country profiles are designed to provide a summary overview of the national situation, it is clear that they will not be comprehensive. While each report is intended to accurately describe the principal choices and infrastructure with respect to eProcurement, they will not necessarily encompass all solutions used in practice, especially in countries with a strongly decentralised infrastructure or approach. Thus, it is conceivable that a report may overemphasise or underemphasise the importance of a specific solution.

None the less, by combining existing sources with additional desk research complemented by a national expert review step, the resulting data should be sufficiently detailed and reliable to provide a realistic estimate of the European eProcurement situation.

2.4.3.2 Analysis approach

As was already noted above, the analysis will be primarily structured around the different phases and tools of eProcurement. To ensure that the evaluation is conducted systematically and that the questions identified above are indeed examined for each phase and tool, the same structure and approach is to be used in each subsection. For each phase and tool, we will provide:

- A definition and conceptual analysis: what does the phase or tool entail, and what is the link with eProcurement specifically?
- A conceptual (i.e. without looking at specific implementations) analysis of the main opportunities and challenges of eProcurement in the implementation and use of this phase or tool, from a legal/policy perspective and from a technical/infrastructural perspective. This section will thus identify the expected benefits of the introduction of eProcurement as well as any likely barriers.
- Description of the 2004 status and the vision established in the Action Plan for this phase or tool, based largely on the 2004 Impact Assessment and the summary provided above. This will determine the starting point and the goal of the Action Plan for the phase or tool.
- Description of the current status and evolution of the phase or tool, including a matching with the Action Plan vision. We will describe to what extent eProcurement has indeed been implemented and how, and whether it is taken up in practice. Next, we will assess whether the progress since 2004 matches the ambitions of the Action Plan on the basis of the questions outlined above. It should be noted that the report below will only provide general trends, typologies and conclusions, while country-specific details will be included in annexes to the report, to ensure its readability.
- Finally, any remaining gaps or barriers to the usage of eProcurement for the phase or tool will be identified. This will be a vital source of information for the recommendations to be provided as a conclusion to the report.

2.4.3.3 Defining remaining barriers and policy recommendations

Based on the findings of the preceding analysis step, we will then attempt to provide:

- A summary of the remaining barriers (legal, technical and organisational) to the use of eProcurement, especially in a cross border context, which have not yet been effectively addressed by the Action Plan.
- Policy recommendations for the future, including possibilities for improving the quality of available information to support policy making.

3 The state of play – a snapshot of eProcurement in the surveyed countries

3.1 Summary assessment of eProcurement phases: possibilities and practice in the Member States

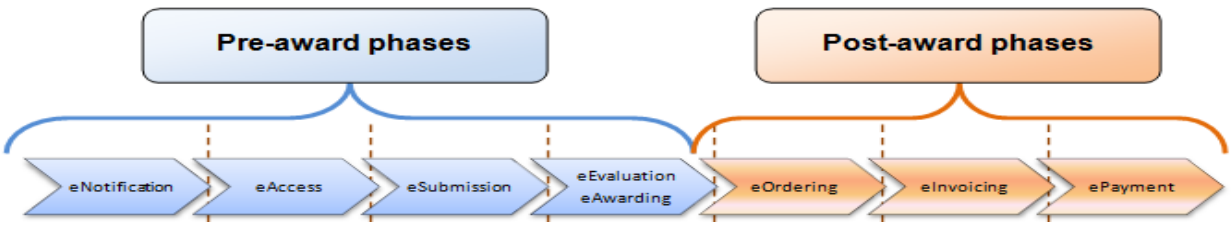
In chapter 4 and following, each of the eProcurement phases will be analysed in detail, looking at the 2004 status, the vision of the Action Plan, progress made between 2004 and 2010, and any remaining challenges. Before looking at these issues in detail, this section will provide a quick snapshot of the state of the art for each phase, focusing mainly on the currently observed status at the national level. The emphasis will thus be on providing an overview, with details and source references being integrated in chapters 4 and following.

While the approach will vary somewhat depending on the phase, we will generally aim to examine what the present theoretical possibilities are in each Member State, and to what extent these possibilities match the usage in practice. Phrased differently, we will examine the potential of the available eProcurement situation, and the actual impact in the field.

This will be done by identifying specific trends and commonalities between different clusters of countries, and assessing which approaches appear to be most conducive to furthering the actual impact of eProcurement. To this end, the high level goal of the Action Plan ('any business with a PC and an internet connection can participate', as stated on p.10 of the Commission Staff Working Document annexed to the Action Plan) will be used as a litmus test for progress in the assessment of each phase. The main conclusion with respect to European level accessibility and use will be underlined for emphasis in each section.

Individual tools (eSignatures, eDocuments, eAuctions, DPS …) will be examined separately in the next chapters of this report.

By way of a quick reminder, the different phases of eProcurement have been depicted above as follows:



Overview of possible phases in an eProcurement process

3.1.1 eNotification

eNotification can be summarily defined as the electronic publication of tendering opportunities, including via procurement notices. As a unilateral process (involving only communication from the contracting authority to the tenderer, but not the other way around) it is relatively simple to implement compared to other phases.

Looking specifically at the use of the standardised notices which must be used to announce procurement opportunities at the European level, the necessary infrastructure has been established to use electronic notices in each Member State. This is due to the acceptance of common formats for these documents, and to the creation of specialised tools that contracting authorities can use to submit their eNotifications in a structured format (either using online forms known as eNotices, or by using the eSenders platform, which relies on registered service providers that have implemented standard XML forms in their software). Both of these options are available in all countries, meaning that the potential for using eNotification stands at 100% in all countries. In addition, eNotifications can of course also be submitted in unstructured formats (e.g. e-mails containing scanned copies of paper notification forms). In the sections below, we will focus mainly structured eNotifications, since these are the only electronic communications which can be processed without human intervention, and which thus offer the greatest possible advantages (faster processing time, lower error rate).

Looking at actual take-up of electronic notices, we can measure how frequently structured electronic notices (i.e. sent through eNotices or eSenders) are currently being used, as opposed to unstructured electronic messages or non-electronic messages. At the European level (including EU institutions, Member States, non-EU institutions and non-EU countries), slightly over 89% of notices were sent in structured electronic form in 2009, with the Member States averaging out at 90,2%. Looking at national variations, the following table provides a summary of the existing possibilities and actual usage:

Possibilities	**Use of structured electronic notices**		
	Universally possible		
Use of structured electronic notices in practice (as a percentage of all total received notices in 2009)	**Low usage (under 85,2%)**	**Medium usage (less than 5% deviation from the European mean of 90,2%, i.e. 85,2% to 95,2%)**	**High usage (over 95,2%)**
	Belgium, Germany, Estonia[28], Greece, Hungary and Latvia[29]	Austria, Cyprus, Denmark, Spain, Ireland, Italy, Luxembourg, Netherlands, Poland, Portugal, Sweden, Slovakia and United Kingdom	Bulgaria, Czech Republic, Finland, France, Lithuania, Malta, Romania and Slovenia
	6 Member States	**13 Member States**	**8 Member States**

Overview of the national status with respect to eNotifications

[28] Based on 2009 figures only. Information provided by the OP (formerly OPOCE) indicates that Estonia's uptake of structured notices has risen to 100% in 2010, after the first eSender became available.

[29] Based on 2009 figures only. Information provided by the OP (formerly OPOCE) indicates that Latvia's uptake of structured notices has risen to around 70% in 2010, after the first eSender became available

The overview above shows 8 leading countries (over 95,2%). Remarkably, only 2 of these are part of the EU-15 (Finland and France). In fact, all countries with a near-100% status (Lithuania, Malta, Romania and Slovenia all submit more than 99,5% of their notices electronically) joined the EU in 2004. The lowest uptake ratings were reported in Latvia and Estonia, both of which fall significantly short of 15%. However, this was a strictly temporary situation, caused by the lack of any qualified eSender in these countries until the end of 2009

The overview above shows that there do not appear to be any significant barriers left to the use of eNotifications, either from a technical/infrastructural or legal perspective. The introduction of a cross border dimension changes little for this phase, as there are no significant access/usage difficulties related to eNotification when using TED as a publication solution. The main challenge is therefore to ensure that contracting authorities migrate more systematically to the electronic solutions available to them, i.e. to overcome traditional practices and institutional inertia.

3.1.2 eAccess

Access to tender documents refers to the ability to obtain (copies of) any tender documents and specifications that describe the scope and requirements of a specific procurement opportunity. In eProcurements, such information will of course be made available in an electronic format, typically by publishing the relevant information on one or more website(s) or by sending it via e-mail as an automated response to a request from an economic operator. Like eNotification above, eAccess is in principle a unilateral process, which is therefore less complex than most other eProcurement phases.

The availability of eAccess in each surveyed country can be examined at a high level based on the country profiles drafted and validated in the course of this study, specifically to determine how many of the 32 examined countries have established one or more sites supporting eAccess as a phase. As indicated in the table below, all countries which identify an operational eProcurement site indicate that eAccess is one of the supported phases. Thus, it seems that this phase has reached near universal availability, being offered even in countries where eSubmission is not yet available at the operational stage, with the sole exceptions being countries where no advanced operational eProcurement infrastructure could yet be identified (notably Greece, Iceland and Liechtenstein). Even in those countries, it should be noted that it is possible for contracting authorities to publish the relevant documents directly on their websites.

Possibilities: is eAccess available?	**eAccess not supported via a known eProcurement site**	**eAccess supported via a known eProcurement site**
	Greece, Iceland and Liechtenstein	Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Norway, The Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Turkey and United Kingdom
	3 countries (including 1 Member State)	**29 countries (including 26 Member States)**

Overview of the national status with respect to eAccess

Cross border accessibility can be marred in practice through language barriers. Based on an examination of 129 key sites, 39 provided at least some information in languages other than the national language(s). In each of these 39 cases, English is among the supported languages. However,

only 13 of these 39 were ranked as being comprehensive, i.e. providing enough information to permit full usage of the site on the basis of the translation. Language coverage thus remains challenging. As was also the case for eNotifications, apart from the language barrier, the introduction of a cross border dimension changes little for this phase, as there are no significant access/usage difficulties.

Impact (i.e. the extent to which eAccess is used in practice) is hard to measure precisely, given that no statistics on usage are available. In the absence of a more precise metric, the comments received in a 2008-2009 online survey by Ernst & Young can be used as an indicator. On the basis of this survey, 46% of economic operators who replied to the question whether they used eAccess answered in the affirmative. More tellingly, 60% of CPBs (whose core activity is the organisation of procurements for other authorities) noted that eAccess was the most frequently used service they offered. This seems to confirm that the required eAccess infrastructure exists, but that it is not used very systematically by economic operators yet.

3.1.3 eSubmission

eSubmission – the electronic submission of tenders – is a more complex phase than those summarised above, due to its bilateral nature: rather than information merely being delivered to the economic operators (as in the earlier two phases), the economic operators will now need to be able to respond. The authenticity and integrity of the offers will therefore need to be ensured, which notably poses interoperability challenges.

The two main questions to determine the possibilities and impact of eSubmission relate to the availability of eSubmission (in which country is this functionality available?), and the openness of the systems being used (how easy/hard is it for economic operators to use eSubmission)? The table below summarises the situation (as described in greater detail in chapter 6):

Possibilities: is eSubmission available?	**eSubmission not supported via a known eProcurement site**	**eSubmission supported via a known eProcurement site**
	Bulgaria, Croatia, Greece, Iceland, Liechtenstein, Luxembourg and Turkey	Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Latvia, Lithuania, Malta, The Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and United Kingdom
	7 countries (including 3 Member States)	**25 countries (including 24 Member States)**
Practice: is eSubmission accessible?	**Username/password based authentication**	**PKI based authentication**
	Predominantly found in the common law countries (UK and IE), in Nordic countries (notably Finland) and in the Netherlands[30] No interoperability barriers	Predominantly found in continental Europe Very limited cross border interoperability

Overview of the national status with respect to eSubmission

[30] Specifically in the ProRail platform used for procurements in the railway industry; see Annex VI.

25 out of 32 countries (78%) have thus implemented eProcurement sites supporting two-way communication (either public sector or private sector controlled/owned sites). Of the remaining 7 countries, 2 have not yet established notable eProcurement infrastructure (Greece and Liechtenstein), and the other 5 have implemented sites that only support eNotification and/or eAccess, in which eSubmission support is under development. The scope and approach of these solutions vary strongly, as will be examined in chapter 6: in some countries eSubmission is only possible in specific regions or sectors, simply because the required infrastructure is not universally available.

Looking at accessibility, the two main[31] choices are requiring the use of username/password authentication following prior registration, and the use of PKI based authentication systems (i.e. supported by cryptography using encryption certificates). The latter has the benefit of being a two-factor approach (being based on something that the tenderer knows (a PIN-code) and something that the tender owns (a certificate)), which enables greater security than the single-factor approach of username/password based systems. Obviously, actual security varies greatly depending on the exact implementation modalities, and a username/password based system employing sound security practices (e.g. verification of registration information) can be more secure than a poorly designed PKI based system. The disadvantage of lesser security of username/password based systems appears to be largely theoretical in practice, since experts from the UK and Ireland noted that no incidents related to the authentication approach have occurred since their introduction.

Apart from the question of security, the choice for an authentication system based on username/password or PKI has clear interoperability consequences. In practical terms, username/password based systems pose no interoperability challenges other than the completion of the registration process (which may be complicated due to language barriers or the need to provide information which is only available at the national level). PKI systems on the other hand are currently almost universally[32] unable to accept foreign solutions, meaning that foreign economic operators will be unable to use eSubmission unless they can obtain a PKI solution issued in the country in which they wish to submit an offer.

Thus, in practical terms, the choice of a PKI based authentication system has serious negative impacts on cross border interoperability. While efforts are underway to remedy this issue, resolution of this problem in the short term does not appear to be likely.

3.1.4 eEvaluation/eAwarding

In an electronic environment, eEvaluation and eAwarding refer to the partial (i.e. decision support) or entire automation of the assessment of bids (eEvaluation) and the formalisation and communication of the outcome to the tenderers (eAwarding). Fully automated assessment is by definition of course only possible if assessment criteria are entirely quantitative (i.e. it does not require subjective appreciation) and clearly defined.

[31] As will be noted in chapter four, a small number of countries have implemented hybrid systems, in which online registration results in the tenderer receiving a username, password, and software based PKI certificate via e-mail.

[32] As will be discussed in chapter 4, a few countries have implemented limited interoperability solutions, notably in Austria and Norway.

Looking at the country profiles drafted and validated in the course of this study, we can assess how many of the 32 examined countries have established one or more portals or platforms supporting eEvaluation/eAwarding as a phase.

Possibilities: is eEvaluation/eAwarding available?	**eEvaluation/eAwarding not supported via a known eProcurement site**	**eEvaluation/eAwarding supported via a known eProcurement site**
	Bulgaria, Croatia, Czech Republic, Estonia, Finland, Greece, Iceland, Latvia, Liechtenstein, Luxembourg, The Netherlands, Poland, Spain and Turkey.	Austria, Belgium, Cyprus, Denmark, France, Germany, Hungary, Ireland, Italy, Lithuania, Malta, Norway, Portugal, Romania, Slovakia, Slovenia, Sweden and United Kingdom
	14 countries (including 10 Member States)	**18 countries (including 17 Member States)**

Overview of the national status with respect to eEvaluation/eAwarding

A narrow majority of countries (18 out of 32, or 56%) reports the availability of eEvaluation/eAwarding functionality via one or more platforms or portals. The 14 remaining countries are typically still developing their eProcurement infrastructure.

There do not appear to be significant gaps or barriers in the use of eEvaluation/eAwarding, depending on the complexity of the functionalities to be developed, irrespective of any cross border component. Fully automated eEvaluation/eAwarding modules (which assess the admissibility of bids, compare them, select a winner and subsequently notify the participants) are of course highly complicated, and require a very comprehensive approach covering each aspect of the procurement (validating electronic signatures, validating any evidentiary documents, handling the semantic aspects by determining and comparing the key characteristics of each bid, etc). However, in practice Member States seem to be taking a much more pragmatic approach, by creating modules that support representatives of the contracting authorities in evaluating and awarding contracts, rather than attempting to fully automate this process. Indeed, full automation would be extremely complex and costly, and may not be applicable to a substantial number of contracts due to the presence of subjective elements requiring human appreciation. Thus, a gradual approach – as currently taken in the surveyed countries – appears to be advisable.

3.1.5 eOrdering

eOrdering is the automatic placement of orders online, including particularly through the use of eCatalogues (which are examined in a separate chapter on eProcurement tools below). This phase is optional, and will not take place in procurement contracts in which the contract conclusion already defines the exact supplies or services to be delivered under the procurement. eOrdering will only occur in cases where the concluded procurement contract has established a framework (such as a framework agreement or DPS) within which supplies or services can be ordered.

Looking at the country profiles drafted and validated in the course of this study, we can assess how many of the 32 examined countries have established one or more portals or platforms supporting eOrdering as a phase:

Possibilities: is eOrdering available?	eOrdering not supported via a known eProcurement site	eOrdering supported via a known eProcurement site
	Bulgaria, Croatia, Estonia, Greece, Iceland, Liechtenstein, Latvia, Lithuania, Luxembourg, Malta, The Netherlands, Slovakia, Slovenia and Turkey	Austria, Belgium, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Hungary, Ireland, Italy, Poland, Portugal, Romania, Spain, Sweden, United Kingdom and Norway
	14 countries (including 10 Member States)	**18 countries (including 17 Member States)**

Overview of the national status with respect to eOrdering

Thus, 18 countries (including 17 Member States) report having implemented an eProcurement system allowing the use of eOrdering. This represents 63% of Member States, as compared to 24% reported in 2004.

With respect to the impact and cross border use of eOrdering, two approaches can be distinguished, with neither being clearly dominant at this time: centralised models rely on a centralised website through which orders are sent using the format imposed by the site operator (e.g. PDF and/or xCBL 3.5 for the Austrian e-Shop). In decentralised models on the other hand, standardised orders can be used in a variety of systems (e.g. the Danish OIOUBL format, which is a national instantiation of OASIS UBL 2.0). Broadly speaking, the first approach emphasises the platform, whereas the second emphasises the order.

Globally, format requirements are strongly linked to local contexts, i.e. either a specific system (in the centralised model) or a specific national/regional format (in the decentralised model). Either way, cross border interoperability is presently very limited, due to the lack of commonly supported standards. While standardisation efforts continue to work on this problem (notably within CEN), no international standard appears to have seen significant take-up within the Member States (although several national formats are based on international standards).

3.1.6 eInvoicing

eInvoicing is the automated process of issuing, sending, receiving and processing of invoice and billing data by electronic means. In practical terms, the main characteristic distinguishing eInvoicing from traditional (paper) invoicing is the fact that the invoice is not only generated but also delivered in an electronic format, without a transformation to a paper form being required. The exact methods of communication must be agreed between partners.

eInvoicing is a transversal process, since it plays a crucial role in any eBusiness process, rather than being specific to eProcurements. It has also been addressed as such: eInvoicing regulation and standardisation work at the European and international level is not specific to a public procurement context.

Looking at the country profiles drafted and validated in the course of this study, we can assess how many of the 32 examined countries have established one or more portals or platforms supporting eInvoicing as a phase:

Possibilities: is eInvoicing available?	eInvoicing not supported via a known eProcurement site	eInvoicing supported via a known eProcurement site
	Austria, Belgium, Bulgaria, Croatia, Cyprus, Estonia, France, Germany, Greece , Hungary, Iceland, Ireland, Italy, Liechtenstein, Latvia, Lithuania, Luxembourg, Malta, The Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Turkey and United Kingdom	Czech Republic, Denmark, Finland, Norway, Sweden and Spain
	26 countries (including 22 Member States)	**6 countries (including 5 Member States)**

Overview of the national status with respect to eInvoicing

6 countries thus specifically report using eInvoicing in their eProcurements. While a substantial increase over the single system reported in 2004, the number thus remains limited. A crucial problem remains the standardisation of eInvoices: standardisation work has been undertaken at the international level (notably UN/CEFACT, OASIS UBL, and ISO); at the European level through IDABC's work, through the Expert Group on eInvoicing, and through CEN/ISSS; at the cross-national level through the Northern European Subset (NES, a specification of UBL); and via several national initiatives (FINVOICE (Finland), SveFaktura (Sweden), E2b (Norway), OIOUBL (Denmark), and FACTURAE (Spain)), which are all commented in chapter 6 below.

With respect to impact, it is clear that the Nordic countries have taken a leading role, including particularly Denmark, Finland, and Sweden. In each case, success has followed an obligation to use eInvoicing: either an obligation for economic operators to issue eInvoices, or at least an obligation for contracting authorities to accept them. Where figures are available, these approaches appear to have been very cost effective.

While standardisation work has not yet reached a fully mature stage, there is a clear convergence towards XML based standards, mainly building on UBL. Most major identified deployments in the Member States (including in Denmark, Finland, Sweden and Spain) are built on this foundation, and UBL is also the starting point for European projects such as PEPPOL and e-PRIOR. Furthermore, within CEN (in coordination with PEPPOL, e-PRIOR, NES-UBL and several national bodies) efforts are ongoing to improve convergence between national instantiations of these standards.

Thus, while the standardisation of eInvoicing processes and documents is currently still largely fragmented and cross border interoperability is therefore very limited, efforts currently appear to be converging on a European approach based on UBL, which could significantly favour the uptake and impact.

Apart from the standardisation issues, legal challenges also remain. It was noted to be particularly complex to ensure that an eInvoicing solution which is compliant with legislations in a specific Member State would also satisfy the requirements in a different Member State. In that respect, the European regulatory framework with respect to eInvoicing does not appear to have achieved the goal of enabling

an Internal Market for eInvoicing services. Thus, both legal and technical barriers to the cross border use of eInvoices remain.

3.1.7 ePayment

ePayment generally refers to any digital financial payment transaction involving currency transfer between two or more parties. These transfers may be carried out by companies uploading information in specified formats to banks, either through the internet or by transmitting data files directly to banks or their intermediaries through secured or closed networks. The recent Payment Services Directive[33] and the resulting Single Euro Payments Area[34] (SEPA) can be flagged as relevant achievements that eliminate some of the barriers for electronic payments.

Looking at the country profiles drafted and validated in the course of this study, we can assess how many of the 32 examined countries have established one or more portals or platforms supporting ePayment as a phase:

Possibilities: is ePayment available?	ePayment not supported via a known eProcurement site	ePayment supported via a known eProcurement site
	Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Greece, France, Germany, Hungary, Iceland, Italy, Liechtenstein, Lithuania, Latvia, Luxembourg, Malta, The Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and Turkey	Finland, Ireland, United Kingdom and Norway
	28 countries (including 24 Member States)	**4 countries (including 3 Member States)**

Overview of the national status with respect to ePayment

Thus, ePayments were reported to be a part of eProcurement systems in only 4 countries: Ireland, Finland, Norway and the UK (i.e. only in common law and Nordic countries).

There do not appear to be any real barriers to using ePayments in the European Union, possibly due to the influence of SEPA initiatives. None the less, this is a feature which is only rarely reported as being supported in eProcurement systems. This may be due to the fact that implementation of ePayment modules in the absence of other post-award phases (notably eInvoicing) offers only limited added value, since automated processing would at any rate not be possible.

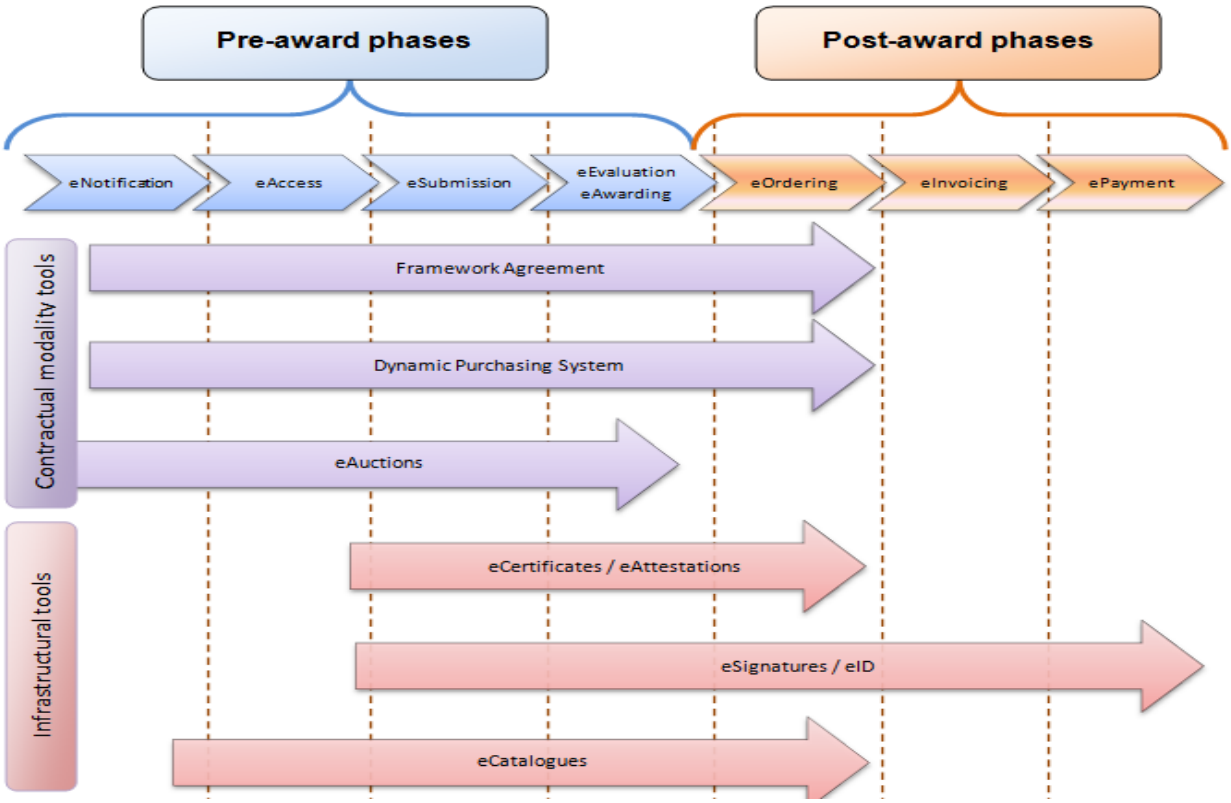
[33] Directive 2007/64/EC of the European Parliament and of the Council of 13 November 2007 on payment services in the internal market amending Directives 97/7/EC, 2002/65/EC, 2005/60/EC and 2006/48/EC and repealing Directive 97/5/EC Text with EEA relevance, see http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:319:0001:01:EN:HTML; see also http://ec.europa.eu/internal_market/payments/framework/index_en.htm

[34] See http://ec.europa.eu/internal_market/payments/sepa/index_en.htm

3.2 Summary assessment of eProcurement tools: possibilities and practice in the Member States

As with the assessment of the distinct phases above, in this section we will provide similar summaries for each of the tools examined in chapter 7 below, including the main conclusions with respect to cross border accessibility and use of each tool.

By way of a quick reminder, the different tools of eProcurement have been depicted above as follows:



Overview of possible phases and tools in an eProcurement process

3.2.1 Framework agreements

Framework agreements are defined in the Directives as “an agreement between one or more contracting authorities and one or more economic operators, the purpose of which is to establish the terms governing contracts to be awarded during a given period, in particular with regard to price and, where appropriate, the quantity envisaged”. Through framework agreements, a temporary ad hoc environment is thus created within which contracting authorities can launch specific procurements, for which offers can only be submitted by economic operators who are a part of this environment, and in which these offers must comply with the specific requirements of the environment. In short, they create

closed public procurement environments within which procurements can be organised more efficiently, but at the expense of lower competition (due to the impossibility of new economic operators to join the framework). In an electronic environment, the advantages of increased efficiency can be leveraged even further, due to the fact that a common technological approach can be re-used for procurements within a framework agreement.

As will be examined in greater detail in chapter 7, all examined countries currently use framework agreements in practice[35]. At the European level, an analysis of public procurement notices received indicates that 7,32% of procurement notices relate to framework agreements. However, uptake varies substantially from country to country:

Possibilities	**Can framework agreements be used for eProcurements?**		
	Usage is universally supported[36].		
Practice	**Low usage (less than 1% of notices)**	**Medium usage (1 to 10% of notices)**	**High usage (more than 10% of notices)**
	Bulgaria, Cyprus, Greece, Hungary, Italy, Lithuania, Malta and Poland	Austria, Belgium, Czech Republic, Germany, Estonia, Spain, Finland, Ireland, Luxembourg, Latvia, Portugal, Romania, Sweden, Slovenia and Slovakia	Denmark, France, Netherlands and United Kingdom
	8 Member States	**15 Member States**	**4 Member States**

Overview of the national status with respect to framework agreements

While the importance of the statistic should not be overestimated (since it only relates to the number of framework agreements, but not to their actual use), it is none the less interesting to note that the four high usage countries are EU-15 countries, whereas 7 of the 8 low usage countries joined the EU in 2005. Examining the country profiles, the largest users of framework agreements appear to be Austria, the UK, Belgium, Italy, Finland, France and Sweden – in particular, in Sweden, where the systematic use of framework agreements is seen as the privileged instrument to reduce costs and to improve the overall efficiency of public procurement.

Looking at the number of economic operators involved in any given framework agreement, the statistics show that in 2009, slightly over 60% of framework agreements was concluded with only a single operator. This figure has increased steadily in each of the past four years. The statistic is worrisome, as it seems to confirm the Action Plan's concern that closed environments would indeed limit competition in practice. Based on this statistic, current practice seems to favour efficiency over competition.

Finally, analysis of the received notices in 2009 also shows that the number of framework agreements involving more than 10 economic operators saw a significant jump in 2009, passing the 10% threshold

[35] It should be noted however that the statistics provided for Belgium do not relate strictly to framework *agreements* (which are not yet legally possible in Belgium) but rather to framework *contracts.* The difference lies in the scope: framework contracts are concluded between a single contracting authority and a single economic operator for a limited duration of time, whereas framework agreements can involve one or more contracting authorities and one or more economic operators. This distinction has however not been made in the notices filed by Belgian contracting authorities, who (incorrectly) report to be using framework *agreements.*

[36] See the directly preceding footnote.

for the first time. This figure would likely include a significant number of framework agreements concluded by central purchasing bodies (CPBs), since the core activity of these entities consists precisely of conducting efficient procurements on behalf of other contracting authorities. Indeed, at this time 11,17% of framework agreements are concluded by CPBs, which is significantly higher than the average of 7,32% for all contracting authorities. Thus, framework agreements are used as a key tool by CPBs to maximise efficiencies.

Generally, it seems clear that framework agreements are effective in reducing administrative burdens and costs, and that they are used extensively by CPBs to aggregate procurements for this purpose. However, the statistics also suggest that framework agreements are substantially used to set up a framework with only a single economic operator, which would inevitably harm competition. The available quantitative data is inconclusive on the exact magnitude of this negative impact: while framework agreements are generally perceived as beneficial to efficiency and are indeed promoted as such in a number of Member States, the impact of decreased competition is less clear. More transparency on this point (i.e. pricing comparisons between open and framework procurements) would be desirable.

3.2.2 Dynamic Purchasing Systems (DPS)

A DPS is defined in the Directives as "a completely electronic process for making commonly used purchases, the characteristics of which, as generally available on the market, meet the requirements of the contracting authority, which is limited in duration and open throughout its validity to any economic operator which satisfies the selection criteria and has submitted an indicative tender that complies with the specification."

In essence, a DPS can be thought of as an electronic open framework agreement, i.e. a procurement system in which economic operators that have joined the DPS via an indicative tender can choose to announce the availability of standardised goods, services or works which meet the requirements defined by the contracting authority that set up the DPS, and which can thereafter be used by that contracting authority to easily and electronically acquire such goods, services or works from the most favourable economic operator. The main opportunities provided by a DPS lie precisely in its ability to combine the positive characteristics of a framework agreement with the possibility to address the weaknesses of framework agreements:

- Like framework agreements, DPS can be used as tools to reduce procurement costs and increase the efficiency of public procurement by allowing multiple procurements to be organised without having to invest the resources of a full open procurement in each instance.
- However, a DPS negates the main weakness of framework agreements, namely its closed nature. The DPS is an open implementation: new economic operators may join a DPS after its establishment, and the characteristics of each operator's offer can be enhanced during the DPS' existence.

Member States are not required to implement support for DPS in their legal framework. Thus, the first crucial questions are (1) whether or not DPS are legally supported, and (2) whether technical support is provided for them (i.e. can contracting authorities fall back on a common infrastructure, or do they need to establish a DPS on an ad hoc basis)?

Possibilities	Legally supported	Not legally supported
	Austria, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, France, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Malta, The Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain and United Kingdom	Belgium, Finland, Germany, Luxembourg and Sweden
	22 Member States	**5 Member States**
Practice	**DPS not supported via a known eProcurement site**	**DPS supported via a known eProcurement site**
	Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Greece, Finland, Germany, Hungary, Iceland, Ireland, Italy, Liechtenstein, Latvia, Lithuania, Luxembourg, Malta, Norway, The Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom and Turkey	France
	26 Member States	**1 Member State**

Overview of the national status with respect to DPS

Thus, only five Member States have not yet implemented the relevant legal provisions, and of these, implementation efforts are known to be underway in Belgium, Finland and Luxembourg. However, only one eProcurement site is known to have built-in support for DPS, which suggests that uptake in practice will be limited.

Based on an analysis of TED statistical data, the collected country profiles and feedback from national experts, DPS have largely failed to find significant uptake in the surveyed countries. Contrary to framework agreements, they do not yet take an important strategic role in national procurement strategies, nor do they seem to account for a substantial part of the European eProcurement market. Globally, responses indicate that the role and use cases of DPS are not well understood, and that their inherent advantage over framework agreements (namely their open and therefore more competitive nature) are insufficiently recognised. It is possible that CPBs and their use of framework agreements (as described above) play a role in this, since contracting authorities can leverage some of the same benefits as expected of a DPS (namely the larger number of economic operators combined with more flexible formal requirements) without having to actually implement a DPS. In that respect, the trend towards aggregation of common purchases via CPBs may have undermined part of the market appeal of the DPS.

3.2.3 eAuctions

eAuctions are defined in both Public Procurement Directives as ‘a repetitive process involving an electronic device for the presentation of new prices, revised downwards, and/or new values concerning certain elements of tenders, which occurs after an initial full evaluation of the tenders, enabling them to be ranked using automatic evaluation methods’. Thus, through an electronic auction, economic operators have the possibility of updating their offers one or more times after the initial submission with respect to the price or to other criteria that can be automatically evaluated, in order to ensure that their offer is optimally placed to win the procurement contract. The dependence on automatic evaluation is the reason why the Directives exclude certain service contracts and certain

works contracts having as their subject matter intellectual performances from the scope of electronic auctions, as such performances cannot reasonably be evaluated automatically.

Like DPS, Member States are not required to implement support for eAuctions in their legal framework. The same initial questions therefore apply: are eAuctions legally supported, and is technical support provided for them via a common infrastructure?

Possibilities	**Legally supported**	**Not legally supported**
	Austria, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, France, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Malta, The Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, United Kingdom, Croatia, Iceland, Norway and Turkey	Belgium, Finland, Germany, Liechtenstein, Luxembourg and Sweden
	26 countries (including 22 Member States)	**6 countries (including 5 Member States)**
Practice	**eAuctions not supported via a known eProcurement site**	**eAuctions supported via a known eProcurement site**
	Belgium, Bulgaria, Croatia, Estonia, Greece, Finland, Germany, Iceland, Liechtenstein, Latvia, Lithuania, Luxembourg, Malta, The Netherlands, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and Turkey	Austria Cyprus, Czech Republic, Denmark, France, Hungary, Ireland, Italy, Norway, Poland and United Kingdom
	21 countries (including 17 Member States)	**11 countries (including 10 Member States)**

Usage	**No (significant) use reported**	**Infrequent use / trial use / regional use**	**Systematic/frequent use**
	Belgium, Bulgaria, Croatia, Estonia, Finland, Germany, Greece, Iceland, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and Turkey	Austria, Cyprus, Czech Republic and Hungary	Denmark, France, Ireland, Italy, Norway, Poland and United Kingdom
	21 countries (including 17 Member States)	**4 countries (including 4 Member States)**	**7 countries (including 6 Member States)**

Overview of the national status with respect to eAuctions

Thus, only six countries (including five Member States) have not yet implemented the relevant legal provisions, and of these, implementation efforts are known to be underway in Belgium, Finland, Luxembourg and Sweden. Legal support is thus comparable to that of DPS. However, contrary to DPS, eAuctions are also supported via specific infrastructure, and are taken up to a significant extent in seven countries (Denmark, France, Ireland, Italy, Norway, Poland and the UK).

Where data is made available, cost savings are reported as being significant, with figures of 10-20% being commonly quoted. In that respect, eAuctions seem to be achieving their goal of increasing

competition and cutting costs, which explains why they are relatively popular with contracting authorities and policy makers. However, no equivalent advantage seems to exist at the economic operator's side. Here, the use of eAuctions implies additional effort and shrinking profit margins, which reduces the appeal of public procurements. In the long term, this can also become a negative element for eAuctions in general: as participation drops, prices may begin to rise again. Finally, it is crucial to determine precisely in which markets eAuctions make sense to avoid the negative side effects noted above. eAuctions can only prove their worth in markets which have sufficient competition, and which are dynamic and straightforward enough to use an automated assessment mechanism without harming service/product quality.

3.2.4 eCertificates/eAttestations

The notion of eCertificates or eAttestations refers to documentary evidence in an electronic form which is provided by the economic operator as an addition to its own bid, and which demonstrates compliance with certain formal requirements. These documents are thus relevant for the economic operator to show its suitability to the contracting authority to perform a procurement. Traditionally submitted in a paper format, eProcurement requires a suitable electronic equivalent to be found.

From a technical perspective, this can present huge challenges: a document format must be used that is readable by any recipients, and for which the long term readability is also ensured. The structure of the content of the document itself may also be subject to specific requirements to ensure that documents originating from different economic operators are easily and fairly comparable. Depending on national preferences, there may be a requirement for the document to be electronically signed or otherwise authenticated, which may cause entirely new issues (e.g. eSignature interoperability questions as described elsewhere). In a cross border context, these problems can be particularly challenging to resolve, as local requirements, expectations and traditions with respect to eDocuments may differ substantially.

Based on the country reports collected and validated in the course of this study, it is clear that paper attestations still play a dominant role, with electronic versions only rarely being available. Summarising the trends:

- 9 countries do not signal any electronic documents (signed or unsigned) being commonly used for any requirement at all.
- Only 7 countries report the use of signed eAttestations for some requirements.
- Only a single country (Portugal) claims that electronic documents are commonly used to show compliance with all requirements.

The conclusion is clear: eAttestations (and certainly electronically signed eAttestations) are very rarely used in public procurements in practice, being limited to very few countries.

Broadly speaking, four main clusters of approaches to handling this problem could be distinguished, with some overlap existing between them:

- Countries which rely on declarations of compliance from the economic operator (10 out of 32 countries; 31%). Such declarations can either serve to postpone the submission of attestations until a winning bid has been chosen, or can replace it entirely. In some cases, the submission of an offer as such is considered an implicit declaration of compliance.
- Several countries have also implemented a limited trusted third party (TTP) or prequalification system (8 out of 32 countries; 25%), wherein economic operators may register with a TTP prior to participating in a public procurement, providing certain commonly required evidentiary documents to the TTP. In this case, the economic operator submits a single confirmation of compliance issued by the TTP to the contracting authority, or simply authorizes the contracting authority to obtain any required information from the TTP.
- Systems where the contracting authority has to obtain the required information itself, if the source is another public sector controlled entity. This approach, consisting of a direct and protected transfer of information from one administration to the next can be found on a limited scale in 5 out of 32 countries (16%).
- Finally, 4 out of 32 countries (12,5%) have reported that administrations can simply issue electronic certificates or attestations which have been signed with a PKI signature. However, in all countries which reported this approach, the systems were largely in a pilot stage, and not yet commonly used in public procurements.

Since the latter category (electronic attestations issued directly by public administrations) did not yet occur in eProcurements in practice to an appreciable level, it is important to stress that at this time there are thus only three types of electronic attestations to be considered:

- Self-declaration forms, signed by the economic operator using the signature solution permitted by the eProcurement system (if signatures are required).
- Direct information exchange between administrations, i.e. the contracting authority will no longer require the economic operator to provide certain information, because it can access them directly from an authentic source.
- Declarations of compliance from TTPs in a prequalification system.

Examining these approaches, one can only conclude that the main approach used by the surveyed countries to handle the problems related to attestations is to install electronic procedures that eliminate or reduce the need for attestations, either in a paper or electronic form. The use of new separate official eAttestations in public procurements on the other hand is virtually non-existent.

From a cross border interoperability perspective, all of the three models described above – self declaration forms, direct information exchange and prequalification systems – are difficult to extend to foreign users:

- Declaration forms often require the economic operator to have access to a supported signature type, and require him to fully comprehend the declaration which he is signing.
- Direct information exchange presently only works on a national level. Information must be provided directly from local databases, and opening such databases to foreign contracting authorities is both legally and politically very sensitive, and presents substantial security and liability risk.

- Finally, prequalification systems are also frequently less accessible to foreign tenderers, because they offer the greatest benefit to tenderers who can easily register with the TTP and who frequently submit offers where the statement from the TTP is used. Both of these factors favour local tenderers over foreign tenderers.

Thus, reliance on these approaches shows substantial benefits, but at the current stage mostly to local tenderers, who see their administrative burden reduced significantly. For foreign tenderers however, it is much more difficult or in some cases even impossible to use these systems, let alone to derive any proportionate benefit from them. Indeed, in practice, systems that rely on electronic attestations at this time are rarely accessible to foreign tenderers, with the sole exception being systems which rely on unilateral declarations in instances where the supported signature method is available to foreign bidders.

3.2.5 eSignatures/eID

One of the crucial challenges in using electronic means in public procurements is ensuring the authenticity and integrity of the exchanged information. The question of authenticity is linked primarily to the source of the information: to what extent is it certain that specific information originates from a specific identified entity? The question of integrity on the other hand relates to the assurance that the information has not been changed in any way during the communications process, i.e. the information received is the same as the information sent.

The notions of electronic identity (eID) and electronic signatures (eSignatures) are thus instrumental to eProcurement. It should be noted however that the concept of electronic identity has not been formally defined or regulated at the European level. For the purposes of this analysis, eID can be generally understood as a subset of attributes in electronic form allowing the unique identification of a specific entity. In contrast, eSignatures are defined and regulated at the European level via the eSignatures Directive[37], which describes them as “data in electronic form which are attached to or logically associated with other electronic data and which serve as a method of authentication”. Thus, eSignatures have the benefit of a clearer European policy and regulatory framework.

It is important to recognise that several tiers of electronic signatures exist. The basic concept of an electronic signature (as defined above) is very broad, and can apply to any type of data used as a method of authentication. The second tier of signatures defined in the eSignatures Directive, the so-called advanced electronic signature, are in practice implemented using Public Key Infrastructure (PKI) technology, in which a signature be created through a cryptographic function, based on a signature certificate. Finally, as a third tier of electronic signatures, article 5 §1 of the eSignatures Directive introduces the notion of an advanced electronic signature based on a qualified certificate and created using a secure signature creation device (frequently designated as a ‘qualified signature’). Essentially, the qualified signature can be thought of as an advanced electronic signature meeting additional quality requirements to enhance its reliability. Through the eSignatures Directive, a qualified signature is granted legal effect identical to a handwritten signature.

In practice, with respect to eProcurement the emphasis lies strongly on electronic signatures, partially due to the fact that there is a European (and thus also national) legal framework to build on, and

[37] Directive 1999/93/EC of the European Parliament and of the Council of 13 December 1999 on a Community framework for electronic signatures.

partially due to the fact that advanced electronic signatures are defined as requiring (among other points) the ability to be uniquely linked to the signatory and to identify that signatory. Thus, the use of advanced electronic signatures (including qualified signatures) implies the possibility of identification.

To examine the possibilities and practices of electronic signatures in the Member States, both the legal framework and the technical infrastructure must be considered. From a strictly legal perspective, the following classification can be provided:

eSignature is **always required**				Contracting authority **may require** the use of an eSignature				**No signature requirement**
eSignature	Advanced eSignature	*Advanced based on qualified certificate*	Qualified signature	eSignature	Advanced eSignature	*Advanced based on qualified certificate*	Qualified signature	
Germany *Latvia* *L'stein* *Lithuania* *Luxemb.*	*Croatia* *France* *Slovakia*	*Bulgaria* *Czech Republic* *Poland*	*Austria* *Belgium* *Hungary* *Italy* *Portugal* *Slovenia* *Spain* *Greece*	*Denmark* *Estonia* *Ireland* *United Kingdom*	*Iceland* *Malta* *The Netherl.* *Norway* *Romania* *Sweden*		*Cyprus*	*Finland*
5 countries (including 4 MS)	**3 countries (including 2 MS)**	**3 countries (including 3 MS)**	**8 countries (including 8 MS)**	**4 countries (including 4 MS)**	**6 countries (including 4 MS)**	**0 countries (including 0 MS)**	**1 country (including 1 MS)**	**1 country (including 1 MS)**

Overview of the national status with respect to eSignatures

Thus, of the 31 countries for which the eSignatures status is known[38], 12 do not explicitly require the use of electronic signatures (the categories "may require eSignature" and "no signature requirement" in the table above). These are the countries which have thus left the largest amount of flexibility in their legal regimes, and it is therefore not surprising that these include all Nordic countries (both Member States and non-Member States, i.e. Denmark, Iceland, Finland, Norway and Sweden) and the common law countries UK and Ireland. The vast majority of these (10 of the 12) fall into two categories: those that allow contracting authorities to require the use of eSignatures in general (4 countries, with the typical phrasing being that electronic signatures in accordance with the eSignatures Directive or the national transposition may be required), and those that allow contracting authorities to require the use of an advanced signature (6 countries). In both cases, the margin of appreciation left to contracting authorities is almost absolute: given that no signature requirement is ever mandated, even simple username/password mechanisms can be used for eProcurement systems; and since qualified signatures are also advanced signatures (which meet the additional criteria of being based on a qualified certificate and created using a secure signature creation device), it can be reasonably argued that even these signature types can be mandated in all of these countries. Thus, contracting authorities are virtually unrestricted by the legal framework with respect to electronic signatures.

In 18 other countries, the use of electronic signatures is required in some form. Several interesting patterns and observations can be made:

- The largest group (8 countries, i.e. about a quarter of all countries for which information is available) has made the use of qualified signatures mandatory. All of these are Member

[38] The status of electronic signature requirements in Turkey is unknown.

States, and 6 out of the 8 are a part of the EU-15. It is also interesting that 5 of these 6 countries have deployed eID cards supporting the use of qualified signatures (Austria, Belgium, Italy, Portugal and Spain)[39]; thus, there is a clear correlation between the demand for higher legal certainty and the maturity of the available local infrastructure. It should also be noted however that other countries with an eID card have retained their tradition of legal flexibility, including notably Estonia and Finland. Thus, there is no complete overlap between eID countries and countries where qualified signatures are a requirement.

- The second largest group (5 countries, including 4 Member States), require the use of an electronic signature, but not necessarily an advanced or qualified signature. Given that the electronic signature is an extremely broadly defined concept, in practical terms this requirement is relatively easy to meet: legally, the only requirement is that the offer is signed using "data in electronic form which are attached to or logically associated with other electronic data and which serve as a method of authentication" (the definition of an electronic signature under the eSignatures Directive). Thus, any mechanism that uses separate electronic data as a way of authenticating a bid by being attached to or logically associated with it would meet this requirement.
- Three countries require the use of an advanced electronic signature, including two Member States. France falls within this group; however, an extensive reference framework for security has been defined in France, and only signature certificates meeting the requirements of this reference framework may be used in eProcurements. Thus, the signatures are subject to much higher requirements than an advanced signature as such.
- Finally, three countries require the use of advanced signatures based on qualified certificates. It should be noted however that Bulgarian law requires that a so called 'universal signature' is used. This is a type of advanced electronic signature which is supported by a qualified certificate issued by a registered Certification Service Provider (i.e. registered in Bulgaria).

It is clear from the overview above that the clean-cut distinction between the different signature requirements is not always easy to apply, due to the existence of additional requirements in a number of countries above, as was seen in Bulgaria, France, and Italy, and through the reliance on concepts that may not have a clean equivalent in other countries, such as the notion of an electronic mark in the Czech Republic, the requirement to use certified mail in Italy, and to apply timestamps in Slovakia.

With respect to technical interoperability, 15 eProcurement applications using eSignatures were recently examined in the IDABC Preliminary Study on Mutual Recognition of eSignatures[40]. Summarising the general trends:

- For a majority of the applications (10 out of 15), the application was only found to be accessible when using local credentials. This was the case in the Czech Republic, France, Germany, Italy, Lithuania, Poland, Portugal, Romania, Spain and Sweden.
- Two countries had a small list of foreign solutions which were also supported. This was the case in Austria, where the use of a signature validation component allowed the eSubmission application to also accept signatures created using an eID card from Belgium, Italy, and Slovenia; and in Norway, where the eSubmission platform could be extended to support electronic signatures supported by the private BBS Validation Authority.
- Finally, three countries had no restriction in place: Ireland, Denmark and Slovakia. In the Irish case, the application used a simple online registration system that did not use any PKI

[39] Source: IDABC 2009 Study on eID interoperability for PEGS; see http://ec.europa.eu/idabc/en/document/6484

[40] Update of the IDABC Preliminary Study on mutual recognition of eSignatures for eGovernment applications; see http://ec.europa.eu/idabc/en/document/6485

components and therefore had no interoperability issues to be dealt with. In the Danish and Slovakian case, registration resulted in the recipient receiving an advanced signature certificate via e-mail that complied with national requirements, which he could then use to sign the offer. These are all examples of a case where local credentials are still needed, and where there is thus strictly no interoperability, but where the need for interoperability has been avoided by introducing a sufficiently flexible user registration system.

Summarising the situation with respect to eSignatures:

- Out of the 27 Member States, 13 have a legal requirement to use advanced electronic signatures, 8 of which require qualified signatures, i.e. slightly less than one third of Member States. None the less, no other regulatory strategy with respect to electronic signatures is more popular.
- In practice (looking at eProcurement applications), eSignature interoperability is still very limited. While some progress has been made in the last few years, most applications still only support local credentials, with exceptions being identified in Austria and Norway.

In practical terms, eSignatures remain a significant interoperability barrier, and a real challenge to cross border public procurement.

3.2.6 eCatalogues

eCatalogues are electronic documents established by suppliers which describe products and prices in a structured manner. From a technical perspective, they can take virtually any form, ranging from general text documents (e.g. in PDF or MS Word) or spreadsheets that can be consulted by any human reader, to highly standardised XML formats which can also be automatically processed in a more systematic and useful manner in certain eProcurement systems.

Looking at the support for eCatalogues at the national level and the extent to which they are used in practice, the following summary can be provided:

Practice	eCatalogues not supported via a known eProcurement site	eCatalogues supported via a known eProcurement site
	Bulgaria, Croatia, Estonia, Greece, Iceland, Liechtenstein, Latvia, Luxembourg, Malta, The Netherlands, Slovakia, Slovenia and Turkey	Austria, Belgium, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Hungary, Ireland, Lithuania, Italy, Poland, Portugal, Romania, Spain, Sweden, United Kingdom and Norway
	13 countries (including 9 Member States)	**19 countries (including 18 Member States)**

Usage	No (significant) use reported	Infrequent use / trial use / regional use	Systematic/frequent use
	Bulgaria, Croatia, Estonia, Greece, Iceland, Latvia Liechtenstein, Luxembourg, Malta, The Netherlands, Slovakia, Slovenia and Turkey	Belgium, Czech Republic, Finland, France, Hungary, Norway, Poland and Romania	Austria, Cyprus, Denmark, Germany, Ireland, Italy, Lithuania, Portugal, Spain, Sweden and United Kingdom
	13 countries (including 9 Member States)	**8 countries (including 7 Member States)**	**11 countries (including 10 Member States)**

Overview of the national status with respect to eCatalogues

With respect to volume, Denmark, Germany, Italy and United Kingdom appear to be European leaders; however, other countries are investing more and more in this area. Most applications of eCatalogues still relate to the post-award phase, and notably involve the use of eCatalogues in the contexts of framework agreements, specifically framework agreements concluded with centralised purchasing bodies. Use in pre-award phases is substantially rarer, although several interesting use cases are emerging in this area as well (notably in Cyprus and Denmark).

It was observed that there were only a few cases of fully automated tools to support eCatalogue management processes. Management of eCatalogue contents and formats is generally done offline and is still a largely manual process. More advanced approaches are however beginning to emerge (as seen e.g. in Cyprus), which will hopefully lead to further professionalization.

Finally, with respect to standardisation efforts, there is no widespread use of standards like UBL (Universal Business Language from OASIS) or UN/CEFACT XML Schemes. Some countries have partly implemented these standards (mainly UBL and variations on this), but there is as of yet very little interoperability in this domain. As a result, investments in this area by economic operators do not yet provide an optimal return (as catalogues need to be recreated for each new country, or even for each new system within a country), which is a strong deterrent for their uptake. In addition, in the absence of semantic standardisation, eCatalogues will be harder to use in practice due to simple language barriers (i.e. the content of the catalogues as such may be misinterpreted). Again, this is a factor impeding cross border use.

4 Regulatory and policy choices at the national level

4.1 Implementation of the Directives

As a first aspect of the national state of play, below we will examine the legal and policy landscape in the Member States, EEA countries and the candidate countries Turkey and Croatia. This will be done through the examination of the actual transposition status, transposition strategies and general policy choices.

4.1.1 Introduction – The 2004 status and vision of the Action Plan

Firstly, the Action Plan was intended to support the Member States in implementing the newly adopted Public Procurement Directives in a correct and timely manner. This was to be achieved through three specific measures:

Measure	Targeted party	Nature of the measure
The Commission issues an interpretative document on the new rules on eProcurement	Commission	Support in implementation
The Commission makes online training demonstrators available	Commission	Support in implementation
The Commission provides appropriate assistance to Member States in transposing the new legal provisions	Commission	Support in implementation

Overview of the measures in the Action Plan to support implementation

Through these measures, excessive slippages compared to the Directives' transposition deadline (31 January 2006) were to be avoided. This was seen as a key enabling factor for eProcurement: while some Member States already had eProcurement regulations in place, this was not the case for all of them.

Specifically, the availability of specific rules covering electronic public procurement was examined in the 2004 Impact Assessment, along with Member States' expectations and concerns with respect to their transposition efforts. As noted above, 17 out of 25 Member States already had provisions in their national frameworks with respect to the use of electronic means in public procurements in 2004. In 7 Member States, specific procedures (including eAuctions and DPS) had already been regulated.

However, while this might appear generally positive (with eProcurement rules thus being signalled in over two third of Member States already), the 2004 Assessment also noted substantial differences in the scope and level of detail of these rules: while almost half of all Member States had already put in place rules covering electronic communication, this was much rarer with respect to electronic storage of data (e.g. storage of received bids by the contracting authority). The absence of appropriate rules or

excessive differences between these rules could be a significant barrier to cross border eProcurement. Therefore, correct and timely implementation was seen as a vital enabler, and Member States were called upon by the Action Plan to "deploy all efforts to comply with the Directives' deadline".

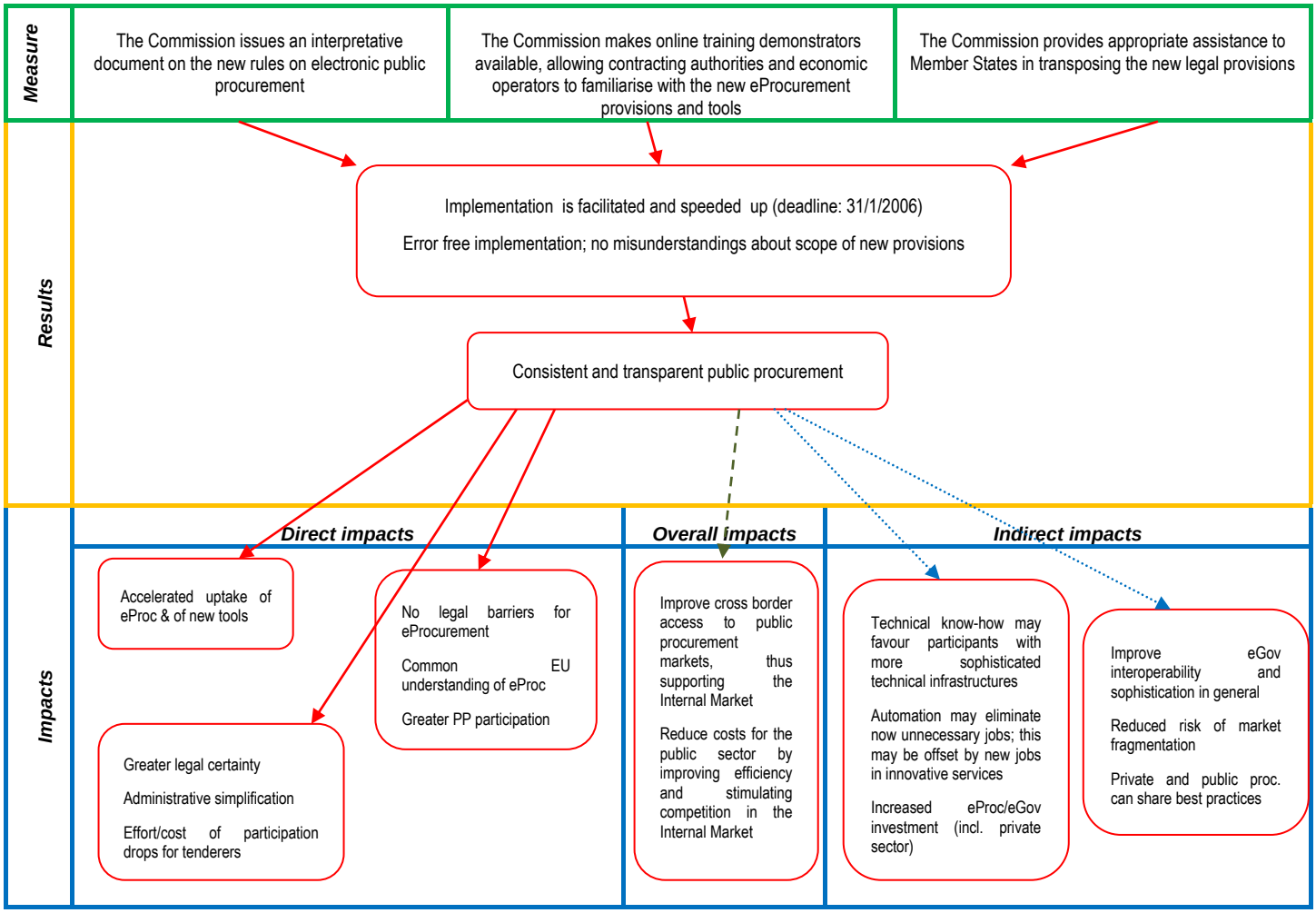
With respect to that point, Member States were optimistic in 2004 about their ability to ensure the timely implementation of the Directives:

- Only one (Denmark) anticipated a transposition in 2004. As we shall see below, this is not surprising, as Denmark has opted for a transposition *telle quelle* via Government orders; i.e. the Directives are printed as an annex to the respective Government orders and constitute the actual legislation in the field of public procurement.
- 14 Member States expected the Directives to be implemented in 2005.
- 8 Member States expected implementation in 2006.
- 2 Member States had not yet decided when the Directives would be implemented.

As for the question of correct implementation, the main concern flagged at this time was the question of adding further details to the provisions of the Directives (so-called gold plating) to facilitate their application in practice. While no Member States had specific plans for gold plating, guidance from the Commission was seen as useful to minimise the need for gold plating (which could result in interoperability barriers).

The Action Plan aimed to achieve the goal of timely and correct implementation through the three measures above, which mainly aimed to ensure that all Member States had a comprehensive and correct understanding of what the Directives required, and what would therefore be necessary at the national level.

The envisaged actions and their impact were illustrated as follows in the intervention logic above:



In the sections below, we will examine if and how the Directives have been transposed in each country, and how this was done (i.e. through new laws or via the amendment of existing laws). Given the explicit goals of the measures, the main indicators of success should be the timeliness of the transposition, and the existence of any known errors in transposition, as based on infringement proceedings or other known legal actions against a specific transposition.

While the transposition deadline of the Directives was set at 31 January 2006, previous studies have already shown that several countries have missed this deadline[41]. However, the existence of any delays as such should not be seen as an overly negative point. The implementation of the European

[41] See e.g. the 2007 DG Markt studies on eCatalogues in electronic public procurement and on Electronic transmission of public procurement notices for publication, or the 2008 Preliminary study on the electronic provision of certificates and attestations usually required in public procurement procedures ; all published on http://ec.europa.eu/internal_market/publicprocurement/eProcurement_en.htm

public procurement framework that was in place prior to 2004[42] also suffered significant delays in their implementation, with as much as seven years transpiring between the adoption of the Public Services Directive in 1992 and its implementation in the last Member State[43]. Given that the 2004 Public Procurement Directives offered a transposition period of less than 2 years (22 months to be exact), some flexibility seems reasonable when assessing compliance with the deadline.

Below, we will examine whether transposition has currently been completed for the Member States and EEA countries.

4.1.2 Current status and evolution - matching with the Action Plan vision

4.1.2.1 Actions undertaken

Each of the three measures prescribed by the Action Plan has been formally implemented in a more or less timely manner:

- As noted in the Action Plan, a specific measure was foreseen requiring the Commission to issue an interpretative document on the legal requirements for eProcurement in the first quarter of 2005. The main intended impact of this measure was to facilitate the correct and timely implementation of the Directive in relation to eProcurement.

  An explanatory document was indeed adopted with a very minor delay compared to the originally envisaged timeframe, in the form of a Commission Staff Working Document (SEC 959 of 8.7.2005[44]). Thus, the measure has been implemented in practice.

- Secondly, the Action Plan called on the Commission to develop and publish training demonstrators to familiarize Member States with the new eProcurement provisions and tools in the first quarter of 2005. The measure was completed in 2005, and applications are available on the IDABC website[45].

  The demonstrators are not fully developed applications, but were rather developed to stimulate familiarity with electronic public procurement procedures. The demonstrators support the following electronic procurement phases: eNotification, eAccess, eSubmission and eAwarding including eAuctions. Code is distributed under the EUPL open source license.

- Finally, the third measure called upon the Commission to provide assistance to Member States in transposing the new legal provisions. The measure was foreseen to run throughout 2005 in the Action Plan, and has in practice continued ever since. In addition to the aforementioned explanatory document, the eProcurement Working Group (ePWG) of the Advisory Committee for Public Contracts meets three to four times a year (and has done so since 2003). This Group is used inter alia to present study outcomes, discuss interpretation issues and share good practices.

[42] Specifically the Public Supplies Directive 93/36/EC as amended by Directive 97/52/EC; the Public Works Directive 93/37/EC as amended by Directive 97/52/EC; the Public Services Directive 92/50/EC as amended by Directive 97/52/EC; and the Public Utilities Directive 93/38/EC as amended by Directive 98/4/EC.

[43] See the 2006 Evaluation of [the old] Public Procurement Directives, http://ec.europa.eu/internal_market/publicprocurement/docs/final_report_en.pdf, point 1.9

[44] See http://ec.europa.eu/internal_market/publicprocurement/docs/eprocurement/sec2005-959_en.pdf

[45] See http://ec.europa.eu/idabc/en/document/3488/5874

Thus, at the European level the required measures were indeed implemented. Their impact – notably the timely and correct transposition of the Directives by the Member States – will be examined below.

4.1.2.2 National state of play

A comprehensive table indicating the national transposition status is provided in Annex F to this report. Of the 27 Member States, 25 were bound to the transposition date of 31 January 2006 stipulated in the Directives themselves, with Bulgaria and Romania only becoming Member States on 1 January 2007. Under the terms of Directive 2006/97/EC[46], and specifically article 2 of this Directive, Bulgaria and Romania were to bring their national laws in line with the Public Procurement Directives by the date of their accession, i.e. 1 January 2007.

For the three EEA countries (Iceland, Norway and Liechtenstein) transposition became required through the EEA Joint Committee Decision 68/2006[47] as published on 7 September 2006 in an Annex to the Official Journal of the European Union No. 44/2006. As a result of this Decision, Liechtenstein was only required to bring into force the laws, regulations and administrative provisions necessary to comply with the Directives within 18 months after the entry into force of the Decision of the Joint Committee (i.e. by 2 December 2007); no special provisions were foreseen for Iceland and Norway[48].

When examining all 32 countries, the transposition status is as follows:

Transposed within the applicable deadline		Transposed after the deadline	
Austria Bulgaria Denmark Hungary Latvia Lithuania Malta The Netherlands Romania Slovakia United Kingdom		Belgium Cyprus Czech Republic Estonia Finland France Germany Greece Ireland Italy Luxembourg Poland Portugal Slovenia Spain Sweden	Croatia Iceland Liechtenstein Norway Turkey
Total: 11 MS	**Total: 0 non-MS**	**Total: 16 MS**	**Total: 5 non-MS**

Overview of the transpositions status - timeliness

4.1.2.3 Conclusions

With respect to transposition status and timeliness

11 out of 27 Member States (41%) have transposed the Directives on time, including the two most recently joined Member States Bulgaria and Romania, whose transposition acts entered into force after the Directives' general deadline of 31 January 2006 but within their specific deadline of 1 January 2007, as explained above.

[46] Council Directive 2006/97/EC of 20 November 2006 adapting certain Directives in the field of free movement of goods, by reason of the accession of Bulgaria and Romania; see http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:363:0107:0128:EN:PDF

[47] See http://www.efta.int/content/legal-texts/eea/JCdecisions/2006-english/068-2006.doc/view

[48] See Annex XVI to the EEA Agreement, http://www.efta.int/content/legal-texts/eea/annexes/annex16.pdf

When comparing the compliance of the EU-15 with the 10 Member States who joined the EU on 1 May 2004, the list of 11 compliant Member States contains 4 of the EU-15 states (37%), versus 7 of the 10 more recent Member States (63%). Thus, newer Member States seem to have had less difficulty implementing the Directives than the EU-15. A possible explanation lies in the fact that the newer Member States had recently built up significant expertise in implementing the *acquis communautaire,* which could be built on to overhaul regulations in other domains as well. Alternatively, the regulatory framework of the EU-15 may have been more complicated to redraft, having a common basis in the earlier Public Procurement Directives[49]. It is not unthinkable that these Directives resulted in procurement practices and rules that were more complex to reform.

When looking at the five non-Member States being studied, all three EEA countries adapted their regulatory framework after 31 January 2006, and Liechtenstein also exceeded its December 2007 deadline.

Finally, with respect to the two candidate countries Croatia and Turkey, Croatia has implemented the Directives in late 2006, and Turkey in 2008 (although in the latter case, it was noted that further adaptations would still be needed).

In the sections below, we will try to identify the main transposition strategies that have been followed in each of these countries, which will allow us to determine which specific approaches were more conducive to a timely implementation. As a provisional conclusion, while most countries have missed their applicable deadlines, it should still be acknowledged that transposition took notably shorter than the seven years flagged in the 2004 Assessment with respect to the preceding European framework. Thus, while transposition was by and large not timely in the strictest sense, the delays were generally limited and at any rate significantly smaller than with similar efforts in the past. While the Action Plan's goals of ensuring the timely transposition of the regulatory framework were thus not entirely successful, the result is still largely positive.

With respect to transposition approach

All of the transpositions have resulted in the updating of existing Public Procurement Acts, or in the creation of entirely new ones. None of the examined countries have implemented the provisions in the Public Procurement Directives related to eProcurement via generic eGovernment regulations, or via separate eProcurement acts which stand distinct from the general public procurement rules.

When examining the distribution between entirely new Acts versus updates of existing acts and mapping this against the timeliness of the transposition (i.e. when determining if this strategy affects whether the transposition meets the deadlines of the Directives, the following table represents the outcome:

Transposed within the deadline		Transposed after the deadline	
Entirely new Public	Update of existing Public	Entirely new Public	Update of existing Public

[49] See http://ec.europa.eu/internal_market/publicprocurement/legislation_en.htm#current

Procurement Act	Procurement Act	Procurement Act	Procurement Act
Austria Denmark[50] Latvia The Netherlands[51] Romania Slovakia United Kingdom	Bulgaria Hungary Lithuania Malta	Cyprus Czech Republic Estonia Finland France Greece Ireland Italy Luxembourg Portugal Slovenia Spain Sweden Croatia Iceland	Belgium[52] Germany Poland Liechtenstein Norway Turkey
Total: 7 countries (including 7 MS)	**Total: 4 countries (including 4 MS)**	**Total: 15 countries (including 13 MS)**	**Total: 6 countries (including 3 MS)**

Overview of the national transposition status – approach and timeliness

The table shows that:

- Of the 11 countries which transposed the Directives within the deadline, 7 countries (64%) opted for an entirely new act (abrogating the old one in the process, except for ongoing procurements), while 4 countries (36%) chose to update existing acts.
- Of the 21 countries which did not meet the transposition deadlines, 15 countries (71%) opted for an entirely new act (abrogating the old one in the process, except for ongoing procurements), while 6 countries (29%) chose to update existing acts.

Globally, 22 out of 32 countries (69%) thus opted for entirely new acts, whereas 10 (31%) chose to update existing acts.

The comparison between the two groups above (respecting the deadline versus failing to meet the deadline) shows no statistically significant correlation between the chosen strategy and the country's likelihood to meet the imposed deadline. Thus, creating an entirely new framework, rather than fitting the provisions of the Directives into an existing framework, does not appear to make it significantly more likely to respect the deadlines of the Directives.

[50] Transposition *telle quelle* by Government orders number and 936

[51] The Act as such has not yet been updated in The Netherlands, but the main substantive rules are included in specific decrees known as BASS and BAO, which were newly established in 2005.

[52] Two new acts have been adopted in 2006, but have largely not yet entered into force. Meanwhile, the Act of 1993 remains substantially applicable, with the binding provisions of the Directives having been implemented through successive updates.

4.2 Policy making – National action plans and follow-up

4.2.1 Introduction

Hard law – the legal text in force in each country – is not the only normative enabler to eProcurement. To ensure that eProcurement gets taken up in practice, specific policy measures are also needed. Members States need to ensure that contracting authorities and economic operators alike are aware of the available opportunities, and need to adopt policies to implement eProcurement applications and services, to stimulate their use, and to evaluate the outcome. The Action Plan therefore foresaw specific measures aimed at establishing national action plans and awareness campaigns, and ensuring that statistical data was available to permit the evaluation of the effectiveness of national policies and approaches. These will be examined in the sections below.

4.2.2 The 2004 status and vision of the Action Plan

4.2.2.1 2004 status

The 2004 Impact Assessment examined which Member States already had specific eProcurement policies and action plans in place at the time. Based on interview with policy makers in 2004, the Impact Assessment indicated that "the majority of the Member States have developed a strategy for the introduction of operational electronic public procurement (21 countries[53]), and that a majority of the Member States have set an overall objective for the introduction of operational electronic public procurement (23 countries[54]). The timeframe for the achievement of the objectives defined by the member states mostly covers the period up until 2005-2006, while one country (Latvia) has formulated an objective for the coming four years until 2008 and another country (France) goes as far as 2010". Thus, a vast majority of Member States already had specific strategies in place to implement eProcurement.

Looking at the content of these action plans, clear quantitative objectives were much rarer, being present in only 10 countries. Specifically, 8 Member States[55] had adopted specific objectives with respect to uptake of eProcurement (i.e. focusing on achieving a certain amount of actual usage, rather than theoretical availability), and 4 Member States[56] had phrased their ambitions in terms of cost savings (i.e. focusing on specific percentages or absolute amounts, rather than indicating that costs should be reduced in general terms).

[53] Portugal, Slovenia, Lithuania, Sweden, Latvia, Germany, Czech Republic, Italy, Ireland, Luxembourg, Finland, Belgium, United Kingdom, Hungary, Malta, Cyprus, Poland, France, Greece, Denmark and Spain

[54] Portugal, Slovenia, Lithuania, Sweden, Latvia, Germany, Czech Republic, Italy, Ireland, Luxembourg, Finland, Belgium, Austria, Slovakia, United Kingdom, Hungary, Malta, Cyprus, Poland, France, Greece, Denmark and Spain

[55] Specifically Belgium, France, Greece, Ireland, Italy, Latvia, Luxembourg and Spain.

[56] Specifically Ireland, Latvia, Portugal and the UK.

The clearest policy ambitions were found in the common law countries, Ireland and the UK:

- Ireland proposed a clear set of key quantitative targets to be achieved by the end of 2007:
  - Unit cost reductions of 2,5% of total expenditure on supplies and services and works
  - Transaction costs reduction of 5% for supply services and works
  - Unit cost reductions of 0,5% of total expenditure on capital works
  - Transaction cost related reductions of 0,25% in overall expenditure on capital works
  - 90% of tender competitions (above EU thresholds) carried out electronically
  - 80% of payments carried out electronically
  - 10% of all expenditures on supply and services supported by electronic catalogue and ordering facilities
  - Approximated financial benefits by 2007 were estimated at EUR 414 million
- Similarly, the UK strategy noted that "web-enabled tools and techniques shall deliver £ 250 million pounds of value for money improvement to government's commercial relationships during April 2003 – March 2006; and 50% of dealings should be capable of electronic delivery by 2005 and 100% by 2008".

While less detailed, the most ambitious targets were noted with respect to Luxembourg and Spain, both of which noted that all public procurement procedures should be done fully electronically by 2005. Given that it must have been clear in 2004 (when the interviews were conducted) that this objective was not realistic in a one year term, it is likely that this information is not reliable.

Thus, while most countries had an eProcurement strategy in place in 2004, most of these were relatively light on details and targets. In the sections below, we will assess which impact the Action Plan has had on this situation, and specifically whether it has lead to more professional and goal oriented policy making.

4.2.2.2 Vision of the Action Plan

To encourage effective policy making, the Action Plan foresaw four specific measures, aiming to stimulate the adoption of action plans at the national level, to encourage systematic data collection, and to support SME participation.

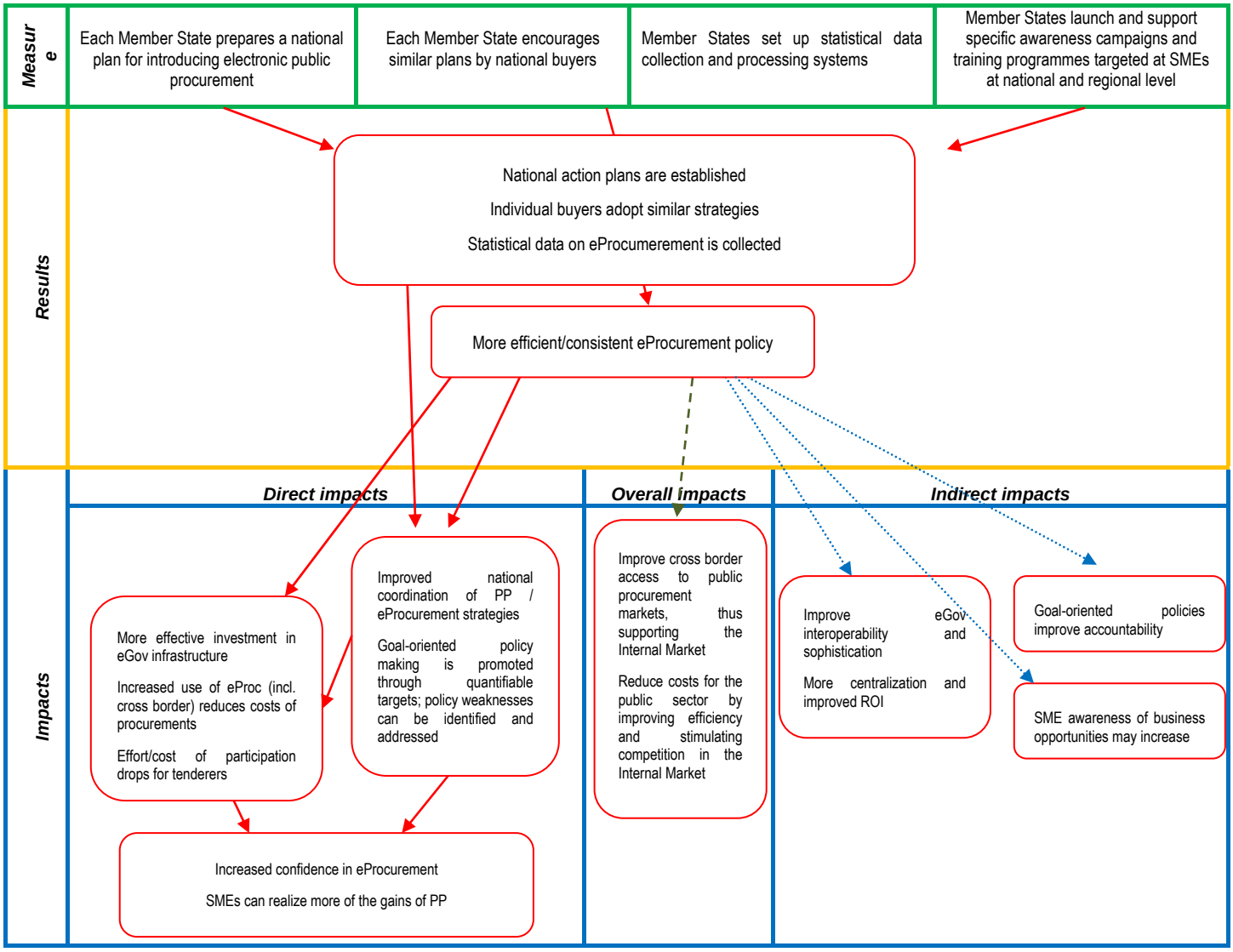
Measure	Targeted party	Nature of the measure
Each Member State prepares a national plan for introducing electronic public procurement	Member States	National policy to support adoption
Each Member State encourages similar plans by national buyers	Member States	National policy to support adoption
Member States set up statistical data collection and processing systems	Member States	Improving knowledge
Member States launch and support specific awareness campaigns and	Member States	National policy to support adoption

training programmes targeted at SMEs at national and regional level

Overview of the measures within the Action Plan to support national procurement policies

The Action Plan framed these measures as actions that should support the planning and monitoring of eProcurement implementation efforts. National action plans were seen as a useful tool to achieve optimal benefits, both with respect to Member States and with respect to major national buyers, each of whom should adopt their own action plans. Improved statistical data collection was also required, as the Action Plan already noted the lack of comprehensive and usable data on eProcurement practices in 2004. To facilitate informed policy making, Member States were thus asked to professionalise their data collection practices. Finally, the Action Plan called on Member States to direct specific efforts towards involving SMEs further in public procurement, both as a way of improving competition in public procurements and as a way of ensuring that the benefits of eProcurement investments would not accrue exclusively to the largest European enterprises.

The envisaged actions and their impact were illustrated as follows in the intervention logic above:



The most direct indicator of the measures' impact is of course the existence of national action plans in the Member States, as well as the availability of policies stimulating the participation of SMEs and systematic eProcurement data collection mechanisms. The ultimate measure of success is the extent to which these action plans and policies have resulted in effective development and/or uptake of eProcurement in the Member States, including specifically by SMEs. However, it should be acknowledged that this latter indicator could have other causes than the presence of action plans or policies, and that any assessment of that point is therefore more complicated.

4.2.3 Current status and evolution - matching with the Action Plan vision

4.2.3.1 Actions undertaken – status at the national level

Each of the four measures was directed at the Member States; therefore, to assess progress, we should focus on the national state of play.

Action plans adopted by the Member States

As a first step, we can see to what extent Member States have adopted national Action Plans to stimulate the uptake of eProcurement, based on the national profiles collected and validated in the course of this evaluation.

Four categories of approaches on this point can be distinguished:

- No eProcurement action plan was identified, or the country has adopted an eGovernment/eProcurement action plan or strategy which contains only summary or high level ambitions or statements with respect to eProcurement;
- An eProcurement action plan or strategy exists which details the planned phases of implementation;
- An eProcurement action plan or strategy exists which contains specific quantitative objectives with regard to uptake over a specific period of time (including by mandating use of certain eProcurement tools);
- An eProcurement action plan or strategy exists which contains specific quantitative objectives with regard to cost savings over a specific period of time.

Obviously, the three latter categories can overlap (i.e. a country can have an action plan which details phases of implementation, uptake goals and targeted cost savings).

The table below provides an overview of the identified Action Plans:

No action plan / high level only	Action plan with phases of implementation	Action plan with uptake goals	Action plan with cost savings goals
Bulgaria Denmark Estonia Finland Greece Hungary Luxembourg Malta Poland Slovakia Slovenia UK Iceland Liechtenstein	Belgium Cyprus France Germany Latvia Lithuania The Netherlands Portugal Spain Sweden Croatia Turkey	Austria Cyprus France Germany Ireland Italy Latvia Romania Turkey	Czech Republic Ireland Italy Latvia Portugal Norway Turkey
14 countries (including 12 Member States)	**12 countries (including 10 Member States)**	**9 countries (including 8 Member States)**	**7 countries (including 5 Member States)**

Overview of the existence and types of Action Plans

The Action Plan specifically called for the adoption of "a national plan for introducing electronic public procurement setting measurable performance targets", which implies that the measure was only met in countries which have adopted an action plan that details phases of implementation, uptake goals and/or targeted cost savings. Thus, it seems that 14 countries (in the left column above) do not meet this criterion. However, this analysis should be nuanced further.

As a first point, it should be noted that several countries were identified where a very clear and coherent eProcurement deployment strategy existed (e.g. Denmark, Estonia and Malta), but without formalisation into a formal action plan. Similarly, countries such as Slovakia and the UK have established well developed knowledge/awareness dissemination policies, while there does not appear to be an action plan as such. As these examples show, there is no certain link between the absence of a formal action plan and the maturity of the eProcurement infrastructure. Of the 14 countries without an action plan, countries such as Denmark, Finland and the UK can certainly be considered as having more advanced eProcurement infrastructures than most countries (as will be commented further below), despite the lack of an action plan. In contrast, this same category also harbours countries such as Bulgaria and Greece, where maturity has not yet advanced to the same point.

A second nuance is the fact that it is sometimes hard to judge whether a specific policy should be considered an action plan. Countries such as Belgium, the Netherlands and Spain each have clear plans for the development of their infrastructure, which are formalised through specific websites or presentations, but it is not clear whether these have any formal status.

In addition, several countries have adopted Action Plans designed to guide their activities over a specific period. In some cases (e.g. Portugal, Romania), the deadlines of the most recent known action plan have expired, and it is not clear whether a new plan has been adopted to take its place. In these cases, the countries have been categorised according to their most recent know action plans.

Globally, it seems that there is no strong correlation between the existence of national action plans and the progress made in developing eProcurement infrastructure or uptake. All possible combinations are found in the tables above: countries without action plans or an advanced infrastructure (e.g. Greece), countries with action plans but without advanced infrastructure (e.g. Turkey), countries with an advanced infrastructure but without action plans (e.g. UK), and countries with both advanced infrastructure and action plans (e.g. Ireland).

Action plans adopted by major buyers

The Action Plan called on Member States to stimulate national buyers to also adopt action plans for introducing electronic public procurement.

However, no such action plans have been identified in the course of the present study. While the countries with national action plans have frequently also adopted measures aiming to improve or even mandate the usage of eProcurement solutions by key buyers, these measures do not appear to include encouraging the adoption of separate action plans by the buyers themselves. Thus, there are no indications of Member States taking this point into consideration to a significant extent.

Statistical data collection at the national level

Effective policy making requires a sufficiently clear and comprehensive insight in the national status of public procurement markets. The Action Plan thus requires Member States to establish electronic systems for the collection and processing of statistical procurement data, to be established by the end of 2006. This would also assist Member States with assessing whether they meet the quantitative goals to be included in their national action plans, as was mentioned above.

Such data collection is very limited, at least in a public form. In fact, this lack of accessible reliable data has proven to be one of the main barriers in conducting the present evaluation exercise. Rare exceptions exist however, and a few good practice examples can be identified.

- ***France:*** the main good practice example can be found in France, where an Economics Observatory for Public Purchasing (*Observatoire Economique de l'Achat Public* (OEAP) – see http://www.economie.gouv.fr/directions_services/daj/oeap/index.htm) has been established with the explicit goal of monitoring procurement spending (albeit without focusing on eProcurement specifically, i.e. it is more comprehensive than required under the Action Plan. The published data also relates largely to public procurement in general, rather than eProcurement specifically. None the less, it is one of the leading examples of systematic monitoring in Europe.
- ***Austria:*** a second clear good practice can be found with the Austrian Federal Procurement Agency (*Bundesbeschaffung GmbH* - www.bbg.gv.at), which publishes annual reports on its activities, including exact figures on conducted procurements and estimated cost savings (see http://www.bbg.gv.at/publikationen/taetigkeitsberichte/).
- ***Czech Republic:*** the Official Site of Public Contracts serves as the primary information website for public procurement in the Czech Republic. It is available at www.portal-vz.cz and provides detailed information on the public procurement framework in the Czech Republic. Apart from general information (applicable legislation, judicial decisions and guidelines, etc.), it has a specific subsection dedicated to statistical data on public procurement.
- ***Cyprus:*** the recently finalized CyePS portal site (http://www.eprocurement.gov.cy) consists of several modules, one of which has been dubbed eStatistics. Statistics are made available for direct downloading in excel-format; see https://www.eprocurement.gov.cy/ceproc/viewInfo.do?section=statistics. The system is being actively promoted as a good practice via http://www.epractice.eu/en/cases/cyprusepsawards.

- ***Lithuania:*** the Central Public Procurement Portal (www.cvpp.lt) publishes all procurements with related documents but also planned purchases. It provides some statistics for the most recent years directly on its home page, along with links to additional summary usage data.
- ***Romania:*** the SEAP portal (*Sistemul Electronic de Achizitii Publice* - www.e-licitatie.ro), which was first established already in 2002 also publishes some basic usage statistics, which appear directly on the front page.
- ***Turkey:*** the Turkish Public Procurement Authority (PPA) is the regulatory and supervisory authority in the area of public procurement. It has administrative and financial autonomy, and is responsible for a number of tasks, including the compilation and publication of public procurement statistics. It is also charged with the establishment of an Electronic Public Procurement Platform (EPPP). Thus, it seems likely that Turkish eProcurement actions in the future will be well followed and evaluated.

It should be noted that, with the exception of the French Observatory, most of the sites above only publish statistics with respect to their own activities, and not to eProcurement actions in the country as a whole. Furthermore, the level of detail of (public) information varies quite widely, with most of the initiatives above offering only simplified aggregate information (e.g. number of procurements and budgets awarded through the system). In that respect, it seems that the data collected and published in most Member States is not very conducive to evaluating the effectiveness and impact of public procurement policies.

Policies geared towards SME participation - European status

To encourage the participation of SMEs, the Action Plan required Member States to launch and support specific awareness campaigns and training programmes targeted at SMEs at national and regional level. Micro, small and medium-sized enterprises are considered to be of great social and economical importance in the European market, since they represent 99 % of all enterprises in the EU, provide around 65 million jobs and contribute to entrepreneurship and innovation[57].

At the European level, SMEs are broken down into three categories (medium, small and micro), based on the following criteria[58]:

Category	Head count	Turnover	or	Balance sheet total
medium-sized	< 250	≤ € 50 million		≤ € 43 million
small	< 50	≤ € 10 million		≤ € 10 million
micro	< 10	≤ € 2 million		≤ € 2 million

SME types and qualification criteria

Ensuring the participation of these groups would therefore ensure that as large a number of economically active entities could compete on the public procurement market, thus increasing competition (and lowering prices for contracting authorities) and ensuring that public procurement budgets would become more equally accessible.

[57] Source: http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/sme-definition/index_en.htm

[58] As defined in the Commission Recommendation of 06 May 2003; see http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2003:124:0036:0041:en:PDF; see also http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/sme-definition/index_en.htm

While the measure was emphatically directly towards the Member States, it is none the less worth noting that a number of relevant steps have been taken at the European level, including the European Small Business Act (SBA) adopted in 2008[59] and the 2008 European Code of Best Practices Facilitating Access by SMEs to Public Procurement Contracts[60]. Section 2 of this Code references the possibilities offer by eProcurement as a potential enabler to the participation of SMEs in public procurements, noting that:

> *"EProcurement promotes competition, as it allows easier access to the relevant information on business opportunities. It may be particularly helpful to SMEs by enabling cheap and quick communication, e.g. downloading the contract documents and any supplementary documents without incurring copying or mailing costs. The specific provisions of the Public Procurement Directives in relation to eProcurement provide the necessary legal framework for operations in this relatively new area.*
>
> *All the Member States have introduced or are planning to introduce national public procurement websites containing a number of features which promote eProcurement. While it is possible in all Member States to search for contract notices via web portals, in many of them the number of such web portals being used by the government and by regional and local authorities makes it difficult for tenderers to maintain an overview. Furthermore, the practical usefulness of these web portals (allowing undertakings to create a profile to receive alerts on corresponding business opportunities, to directly download tender documents, and submit bids electronically etc.) is highly variable.*
>
> *Without prejudice to the actions mentioned in the Commission Communication on a Small Business Act for Europe, the following possibilities could be further developed:*
>
> - *Publication of public procurement notices online;*
> - *Use of a single centralised website, especially in federal or large countries;*
> - *Free access to the notices;*
> - *Multi-functional search engine;*
> - *Possibility for undertakings to create a profile to receive alerts of corresponding business opportunities;*
> - *Direct downloading of contract notices and accompanying documentation;*
> - *Electronic tendering facility, enabling contracting authorities to receive bids electronically in conformity with the requirements of the Public Procurement Directives regarding the integrity of information, confidentiality, appropriate access etc.*
>
> *It is worth noting that some Member States are looking into the possibility of making their websites available in other Community languages so as to enable better and direct access for tenderers from other Member States. Such measures would significantly facilitate cross border procurement."*

[59] See http://ec.europa.eu/enterprise/policies/sme/small-business-act/

[60] See http://ec.europa.eu/internal_market/publicprocurement/docs/sme_code_of_best_practices_en.pdf

Participation of SMEs in public procurements can be measured through a number of sources, including the European Commission's SME Performance Review[61]. Based on the information collection within the Performance Review, the proportion of public contracts won by SMEs in the EU is communicated[62] as being at 61% in terms of number of contracts, and 42% in terms of total value. Obviously, this only accounts for a part of the SMEs' stake in public sector contracts, since contracts won by large enterprises are also occasionally subcontracted to SMEs; however, there is no methodology available to calculate this 'dark number' of SME participation.

The percentages above (as reported by the SME Performance Review) were calculated based on the data from the aforementioned 2007 Evaluation of Small and Medium-Sized Enterprises' (SMEs') Access to Public Procurement Markets[63]. Broken down per country[64], the following overview can be provided for 2005 (sorted by the total value of all procurements won by SMEs):

Country	Share of individual size classes, in %				
	Micro	Small	Medium	SME total	LSE
Slovenia	16	21	42	79	21
Slovakia	13	10	53	76	24
Hungary	9	36	23	68	32
Latvia	11	10	46	67	33
Ireland	1	11	53	65	35
Luxembourg	8	32	23	63	37
Czech Republic	10	27	23	60	40
Poland	5	12	35	52	48
Finland	2	14	35	51	49
Italy	10	12	27	49	51
Austria	6	26	16	48	52
Sweden	6	16	22	44	56
Lithuania	4	24	14	43	57
Denmark	8	19	15	42	58
Estonia	22	10	9	41	59
The Netherlands	2	9	29	40	60
Belgium	7	19	13	39	61
Germany	7	12	18	37	63
Spain	8	5	22	35	65
France	7	16	12	35	65
UK	2	5	24	31	69

National SME share in public procurements

Source: http://ec.europa.eu/enterprise/newsroom/cf/document.cfm?action=display&doc_id=3691&userservice_id=1&request.id=0, p. 48

[61] See http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/performance-review/index_en.htm

[62] See http://ec.europa.eu/enterprise/policies/sme/files/craft/sme_perf_review/doc_08/spr08_indicators_fact_sheets.xls

[63] See http://ec.europa.eu/enterprise/newsroom/cf/itemshortdetail.cfm?item_id=3376

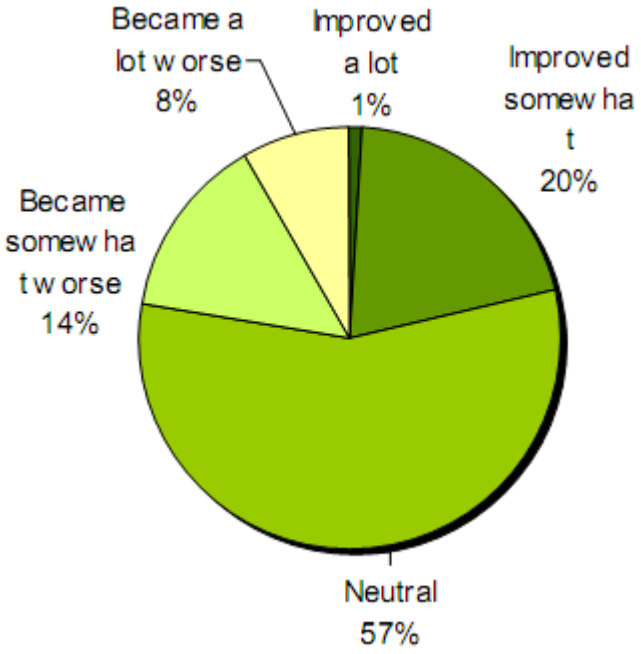
[64] Figures for Portugal, Greece, Cyprus and Malta were omitted because of the low number of economic operators in the sample.

As noted above, SMEs account for approximately 99% of European undertakings, yet the proportion of public contracts won by SMEs in the EU is communicated as being at 61% in terms of number of contracts. However, this discrepancy is not surprising, since most European SMEs operate at the micro level (92% of European enterprises are micro-enterprises[65], often single person undertakings), meaning that they are materially unable to provide the services required in public contracts, due to a lack of resources.

Similarly, the share of SMEs in total turnover of SMEs and LSEs is 48%, with a share in production value of 52%[66], while they are capable of winning 42% of public sector contracts in terms of total value. Again, this percentage is lower due to the fact that SMEs will be more easily able to win smaller contracts rather than larger ones, as smaller contracts fall more easily within their resource capabilities. None the less, the table above shows that the proportion of contracts won by SMEs ranges from 79% for Slovenia to 31% for the UK, which indicates that at least for some countries a margin for improvement still appears to exist.

The main weakness of the data provided above is that it relates to 2005 (before the Directives were transposed in most of the concerned countries), and that it only reflects SME participation in public procurements in general, and not specifically for eProcurement.

However, the study also polled contracting authorities to determine which actions they undertook to encourage the participation of SMEs, and what they considered the impact of the Public Procurement Directives to be. With respect to the second issue, the following replies were given:



[65] See the First Section of the 2008 Annual Report on EU Small and Medium-sized Enterprises, notably p. 5 and p.19 and following; http://ec.europa.eu/enterprise/policies/sme/files/craft/sme_perf_review/doc_08/spr08_annual_reporten.pdf

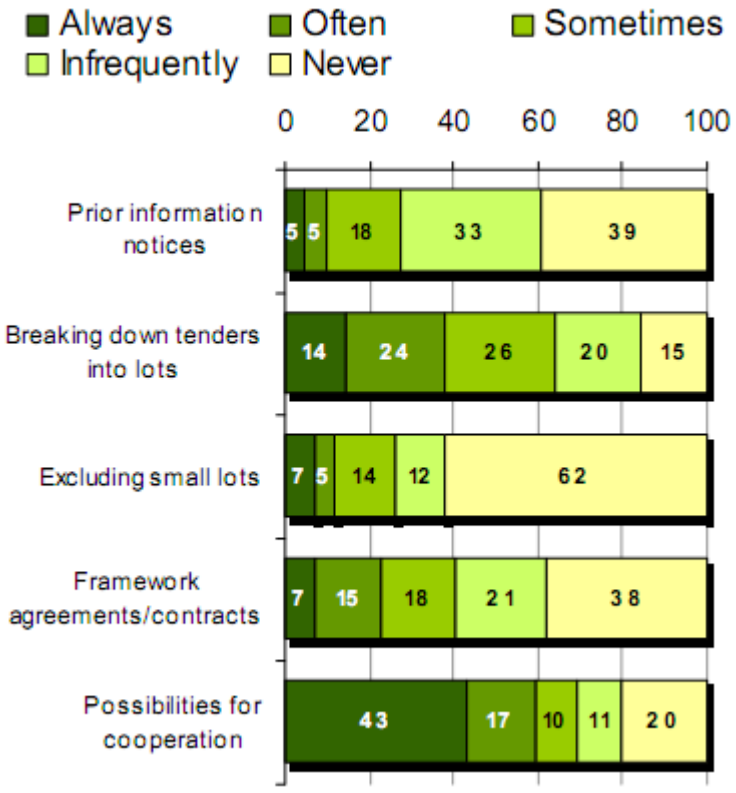
[66] Source: http://ec.europa.eu/enterprise/policies/sme/files/craft/sme_perf_review/doc_08/spr08_annual_reporten.pdf, p. 27

Contracting authority appreciation of the effectiveness of SME encouragement policies

Source: http://ec.europa.eu/enterprise/newsroom/cf/document.cfm?action=display&doc_id=3691&userservice_id=1&request.id=0, p.83

Thus, at least based on the impressions of contracting authorities, the regulatory framework as such is largely perceived as being neutral, with negative and positive perceptions more or less balancing each other out. It is interesting to note, though, that negative opinion seems to be more pronounced (8% choosing 'became a lot worse') than positive opinion (only 1% choosing 'improved a lot').

With respect to the options used to encourage or facilitate the participation of SMEs in public procurements, the following possibilities were indicated as being favoured by the contracting authorities:

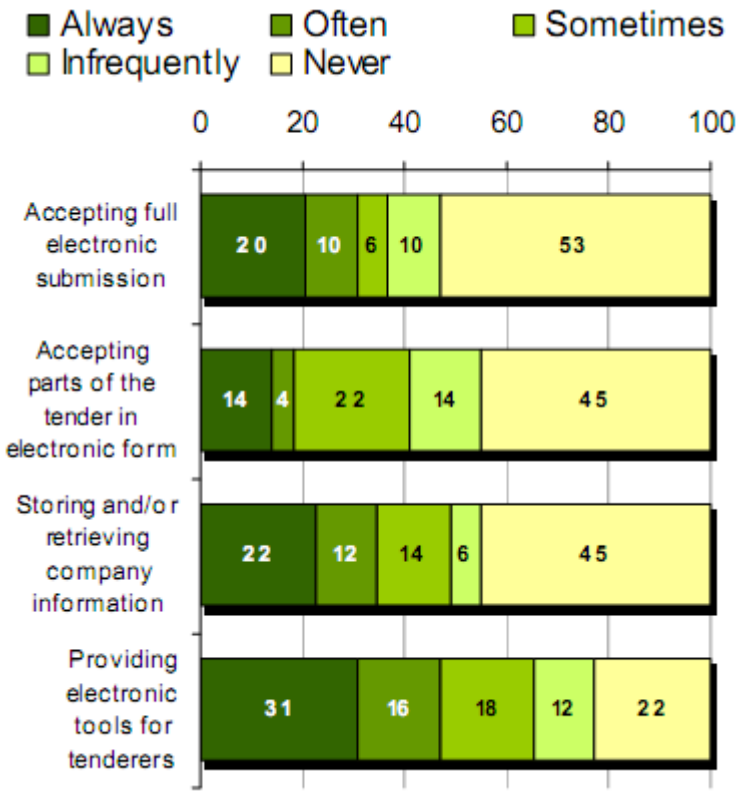


Approaches favoured by contracting authorities to encourage SME participation

Source: http://ec.europa.eu/enterprise/newsroom/cf/document.cfm?action=display&doc_id=3691&userservice_id=1&request.id=0, p.81

The most favoured options were thus those that would allow SMEs to overcome their inherently more limited resource scope, namely allowing for the possibility of cooperation and breaking down procurements into smaller lots.

Specifically with respect to eProcurement, measures taken to support the participation of SMEs were relatively limited, and in line with the uptake data presented above:



Frequency of measures taken by contracting authorities to encourage SME participation

Source: http://ec.europa.eu/enterprise/newsroom/cf/document.cfm?action=display&doc_id=3691&userservice_id=1&request.id=0, p.82

Full electronic submission is relatively rare, with more than half of contracting authorities confirming that they never permit it. The most common encouragement measure is providing electronic tools for tenderers, which is done at least occasionally by 78% of contracting authorities. However, since these tools are not broken down into subcategories, it is not impossible that these relate principally to websites where opportunities are announced (i.e. the eNotification and electronic access phases that are commonly offered, as was also noted in the uptake section above).

Policies geared towards SME participation - national status

At the national level, as required by the Action Plan, several countries have adopted policies to stimulate the participation of SMEs in public procurements, with notable specific policies having been identified in Ireland, Italy, France, and the UK (particularly Scotland). In the sections below, we will examine a few case studies which are aimed specifically at stimulating the participation of SMEs in public procurements, and seeing how these figures correlate with general EU participation rates as noted above.

Case study: SME encouragement policy in Ireland

The section above already showed that Ireland was one of the countries with an above average rate of SMEs winning public procurements in 2005. It is therefore not surprising that Ireland is one of the

countries which has considered the needs of SMEs in eProcurement in particular, through an official policy document[67], which is also reflected in the Irish eProcurement strategy[68].

The policy document identified several actions that could be undertaken by each of the stakeholders to improve and facilitate the participation of SMEs in public procurements.

- identify and meet relevant training and guidance needs
- identify good practice where it might exist, either externally or within the Irish procurement regime and then seek to promote it nationally
- identify initiatives undertaken in other States which might be examined and adapted for use nationally, where appropriate
- develop and promote the use of standardised tender forms. This will reduce the administrative burden for SMEs
- develop the 'etenders' website to provide useful market information
- keep SMEs in mind in developing 'etenders', e.g. by providing more targeted alerts to suitable opportunities for SMEs
- develop and promote the "Postbox" in a way that is sensitive to SME needs
- arrange or participate in appropriate information events (seminars, workshops) arranged by the sector representative bodies

For contracting authorities, the recommended actions were to:

- avoid using pre-qualification criteria or award criteria that systematically/needlessly exclude SMEs from contracts
- set out requirements in clear unambiguous tender documentation
- avoid superfluous lengthy tender documentation
- be conscious of the potential of, or impact on, SMEs at each stage of the procurement cycle (identifying the need, specifying, the award process etc.)
- avoid issuing prescriptive tenders / set out requirements in terms of a deliverable which allows/encourages SMEs to provide creative and innovative solutions
- consider breaking requirement into lots which could be supplied by small enterprises (while having regard to the obligation to aggregate lots for the purpose of determining advertising thresholds)
- when establishing frameworks, include SMEs where the nature of the framework and the subject of the contracts allow this
- encourage arrangements that facilitate sub-contracting on larger contracts
- publish a "buyer profile", with relevant information on their purchases and procurement procedures, on their websites

[67] See http://www.etenders.gov.ie/guides/Guide_Download.aspx?id=1863

[68] See http://www.etenders.gov.ie/guides/Guide_Download.aspx?id=1222

- provide a contact point that will assist tenderers with any problems/queries
- debrief candidates and tenderers constructively.

For SMEs, the recommended actions were to:

- register and check eTenders for opportunities, sign up for appropriate alerts
- check for published prior information notices or contact purchasing personnel in public bodies and obtain information about upcoming contracts and / or purchasing and tendering policy
- ask to be put on tender lists, where kept
- form consortia/group together, where appropriate, to bid for contracts that one enterprise might have difficulty in fulfilling
- identify and pursue opportunities for sub-contracting on larger contracts
- request debriefing on outcome of tendering procedure.

The result is a very pragmatic and low threshold approach to eProcurement, as will be described in the infrastructure chapter below, where user friendliness takes a central role, thus ensuring that barriers to participation in eProcurement are minimised. This includes notably the absence of electronic signature requirements or an obligation to submit electronic evidentiary documents during the eProcurement phase.

Case study: SME encouragement policy in France

In contrast to Ireland, the proportion of public procurement contracts won by SMEs in France in 2005 was reported as being the second lowest in the EU, standing at 35%. This may be explained in part due to the sheer size of the procurement market, which could conceivably result in larger than average contracts, which may be harder to participate in for SMEs.

In France too, a specific policy has been set up to encourage SMEs to participate in public procurements, via a specific portal site (http://www.marchespublicspme.com/). The site focuses on disseminating good practices and practical guides to SMEs to facilitate their access to the public procurement market.

In addition, through the French 2006 Public Procurement Code, several provisions were added to favour the participation of SMEs. These included notably[69]:

- Mandatory usage of separate lots in all cases where this does not encumber the organisation of the procurement (Article 10 of the Code).
- Required guarantees with respect to financial and economic solvency must be proportionate to the procurement (Article 45 of the Code).

[69] Source: http://www.marchespublicspme.com/marches-publics-mesures-pme.html

- Contracting authorities can determine the maximum number of enterprises that may respond to a single procurement opportunity. In addition, the authorities may also impose a *minimum* number of SMEs that may present an offer in this case; i.e. where a limited number of offers is allowed, contracting authorities can ensure that at least some of these will originate from SMEs (Article 60 of the Code).
- When an economic operator does not have references similar to those of the procurement for which it has submitted an offer, its offer may not be rejected for that reason alone. The contracting authority will need to take into account the technical and professional capabilities of the economic operator (Article 52 of the Code).
- In the selection criteria for an offer, the contracting authority may choose to indicate that the proportion of the budget to be subcontracted to SMEs will be considered as a factor in awarding the contract.

Thus, the legal framework was specifically adapted to stimulate participation by SMEs. Similar arrangements are known to exist in other countries, including[70]:

- Austria, where contracting authorities have the freedom to decide whether to award a global contract or to sub-divide it into separate lots. When taking such a decision, they have to take into account economic or technical aspects;
- Hungary and Romania, by provisions of national law which specify that the selection criteria must be related and proportionate to the individual lots and not to the aggregate value of all lots.

Public procurement participation rates are monitored in France through the Economics Observatory for Public Purchasing (*Observatoire Economique de l'Achat Public* (OEAP)). Statistics from this Observatory show that 2006 figures for SME success are comparable to those quoted for 2005 above:

	Share of contracts won	Value of contracts won
National contracting authorities	52%	12%
Regional and local contracting authorities	65%	40%
Total	64%	37%

2006 figures of the French Economic Observatory for Public Purchasing on SME success rates

The value figure of 37% represents a mild increase over the 35% estimate for 2005 quoted above. However, given that the Code was implemented in 2006, it is too early to expect any real impact of the adopted measures. More recent figures for the period between 2006-2008 are available from the Resah-idf (the *Réseau des Acheteurs Hospitaliers d'Ile-de-France* – Network of Hospital Buyers of the Ile-de-France region), which identified an increase of contracts won by SMEs in the amount of 72%

[70] Examples taken from the aforementioned Code of Best Practices, see http://ec.europa.eu/internal_market/publicprocurement/docs/sme_code_of_best_practices_en.pdf, p.7

(7,2 M€) in the period 2006-2008[71]. Thus, it seems that French policies are resulting in increased SME participation and success rates.

Case study: Public Contracts Scotland portal[72]

The Public Contracts Scotland (PCS portal - http://www.publiccontractsscotland.gov.uk/) is provided by the Scottish Procurement Directorate (SPD) which is part of the Scottish Government. It was created to act as a single public sector "electronic portal" to support this process.

The solution is intended to allow all public sector contracting authorities in Scotland to manage the procurement process from end-to-end in an electronic environment, from preparing standard documentation to advertising a notice, from receiving electronic tenders to awarding a contract. The portal is stated to conform to or exceed the provisions of the aforementioned European Code Of Best Practices Facilitating Access By SMEs to Public Procurement Contracts.

It is currently used by over 1100 public sector users across central government (including agencies and non-departmental public bodies), local government, the National Health Service, higher and further education organisations, the police service, the fire and rescue services, voluntary sector organisations, registered social landlords and all other public sector contracting authorities operating in Scotland.

Uptake has been successful, with 28.000 economic operators reported as being registered, 82% of which are SME's. Over 780.000 e-mail alerts have been sent to economic operators during the first 8 months of the service, alerting them to over 3700 potential business opportunities. This has resulted in over 16.000 notes of interest on contracts since the service started, of which 81% are from SMEs.

Obviously, the participation of SMEs in the portal does not necessarily serve as a proxy for the actual percentage of contracts won by SMEs[73]. None the less, the percentages above have shown at a minimum that SMEs have found their way to the portal, and are given every opportunity to partake in public procurements.

Case study: Italian Electronic Public Administration's Marketplace (MEPA)[74]

As described on the ePractice website[75], "the Italian Public Administration eMarketplace (MEPA - http://www.acquistinretepa.it/) is an eProcurement platform managed by Consip SpA, a company

[71] See http://www.pactepme.org/docs/pacte/gc/RESAH-IDF/bilan_2006-2008.pdf

[72] Source: http://www.epractice.eu/en/cases/pcscotland

[73] The report mentioned in the case study below on the Italian MEPA noted that "despite active bidding, over 50% of suppliers is never awarded a contract, while the top 1% accounts for more than 20%." Thus, an 82% participation rate of SMEs on the portal does not guarantee success at appreciable rates.

[74] Source: « The determinants of suppliers' performance in eProcurement: evidence from the electronic public administration's marketplace (MEPA), Gian Luigi Albano, Federico Dini, Roberto Zampino and Marta Fana; see http://www.consip.it/on-line/Home/Ricercaesviluppo/UfficioStudi/Ricercheincorso/documento4679.html

[75] See http://www.epractice.eu/en/cases/mepa1

100% owned by the Italian Ministry of Economy and Finance (MEF). It is a virtual market in which any Public Administration (PA) can buy goods and services, below the European threshold, offered by suppliers qualified according to non restrictive selection criteria. The entire process is digital, using digital signature to ensure transparency of the process. It is a dynamic tool in which products and services are presented in eCatalogues according to standard formats. […] It allows registered administrations to use 2 main purchasing tools: Direct Order (DO), and Request for Quotation (RfQ). The latter allows the PA to negotiate the price and service conditions by inviting a pool of qualified suppliers to make a customized quotation, providing both price and technical/quality details. This dynamic procedure stimulates strong competition, gathering offers from various suppliers. The role of Consip is to define qualification requirements, terms of conditions, and to monitor that transactions are performed according to the MEPA rules."

It thus allows contracting authorities to purchase directly from eCatalogues through the aforementioned DOs or to compare products and prices via the RfQs. In 2007, the volume of all purchases completed through the MEPA since its launch in 2003 reached 160 million EUR. Recent regulations have made the use of the Marketplace compulsory for central public bodies.

The MEPA was launched in 2003, and therefore already has an extensive amount of usage data to analyse. Specifically with respect to SMEs within MEPA, one of the main goals was always to improve SME participation in public procurement procedures, through the openness, transparency and process simplification related to the adoption of the electronic tool. This policy appears to have been successful[76]:

- 97% of registered suppliers (more than 5.000) are SMEs, and 64% are "micro" (less than 10 employees).
- SMEs get more than 90% of MEPA total spending (170 million EUR in 2008) and "micro" enterprises get 45% of it.

This would represent a substantial increase against the percentage reported above for 2005 (49% of transaction value).

Globally, SMEs were found[77] to be proportionately as successful as large suppliers, with the exception of micro suppliers, which appeared to be significantly less successful than any other category of suppliers. Success increases when suppliers are located in the most developed areas (specifically the north of Italy), and are more inclined to serve a restricted pool of purchasing administrations.

[76] Source: http://www.epractice.eu/en/cases/mepa1

[77] Source: « The determinants of suppliers' performance in eProcurement: evidence from the electronic public administration's marketplace (MEPA), Gian Luigi Albano, Federico Dini, Roberto Zampino and Marta Fana; see http://www.consip.it/on-line/Home/Ricercaesviluppo/UfficioStudi/Ricercheincorso/documento4679.html

4.2.3.2 General conclusions - matching with the Action Plan

With respect to action plans

The overview above showed that 14 of the 32 surveyed countries (including 12 Member States) did not appear to have an action plan that went beyond stating general policy objectives. In contrast:

- 12 countries (including 10 Member States) had adopted an action plan containing a phased planning for the implementation of eProcurement sites, tools or functionalities;
- 9 countries (including 8 Member States) had adopted an action plan containing specific uptake goals (including making specific eProcurement processes mandatory);
- 7 countries (including 5 Member States) had adopted an action plan containing specific cost savings goals.

Given that the Action Plan called upon all Member States to adopt such action plans, this adoption rate (with 56% of countries having adopted an action plan meeting the requirements) can be seen as low. However, it should also be acknowledged that some countries may have had action plans in place that have since become redundant because objectives had already been achieved, which would not be accounted for in the figures above. In addition, several countries without a formal action plan were none the less found to have a strongly developed policy with respect to eProcurement. The main finding was that no strong correlation could be shown between the adoption of national action plans and the progress made in developing eProcurement infrastructure or uptake.

The action plan also called for action plans to be adopted by key national buyers. This does not appear to have occurred in practice to a measurable extent.

With respect to statistical data collection

As noted above, data collection is still in its infancy in most Member States, despite an explicit measure in the Action Plan calling upon Member States to take steps in this respect. Good practices were identified in 7 countries, with France being the main Member State that is systematically collecting comprehensive statistical data. Globally, efforts in this area appear to have been too low within most Member States: statistical data is scarce, generally limited in scope, and not comparable between countries. As a result, systematic analysis of the effectiveness of national choices is complicated. This issue should be remedied to improve the effectiveness of policy making, both at the national and European level.

With respect to SMEs

With respect to SME participation, available data indicates that the implementation of best practices can result in a significant uptake with SMEs of eProcurement tools. Specific policies have been identified in Ireland, Italy, France, and the UK (particularly Scotland). These policies have been found to be effective in encouraging participation and winning rates in specific initiatives; e.g. the Italian MEPA reports that 97% of registered users are SMEs, and that they obtain roughly 90% of MEPA spending[78] (as compared to a known[79] 2005 Italian average of 49% of public procurement budget awarded to SMEs); similarly, French figures for the period between 2006-2008 are available from the Resah-idf (the *Réseau des Acheteurs Hospitaliers d'Ile-de-France* – Network of Hospital Buyers of the Ile-de-France region), which identified an increase of contracts won by SMEs in the amount of 72% (7,2 M€) in the period 2006-2008[80]. However, it is not clear if these trends also exist at the national level (i.e. considering all instances of eProcurement, rather than only those relying on selected systems), as there is no data available on this point. A key barrier for SME participation and success identified by these initiatives is the difficulty for these undertakings to find the necessary resources to perform public sector contracts (rather than the difficulty of participating in procurements as such). In that respect, it is not surprising that key best practices relate to breaking down procurements into lots wherever possible, or otherwise encouraging participating with or between SMEs in the preparation of joint offers.

As shown in the analysis of distribution of benefits, in the examined countries, the policies have been quite successful in getting SMEs to use eProcurements; thus, participation can certainly been stimulated successfully.

[78] Source: « The determinants of suppliers' performance in eProcurement: evidence from the electronic public administration's marketplace (MEPA), Gian Luigi Albano, Federico Dini, Roberto Zampino and Marta Fana; see http://www.consip.it/on-line/Home/Ricercaesviluppo/UfficioStudi/Ricercheincorso/documento4679.html

[79] See http://ec.europa.eu/enterprise/newsroom/cf/itemshortdetail.cfm?item_id=3376

[80] See http://www.pactepme.org/docs/pacte/gc/RESAH-IDF/bilan_2006-2008.pdf

4.3 The international perspective

4.3.1 Introduction

The Action Plan did not focus exclusively on the European perspective. It was also recognised that, at some point, the issues being examined at the European scale would also need to be addressed at the international level. While ambitious, opening public procurements to an international audience would increase competition by yet another order of magnitude: contracting authorities would conceivably be able to accept offers from economic operators established anywhere in the world, and European economic operators might similarly be able to enter new markets by participating in public procurements in non-European countries. However, it goes without saying that all existing issues at the European level would need to be addressed at the international level as well. Furthermore, this would need to be done without the benefit of a more or less common legal framework in the form of the Directives. Obviously then, an open international public eProcurement market would be a very ambitious goal.

4.3.2 The 2004 status and vision of the Action Plan

The 2004 Impact Assessment did not explicitly consider the international perspective yet. Globally however, the main realisations existing at this time related to policy making and standardisation work. Specifically:

- The present version of the WTO Government Procurement Agreement (GPA) was negotiated in parallel with the Uruguay Round and entered in force in 1996. It is to date the only legally binding agreement in the WTO focusing on public procurement. It provides for a common legal framework for public procurements and for access to the procurement markets of the GPA signatories..
- UNCITRAL established a Working Group on public procurement[81], in view of updating the UNCITRAL Model Law on Procurement of Goods, Construction and Services to reflect new practices, in particular those that resulted from the use of electronic communications in public procurement.
- Standardisation work was already progressing via CEN (as an entry point for EU contribution to UNCEFACT work) and OASIS.

From a purely practical perspective however, international eProcurement was non-existent in 2004 (or rather: there are no indicators of it occurring at appreciable levels).

[81] See http://www.uncitral.org/uncitral/en/commission/working_groups/1Procurement.html

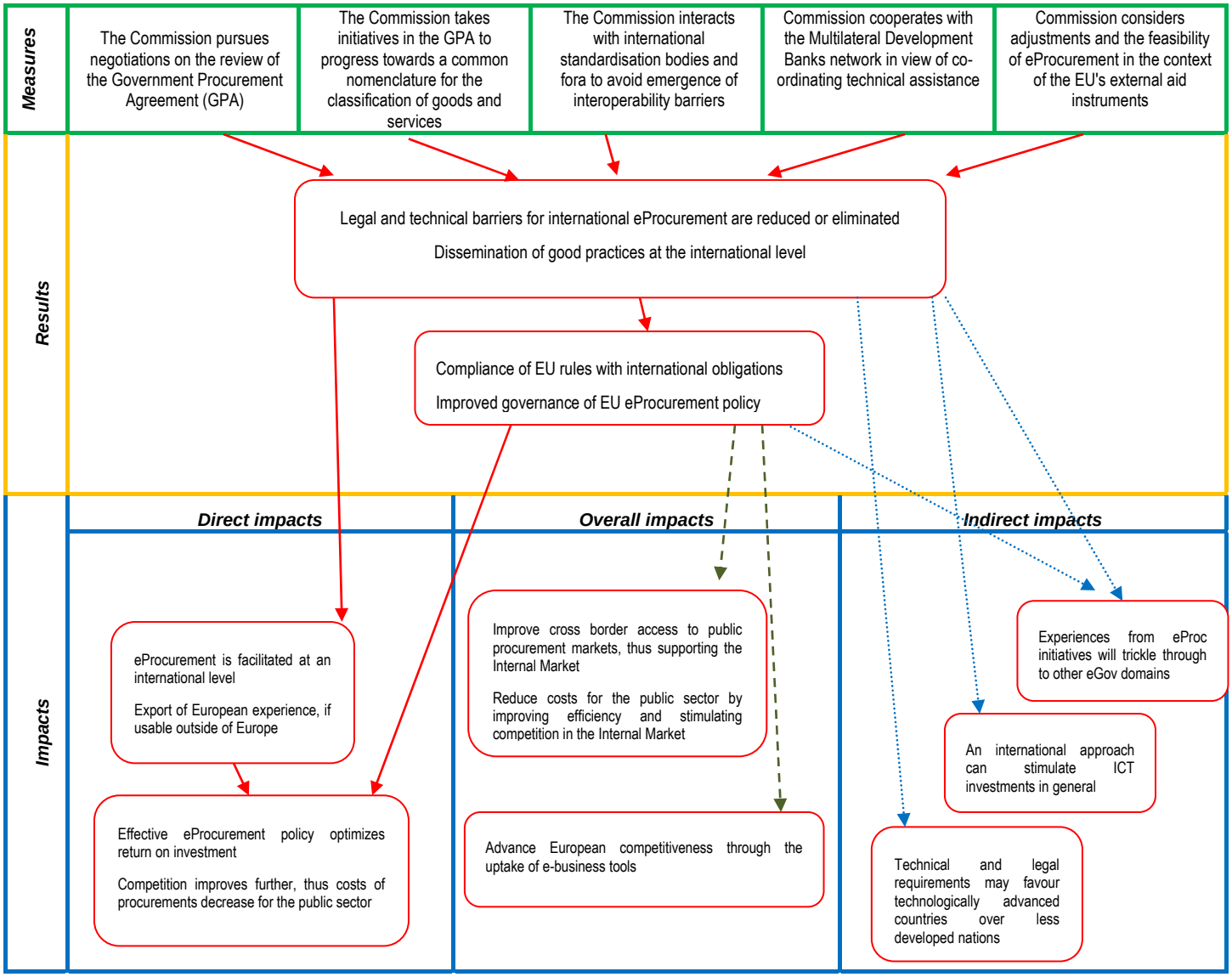
The Action Plan foresaw five specific measures within the third objective, aiming to build on this work and create an opportunity to disseminate any European good practices:

Measure	Targeted party	Nature of the measure
The Commission pursues negotiations on the review of the Government Procurement Agreement (GPA)	Commission	Enabling international procurement
The Commission takes initiatives in the GPA to progress towards a common nomenclature for the classification of goods and services	Commission	Identification/resolution of interoperability barriers
The Commission interacts with international standardisation bodies and fora to avoid emergence of interoperability barriers	Commission	Identification/resolution of interoperability barriers
Commission cooperates with the Multilateral Development Banks network in view of co-ordinating technical assistance	Commission	Enabling international procurement
Commission considers adjustments and the feasibility of eProcurement in the context of the EU's external aid instruments	Commission	Enabling international procurement

Measures in the Action Plan related to international public procurement

Each of the five measures called on the Commission to build on existing policy and standardisation work, and to find and exploit opportunities for disseminating European good practices. No hard targets were proposed with respect to international eProcurement uptake, and the scope of the measures can be described as relatively modest, with the first two (related to the GPA) aiming to reform the normative framework at the international level, and the latter three looking to develop and exchange know-how with third parties. Indeed, far reaching ambitions would indeed likely have been premature, given that no good practice examples of international eProcurements in the public sector were available at this time.

The envisaged actions and their impact were illustrated as follows in the intervention logic above:



The most direct indicator of the measures' impact is the extent to which international eProcurement has been enabled. Less direct indicators could be the extent to which the policy and standardisation framework has been progressed, and whether European good practices have trickled through to the international level.

4.3.3 Current status and evolution - matching with the Action Plan vision

4.3.3.1 Actions undertaken

Each of the five measures was directed at the Commission; therefore, to assess progress, we should focus on European initiatives.

Review of the Agreement on Government Procurement (GPA)

The Action Plan called upon the Commission to pursue the negotiations on the review of the GPA, including with a view of ensuring the utilization of a single common nomenclature for the classification of procurement goods and services (like the CPV used in Europe).

Broadly, this should ensure that the European approach is aligned with international trends, thus facilitating eProcurement at the international level as well.

Progress was made in this area. In December 2006 the GPA negotiators reached an understanding on the revision of the text of the 1994 GPA. Regarding e-procurement, the Commission fulfilled its goal and the revised text[82] includes provisions on eProcurement (including e.g. the possibility of shortening deadlines for tender submissions, the introduction of eAuctions, confidentiality of data, transparency, interoperability, etc.). Regarding the nomenclature for classification, the Commission achieved its goal only partially and obtained Article XXII.13 of the aforementioned Proposal for GPA Review (the so-called 'rendezvous clause'), which states that “Not later than the end of the third year from the date of entry into force of this Agreement, the Committee shall undertake further work to consider the advantages and disadvantages of developing common nomenclature for goods and services and standardised notices.” Thus, while no short term progress can be expected, an opening for further progress exists. It should be noted however that the revised GPA text remains provisional until the negotiators reach a satisfactory outcome of the market access negotiations.

Liaising with international standardisation bodies and fora

As discussed elsewhere in greater detail, several standardisation initiatives are currently underway, including via CEN (as an entry point for EU contribution to UNCEFACT work) and OASIS. This allows European efforts to serve as an input at the international level, and inversely for European efforts to consider the international context.

Liaising with the Multilateral Development Banks (MDBs) and third countries via EU external aid instruments

At the international level, the Commission coordinates and liaises with:

[82] See http://docsonline.wto.org/imrd/directdoc.asp?DDFDocuments/t/PLURI/GPA/W297.doc

- UNCITRAL, through participation in its Working and Expert Groups on public procurement[83], entrusted with the elaboration of proposals for the revision of the UNCITRAL Model Law on Procurement of Goods, Construction and Services
- Multilateral Development Banks: mainly through the dissemination of good practices and experiences.

With respect to the EU external aid instruments (including e.g. in the context of the World Bank), the EU has the possibility of influencing procurement policies in third countries as well, specifically to ensure that EU economic operators do not see their access to these markets unduly hindered. The Action Plan called upon the Commission to determine if and how these instruments could be used to streamline eProcurement possibilities in third countries. However, no specific results of this work could be identified.

4.3.3.2 General conclusions - matching with the Action Plan

Most of the prescribed measures appear to have been implemented; however, practical impact of this work has been limited. The review of the GPA has resulted in a new proposal; however, its entry into force is subject to the successful outcome of the market access negotiations, which are still on-going. An international nomenclature has not yet been established either.

The main area of progress at the present stage is the current revision of the UNCITRAL Public Procurement Model Law, where detailed provisions regarding:

(a) electronic publication of procurement-related information;

(b) the use of electronic communications in the procurement process;

(c) controls over the use of electronic communications in the procurement process;

(d) electronic reverse auctions (ERAs);

have been included in the draft revised text, subject to its final adoption by the United Nations Commission on International Trade Law (UNCITRAL).

Similarly, while standardisation work has progressed (notably based on OASIS UBL work), this has not yet led to large scale uptake. Finally, while detailed information on cross border procurements is rarely available, but it seems unlikely that international eProcurement is occurring in the Member States at any appreciable level, given the fact that all existing legal, political and technical barriers to adopting eProcurement at the European level are aggravated outside of an EU context.

[83] See http://www.uncitral.org/uncitral/en/commission/working_groups/1Procurement.html

5 eProcurement infrastructure: central purchasing bodies, platforms and portals

5.1 Introduction – basic concepts

The chapter above explored mainly the legal and policy framework that was put in place in each of the surveyed countries with respect to eProcurement. As was already highlighted at several points, regulations and policies must however be supported by suitable infrastructure as well. eProcurement requires that the main stakeholders have the necessary infrastructure available to support the main phases involved: contracting authorities must be able to publish opportunities, receive bids, and evaluate/award them, whereas economic operators must be able to prepare bids, submit them, and keep track of the results.

Each of these phases and functionalities will be examined in greater detail in chapters 6 and 7 of this report. However, before looking at these details, we will first examine the infrastructure available in each of the countries at a higher level.

It must be kept in mind however that there are several models which Member States can follow. While many eProcurements will be conducted via specific eProcurement websites (either dedicated websites, or sites which also contain non-procurement content), it is also possible to organise eProcurements by relying on software designed for this purpose, which must be installed locally and will operate independently of any website.

In addition to the website/local software question, the operator of the eProcurement infrastructure must also be considered. The first option established emphatically by the Directives is to rely on a so called central purchasing body (CPB), defined in the Directives as “a contracting authority which acquires supplies and/or services intended for contracting authorities, or awards public contracts or concludes framework agreements for works, supplies or services intended for contracting authorities”. A CPB thus operates as an entity that procures on behalf of other public bodies, i.e. it operates in a model in which the beneficiary of the procurement (i.e. the body that will benefit from the supply or service) is not its contracting authority. Rather, the CPB acts as the contracting authority, and will procure supplies or services for the benefit of another party.

This is obviously a very appealing option, as CPBs have the opportunity of focusing specifically on public procurements as a ‘core business’. This implies that they may be able to procure more efficiently (both more cheaply and more quickly) and with less potential errors and disputes than another authority might. CPBs offer procurement as a service to aspiring contracting authorities, thus allowing them to focus on their own non-procurement tasks.

However, not all public procurement websites are operated by CPBs. An eProcurement website can also be exploited by a central, regional or local government (either for its own exclusive use, or with a view of making the infrastructure available to other contracting authorities), or even by a private sector operator. In the latter case, it will typically be a for-profit venture in which contracting authorities will be charged for any procurements they organise via the site. In the former case, sites can be either made freely available (i.e. it is tax payer funded, from the perspective that the benefits generated from using

eProcurement will compensate the cost of operating the site) or they can request a contribution from any contracting authorities using the site.

Finally, a third model is that a standard eProcurement platform has been created, which can be instantiated for use by specific contracting authorities (again either freely or for profit). In this case, the contracting authority will thus not use a website operated by a third party, but will have its own version of the site running on its own systems, which it can operate itself directly.

In the sections below, we will examine the choices that Member States have made in implementing their infrastructure.

5.2 The 2004 status and vision of the Action Plan

5.2.1 2004 status

The status of eProcurement infrastructure in 2004 was already summarised above, based on the findings of the 2004 Impact Assessment. Briefly summarised, the assessment noted that:

- 36 public procurement systems were identified in total, 21 of which were operational at the national level, 9 at the regional level, and 6 which were sector/context specific. 29 of the 36 systems were owned by a public body, although some of these were operated by private parties.
- These 36 systems covered 16 out of the 25 Member States; thus no eProcurement systems were available in 9 Member States.
- The following functionality figures were provided for these systems:
    - Notification about tenders: 33 systems, i.e. 92%.
    - Publication of tenders: 17 systems, i.e. 47%.
    - Management of receipts/submission of tenders: 9 systems, i.e. 25%.
    - Evaluation of tenders: 3 systems, i.e. 8%.
    - Ordering: 8 systems, i.e. 22%.
    - Invoicing: 1 system, i.e. 3%.
- Experiences with advanced forms of eProcurement were rare:
    - Public authorities in 10 countries had experiences with electronic auctions.
    - Public authorities in 2 countries had experiences with DPS.
    - Public authorities in 14 countries had experiences with eCatalogues.

  It should be noted that much of the reported experiences were only at the pilot level (6/10 for eAuctions, 1/2 for DPS, and 8/14 for eCatalogues); at the real-life operational level, experiences were thus only available in 4 countries for eAuctions, 1 for DPS, and 6 for eCatalogues.
- Member States foresaw difficulties in ensuring that their technical infrastructure would be fully compliant with the provisions of the Directives.11 Member States believed that they had eProcurement systems that complied with the Directives, whereas 14 believed that they did

not. Specifically for newer features of the Directives (which at the time included eSubmission), compliance was expected to be rather low. The Member States therefore invited further guidance to conducting compliance assessments.

- Interoperability (or rather: cross border accessibility) was seen as a major issue. Member States with a functioning eProcurement system noted that their infrastructure generally operated as a strictly national initiative, which was difficult or impossible to use by foreign economic operators in practice. Interoperability issues were noted inter alia with respect to nomenclature, eCatalogues and eSignatures.

5.2.2 Vision of the Action Plan and indicators for success

While the choice to develop specific infrastructure is of course a purely national competence, as is the choice between the different models as outlined above, the Action Plan was very much concerned with the prospect of seeing the continuation or development of interoperability barriers between the Member States. The core vision of the Action Plan was that any economic operator from any Member State should be able to participate in any eProcurement in any other Member State, using the infrastructure locally available to the economic operator.

This implied that any infrastructure developed by the Member States would need to comply with the provisions of the Directives, and the Action Plan foresaw several measures aimed at supporting compliance assessments.

Measure	Targeted party	Nature of the measure
Member States review whether all operational eProcurement systems have been adjusted to the requirements of the Directives	Member States	Compliance assessment of existing systems
Member States introduce national accreditation schemes	Member States	Compliance assessment of existing systems
Member States and Commission consider through a feasibility study whether to introduce a European compliance verification scheme	Member States and Commission	Prospective policy assessment for compliance assessment

Measures in the Action Plan related to compliance assessment

These measures were intended to ensure that existing systems would operate in accordance with the terms of the Directives.

A second series of measures was aimed at identifying and removing as far as possible any interoperability barriers existing in these systems:

Measure	Targeted party	Nature of the measure
Member States and the Commission test, refine and validate the results of the IDA common functional requirements for eProcurement systems	Member States and Commission	Support in implementation

CEN/ISSS completes gap analysis on interoperability needs	CEN/ISSS	Identification of interoperability barriers
Commission proposes to continue activities on interoperability issues and monitoring of Member States developments	Commission	Identification/resolution of interoperability barriers
The Commission and Member States promote standardisation activities at European level	Member States and Commission	Identification/resolution of interoperability barriers

Measures in the Action Plan related to interoperability barriers

In the sections below, we will assess to what extent these measures have been taken up, and what their impact has been. Key indicators of success will be the existence of any known violations of the Directives by any identified eProcurement systems for the first batch of measures, whereas the second series can best be judged based on the openness of existing eProcurement systems to use by economic operators from other Member States.

5.3 Current status and evolution - matching with the Action Plan vision

5.3.1 Actions undertaken

5.3.1.1 With respect to compliance assessments

The compliance assessment measures called upon Member States to assess their eProcurement systems, to introduce national accreditation schemes, and required Member States and the Commission to examine the feasibility of a compliance verification scheme. The following actions were identified as follow-up:

- With respect to national assessments, no systematic information is available to determine if the Member States have completed this measure and whether they have done so on time (as the Action Plan stipulated an early 2006 deadline). Given that the transposition of the Directives was not completed in most Member States in early 2006, timely compliance with this specific measure is likely to have been limited. However, looking at the infringements proceedings initiated[84], no eProcurement system has so far been examined for suspected non-compliance.
- Secondly, the Action Plan called upon Member States to adopt national accreditation schemes to verify compliance of their electronic tendering systems with the legal framework. Such schemes are intended to facilitate the verification that the systems and tools existing or forthcoming in electronic public procurement comply with the requirements of the new public procurement Directives, e.g. through voluntary accreditation schemes. Compliance with the measure was measured in the 2007 Study on Compliance Verification in Electronic Public Procurement[85]. This study determined that an official verification strategy was used in 48% of

[84] See http://ec.europa.eu/internal_market/publicprocurement/infringements_en.htm

[85] See http://ec.europa.eu/internal_market/publicprocurement/docs/eprocurement/feasibility/compliance-final-report_en.pdf

the Member States, and that the verification may be carried out either by a nationally recognised central agency or externally by an independent 3rd party.

Internal strategies were found to be utilised in 59% of the Member States. This figure is higher, as it includes those strategies which, although effective, are not recognised officially through a documented procedure or standard, and are based purely on internally designed, albeit valid, processes. Only very few countries (11%) were found to not yet have adopted a verification strategy of any sort, due primarily to the stage of development of the system.

Thus, compliance verification systems have been established in some form in most countries, although not universally.

- Finally, to scale the expected beneficial impact of compliance verification schemes to a European level, the Action Plan signaled the possibility of introducing a European scheme which would build on and integrate national schemes. This would ensure that all Member States operate on an equal footing, and would help Member States that had not yet established coherent compliance verification schemes to address this gap. Thus, the Action Plan required the completion of a feasibility study to examine the development of such a TRUST (Transparent Reliable Unhindered Secure Tendering) scheme based on the functional requirements, to be performed by the end of 2005.

  The study was completed through the aforementioned 2007 Study on Compliance Verification. It proposed three different reference scenarios to support compliance verification mechanisms at the European level:

  - a Lite one (voluntary, to result in a quality label);
  - a Looking Ahead one (requiring the creation of a European agency and European standards);
  - a Harmonised Europe one (based on national notified bodies).

  In conclusion, the study proposed two different scenarios for a common compliance verification mechanism.

  - Firstly, a scenario based on the Lite approach. However, this was considered by the study team as insufficiently ambitious and therefore unable to reach the goal of allowing an effective harmonised verification.
  - The second scenario combined aspects of the other two scenarios and had a much more integrated approach. However, it was also considered to be much more complex, and therefore also more costly.

  From a policy perspective, no new initiatives have been tied to this study yet.

5.3.1.2 With respect to interoperability challenges

As a first measure, the Action Plan required the Member States and the Commission to test, refine and validate the results of the IDA common functional requirements for eProcurement systems, based on the 2004 IDA study on common functional requirements. The measure was completed via the Report on Preliminary Functional Requirements for eProcurement[86].

The report analysed procedural aspects of the eProcurement procedures described by the European directives and defined functional and non-functional requirements for implementing them electronically. It also provided technical solutions for their implementation enriched with good practices collected. Volume I presented information and activity flows for all eProcurement procedures, functional and non-functional requirements, an overview of technical specifications and open issues, while Volume II presented a use case analysis of an eProcurement system supporting all eProcurement procedures. The report was followed in 2007 by an "Additional Report on Preliminary Functional Requirements for eCatalogues", repeating the exercise in an eCatalogues context[87].

Secondly, the Action Plan acknowledged the need for a clear initial insight into interoperability issues (including standardisation), and a constant follow-up of these issues through standardisation work, where needed. As a first step, the Action Plan charged CEN/ISSS to complete a gap analysis on interoperability needs for effective electronic public procurement by the first quarter of 2005.

The Action was completed in 2005, via a specific CEN/ISSS analysis report[88]. It contained a succinct analysis of the differences between private and public procurements from a standardisation and operational perspective, standardisation requirements, and a gap analysis providing some examples of how standardisation issues have been addressed at the national level, and what gaps exist at the European level for specific transaction types. An overview of potentially relevant existing European standardisation initiatives was also provided.

Thirdly, as an ongoing action, the Action Plan called on the Commission to continue activities on electronic public procurement under the IDABC programme for exchange and discussion on interoperability issues and monitoring of Member States development. This specific measure acknowledged the reality that a number of eProcurement interoperability barriers have a horizontal scope (eSignatures, eID, eDocuments including eInvoicing,…), and the IDABC programme was therefore seen as a suitable option to ensure that eProcurement would not be treated in isolation.

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[86] Zee the two main Volumes:

- Volume I : http://ec.europa.eu/internal_market/publicprocurement/docs/eprocurement/functional-requirements-vol1_en.pdf
- Volume II : http://ec.europa.eu/internal_market/publicprocurement/docs/eprocurement/functional-requirements-vol2_en.pdf)

[87] See http://ec.europa.eu/internal_market/publicprocurement/docs/eprocurement/feasibility/ecat-vol-3_en.pdf

[88] See ftp://ftp.cenorm.be/PUBLIC/CWAs/e-Europe/eProc/cwa15236-00-2005-Feb.pdf

While details on the outcome will be discussed in the relevant sections of chapter 7 of this report (on eSignatures, eID, eDocuments, etc), it can be briefly noted that the measure was implemented notably via:

- The IDABC programme 2005-2010, which contains an entry on the implementation of the Action Plan, and which is the main source of funding for planned technical interoperability studies;
- The IDABC eProcurement Expert Group, which is run jointly by IDABC/DG MARKT C1, with a focus on technical interoperability issues.

Since 2010, work is continuing under the ISA programme (2010-2015), which provides funding for (inter alia) continued eProcurement initiatives.

Finally, the Action Plan also called on the Commission and Member States to promote standardisation activities at the European level. As a result, several standardisation activities were completed via CEN and OASIS on XML automated messaging (main progress on eOrdering and eInvoicing phases), product description/classification (like CPV, UNSPSC, eCl@ss, GPC, NCS and eOTD), and eCatalogues (UBL 2.0 (OASIS), specifically via the work of the UBL Procurement Subcommittee; and ec-Catalogue (CEN/ISSS originally, now maintained by UN/CEFACT)). Each of these efforts will be further discussed in the relevant sections below.

The litmus test of the effectiveness of these measures is of course the crucial question to what extent that they have proven to be effective in eliminating interoperability barriers in existing eProcurement systems. In the next section, we will examine this issue by looking at the national situation.

5.3.2 Evolution at the national level

5.3.2.1 Functionalities in the surveyed countries

As a first cursory overview, in the table below we will summarise which eProcurement phases and tools are supported by the primary eProcurement system(s) in each of the surveyed countries, based on the national profiles collected in the course of the study. It should be noted that the table takes into account all major eProcurement infrastructure as identified in the national profiles. This means that there are slight differences for some countries[89] between the summary table below and the summary table in the national profiles, since the table below provides information on the countries as a whole, whereas the tables in the national profiles tend to focus on one specific eProcurement system.

The table aims to give a first indication of sophistication levels of each of the countries. A green mark indicates an available phase or tool; whereas a red one indicates unavailability. The double line demarcates pre- and post-award phases.

	eNotification	eAccess	eSubmission	eEvaluation / eAwarding	eOrdering / eCatalogues	eInvoicing	ePayment	DPS	eAuctions
Austria									
Belgium									
Bulgaria									
Cyprus									
Czech Republic									
Denmark									

[89] Specifically, the following discrepancies can be identified:

- Czech Republic: the national profile indicated that eSubmission was not available via the Official Site of Public Contracts (http://www.isvzus.cz), but that there were several additional systems which did support this functionality.
- Estonia: the national profile indicated that eSubmission was not available via the State Procurement Register (https://riigihanked.riik.ee/), but that there were several additional systems which did support this functionality.
- Ireland: ePayment is not identified as a supported functionality of the eTenders Public Procurement portal (http://www.etenders.gov.ie) in the national profile; however, ePayment services are provided via the facilities and security infrastructure developed as part of the Public Services Broker (source: http://www.defence.ie/website.nsf/fba727373c93a4f080256c53004d976e/7d69ff0a72c4a471802570ce00430e9c/$FILE/ES (eProcument).pdf).
- The Netherlands: the national profile indicated that eNotification, eAccess and eSubmission are not available (but under development) via the TenderNed portal (http://www.tenderned.nl/), but that there were several additional systems which did support these functionalities within their own geographic or topical scope.
- Spain: the national profile indicated that eInvoicing was not supported by the State Procurement Platform (http://www.contrataciondelestado.es). However, eInvoicing is being developed and promoted in Spain via the the Facturae format (originally known as "AEAT-CCI"); see www.facturae.es.
- The UK: the national profile indicated that eEvaluation/eAward and ePayment were not supported by the national procurement portal (http://www.buyingsolutions.gov.uk); however, several additional systems were reported which did support these functionalities.

	eNotification	eAccess	eSubmission	eEvaluation / eAwarding	eOrdering / eCatalogues	eInvoicing	ePayment	DPS	eAuctions
Estonia									
Finland									
France									
Germany									
Greece									
Hungary									
Ireland									
Italy									
Latvia									
Lithuania									
Luxembourg									
Malta									
The Netherlands									
Poland									
Portugal									
Romania									
Slovakia									
Slovenia									
Spain									
Sweden									
UK									
Iceland									
Liechtenstein									
Norway									
Croatia									
Turkey									

Overview of availability of eProcurement infrastructure at the national level

It should be emphasised that the table above should not be taken as gospel with respect to eProcurement capabilities in each country, as its simplicity hides a number of important nuances. Particularly, it is drafted based on the capabilities of the primary identified eProcurement systems in each country, as identified in the national profiles. It is thus not comprehensive, which is especially important in countries with strongly decentralised eProcurement systems (e.g. Sweden), or where no dominant eProcurement systems could be identified (e.g. Estonia). In that respect, the table should be considered an indication of phases and tools offered by leading eProcurement systems, rather than by countries taken as a whole. None the less, a few interesting conclusions can be drawn.

Firstly, the 2004 Impact Assessment noted that eProcurement systems were reported to exist in 16 out of 25 Member States. Looking at the table above, at least rudimentary systems were reported to exist in all but two countries: Greece and Liechtenstein. Thus, 26 out of 27 Member States now have eProcurement systems in place, which is a very significant step forward.

Secondly, it is interesting to note that the pre-award phases (the first four columns, left of the double vertical line) are supported to a noticeably greater extent than the post-award phases (the latter five). eNotification and eAccess in particular are virtually ubiquitous functionalities, which is unsurprising as they are largely unilateral processes (involving only communication from the contracting authority to the economic operator but not vice versa), which makes them significantly easier to implement. More complex phases correspondingly show lower availability, with DPS not being supported as a built-in feature by any of the main identified eProcurement systems, except in France (via the *Place de marché interministérielle* platform - www.marches-publics.gouv.fr).

For more detailed analysis of each phase and tool, including details on implementation and explanations of these trends, we refer to chapters 6 and 7 of this report.

5.3.2.2 CPBs, portals and platforms

Many attempts have been made in the past to chart eProcurement systems available across the Member States. In 2004, the Impact Assessment identified only 36 systems, a number which has undoubtedly gone up to a very significant extent in past years. A very current effort was undertaken in parallel with the drafting of the present evaluation report through the 2009 DG INFSO 8th Benchmark Measurement[90], which examined 746 contracting authorities, 270 service providers and 134 platforms. However, this measurement may be less suited for the purposes of the present study because of its very extensive and inclusive approach. Therefore, the country profiles collected in the course of the present study have been taken as a starting point, which has resulted in the overview presented in Annex B.

This list identifies 22 CPBs, 81 portal sites (managed by a public body or with a mandate from a public body; portals are either for their own use, or for use by other contracting authorities as well); and 26 platforms (managed by private parties without a specific public sector mandate). This amounts to 129 examined sites, spread over 30 countries (i.e. each of the 32 examined countries with the exceptions of Greece and Liechtenstein, where no relevant sites could be identified). These numbers match relatively well with the results of the 2009 DG INFSO benchmarking study; thus it seems that they are likely to be a good indication of the EU eProcurement landscape.

None the less, a few nuances should be taken into account when examining these figures. Firstly, it is clear that the list of sites indicated in the Annex is not comprehensive. Indeed, it would not be realistic to strive for comprehensive coverage of all possible solutions within the scope of this report. In countries with strongly decentralized approaches such as Germany, Italy, Sweden, and the UK, local or regional contracting authorities have a much larger range of procurement solutions available to them, including by implementing solutions developed by private sector service providers.

By way of example, the German private sector owned Administration Intelligence AG platform (http://www.ai-ag.de/) has been implemented by a number of contracting authorities, including e.g. the cities of Frankfurt (www.vergabe.stadt-frankfurt.de) and Bremen (www.vergabe.bremen.de), the state of Hessen (www.vergabe.hessen.de), and the *Landschaftsverband Rheinland* (http://www.lvr.de/). In the Annex, this was counted as one single solution (a single platform), with several examples of known implementations being mentioned. However, one might just as easily argue that each implementation should be counted as a separate platform specific to that contracting authority; an approach that would increase the list to several thousands of sites.

In addition, the scope of the sites can vary widely: some of the sites function as open eProcurement sites (available to any contracting authority), while others are only available to contracting authorities at the national/federal level, at the regional level, at the local level, or within a specific sector.

Finally, it should be kept in mind that the number of sites in a specific country is not necessarily a strong indicator of its eProcurement capabilities. Some countries have only a single site identified (Cyprus, Iceland, Luxembourg, Slovenia and Turkey), but the capabilities of these sites are very different: the Icelandic site is currently only used as an eNotification platform, the Luxembourg and

[90] See http://ec.europa.eu/information_society/eeurope/i2010/docs/benchmarking/egov_benchmark_2009.pdf

Turkish sites additionally support eAccess, and the Slovenian and Cypriot sites also allow eSubmission.

None the less, the list provides a good overview of the main eProcurement solutions in the surveyed countries, considering the validation of the national reports by national experts.

Based on the list of 129 key eProcurement sites, the following conclusions can be drawn:

- Firstly and most obviously, the 129 sites over 30 countries (including 28 Member States) represents a significant step forward compared to the 36 sites over 16 Member States identified in 2004. It is clear that significant investments have been made by the Member States to improve the availability and maturity of their eProcurement infrastructures. Given the relative prevalence of action plans identified above, it seems that the Action Plan has been able to spur initiatives in this field.
- 22 of the sites are operated by CPBs, spread out across 17 countries (Austria, Belgium, Denmark, Finland, France, Germany, Hungary, Ireland, Italy, Latvia, Lithuania, Malta, Portugal, Romania, Slovakia, Spain and the UK), with a multitude of CPBs being identified in Finland and Italy (in the latter case operating largely at the regional level). Cross-referencing these countries with the functionalities table above leads to the following observation:
    - 17 Member States have CPBs which support eProcurement; whereas 10 do not (Bulgaria, Cyprus, the Czech Republic, Estonia, Greece, Luxembourg, The Netherlands, Poland, Slovenia and Sweden).
    - Of the 10 Member States who have not established a CPB conducting eProcurements[91], four do not have a site supporting eSubmission (Bulgaria, Greece, Luxembourg, The Netherlands). Of the other five, three follow a largely decentralised model (Estonia, Sweden and Poland), while the other three (Cyprus, the Czech Republic and Slovenia) have central portals which can be used by a number of contracting authorities.

  This suggests that the development of shared infrastructure plays a strong role in being able to support more complex functionalities such as eSubmission: 17 countries have developed CPBs for this purpose, 3 have no CPBs but do offer centralised portals, and 2 remain fully decentralised. It should be noted that the 17 countries which have implemented CPBs are not all following a fully centralised model or rely on these CPBs exclusively: countries such as France, Germany, Portugal, Spain and the UK each have a multitude of platforms and portals in addition to their CPBs.
- Looking at platforms (owned by private sector parties without a public sector mandate), 26 of these were found in 15 countries, including 14 Member States (Austria, the Czech Republic, Denmark, Estonia, France, Germany, Hungary, Latvia, Lithuania, Norway, Poland, Portugal, Romania, Sweden, and the UK). These follow two possible models:
    - A private party has developed a specific technological solution, which can be installed and used by contracting authorities. The German example mentioned above is an illustration of this, with the same code being used by multiple contracting authorities on separate sites. 7 of the 26 platforms fall within this category, having been identified in Austria, France (2 cases), Germany (2 cases), and the UK (2 cases).

[91] It should be noted that there are additional CPBs which do not use eProcurement at this time (such as the *Service Central des Imprimés* in Luxembourg (www.scie.public.lu); these have not been included in the current study, given its focus on eProcurement.

- In the other 19 cases, a specific platform is offered as a 'software-as-a-service' solution by a private operator. Thus, contracting authorities can use these sites to conduct a specific procurement. The main example of this is the Mercell platform, which was identified as a key solution in several Nordic and Baltic countries (Denmark, Estonia, Latvia, Lithuania, Norway, Sweden), as well as Germany.

This seems to suggest that the development of shared infrastructure (i.e. infrastructure which can be used by multiple contracting authorities) is an important enabler to eSubmission. This is not very surprising, considering the complexities and investments involved. None the less, this illustrates the importance of aggregation: by calling on a common centralised infrastructure or a series of decentralised services, eProcurement can be facilitated to contracting authorities. In a sense, this trend fits well with current developments in the ICT services/software sector in general: the aggregation model within public procurement can essentially be viewed as an application of the cloud computing paradigm, where ICT solutions are increasingly developed and offered as commodity services on demand.

Since language barriers are one of the first pragmatic barriers to cross border eProcurement, it was also examined how many of the 129 key eProcurement sites supported languages other than the national ones. It was found that:

- 39 out of the 129 sites provided at least some information in languages other than the national language(s);
- 11 out of these 39 sites supported two or more additional languages, whereas the other 33 only supported one additional language;
- In each of these 39 cases where at least one additional language is supported, English is among the supported languages. Thus, as was to be expected, English serves as the primary de facto international business language.
- Other additional languages that were supported by more than one site were French (found on four platforms in Spain and one in the UK) and Spanish (once each in France, Portugal, and the UK).

The completeness of the additional language coverage was also examined, based on three tiers: a comprehensive translation; only a few pages in the other language(s) with some global information; or only the main functionality of the site is described. Of the 39 sites supporting at least one additional language:

- 13 are ranked as providing comprehensive translations. 12 out of these 13 support only one non-official language (English), likely due to the investment required to create multiple comprehensive translations.
- 17 translate some pages containing only global information;
- 9 provide only translated descriptions of the main functionalities of the site.

Language coverage thus remains challenging, with around 70% of examined sites supporting only one or more official languages. While not an eProcurement problem as such, this is none the less a practical challenge to be recognised towards the uptake of cross border eProcurement.

A second problem is the practical accessibility of the core functionalities of each site. The issues of interoperability in general will be discussed in greater detail in chapter 7 for each of the relevant domains (primarily eDocuments (including specific document types like eCatalogues), eSignatures, and eID). However, a more direct challenge is the question of what a visitor must do to be able to use all of the eProcurement functionalities of a site. When the site only disseminates information in a relatively straightforward manner (e.g. by allowing visitors to search for procurement opportunities and download the relevant documents), then no restrictions need to apply: the site can be freely used without any need for registration of the visitors. More complex processes (including e.g. customised search functions based on the user's profile and preferences, but also of course eSubmission) will normally require the user to create a profile on the site. This may be as simple as filling out a web form and receiving a username and password (like on most consumer grade eCommerce websites), or it may require the use of smart cards or software certificates issued by a trusted third party.

These requirements can result in accessibility barriers. As a preliminary overview to the approach taken at the national level, the list of sites in Annex B also includes a classification of the accessibility of each site based on three tiers:

- everybody can use the site without any login process (high accessibility);
- a username is needed, which can be requested online (medium accessibility);
- a PKI certificate is required (low accessibility).

It should be noted that the accessibility rating should not necessarily be considered a quality label, since the accessibility rating is determined based on the requirement to use *all* functionalities of a site. For instance, a simple information dissemination site accessible to anyone without restriction will be rated high, whereas a site that offers the same option but which also allows eSubmission based on a smart card solution will be rated as low. None the less, it can be a useful indicator of the requirements that an average visitor would be expected to meet in order to benefit fully from the approach used.

The following observations can be made:

- 52 out of 129 sites (40%) were rated as being highly accessible, meaning that no authentication was required at all. Obviously, none of these supported advanced functionalities such as eSubmission.
- 55 sites (43%) were rated as being medium accessible, meaning that username/password based authentication was required after going through a simple online registration process.
- finally, a group of 22 sites (17%) were rated with low accessibility, meaning that advanced authentication mechanisms based on advanced electronic signatures were used.

As will be examined in greater detail in chapters 6 and 7 below, accessibility drops as more advanced functionalities are supported. Specifically, using eSubmission frequently requires the use of advanced eSignatures. Almost all such solutions are unable to accept foreign eSignature solutions, meaning that foreign economic operators will be unable to use eSubmission unless they can obtain a signature solution issued in the country in which they wish to submit an offer. In practical terms, this problem is present in all systems permitting the use of eSubmissions, with scarce exceptions in Austria, Norway, Denmark and Slovakia (which use advanced signatures but have found limited work-arounds to the existing interoperability challenges), and Ireland which has decided to forego the use of advanced eSignatures and therefore has no interoperability issues to be dealt with. Thus, eSignatures remain a

key barrier to the cross border use of eSubmissions. This problem will be examined in greater detail in the section on eSignatures below.

5.4 Matching with the Action Plan

5.4.1 With respect to compliance assessments

The Action Plan proposed several measures to ensure that national eProcurement systems comply with the Directives, including by requiring national assessments, recommending accreditation schemes, and investigating the possibility of a European verification scheme.

Irrespective of the timing and the actual execution and impact of the measures, the overview above seems to indicate that existing and new eProcurement systems operate substantially in compliance with the Directives, or rather that there are no noteworthy indications to the contrary. In addition, no specific complaints and/or infringement proceedings with respect to the operation of specific eProcurement systems have been identified. The goal of the Action Plan appears to have been achieved in this area.

5.4.2 With respect to interoperability challenges

As a primary positive conclusion, the availability of eProcurement systems has gone up tremendously since 2004, from 16 out of 25 Member States to 26 out of 27 Member States. 3 out of the 26 however are reported as being relatively rudimentary based on the functionalities table provided above, covering only the unilateral phases of eNotification and eAccess, for which no interoperability problems present themselves.

Looking at the accessibility overview in the sections above for eProcurement systems which support eSubmission (i.e. where interoperability challenges become significant), the result is significantly more humbling. The need to authenticate users is handled in one of two ways:

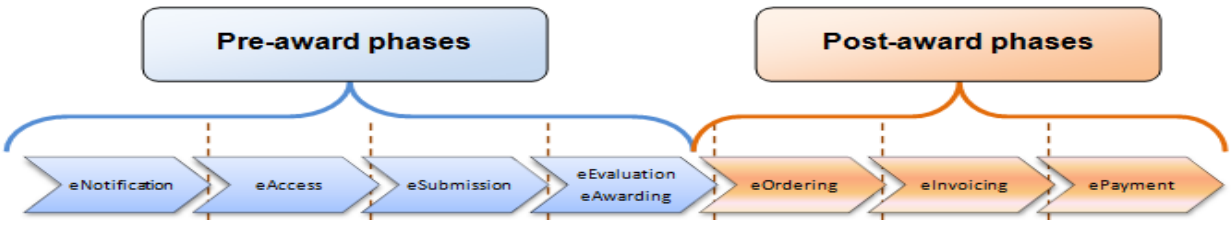
- Based on a simple online registration system, after which the user can authenticate himself using a username and password (like in most B2C eCommerce websites). In this case, few interoperability challenges present themselves with respect to authentication.
- Based on advanced electronic signatures, in which cryptography based solutions are used. In this case, interoperability is very limited, and economic operators typically have little possibility of using foreign eProcurement systems without first acquiring a supported signature solution, which is often (though not always) prohibitively complex or expensive.

Apart from the authentication question, interoperability challenges also present themselves with respect to a number of other areas, including notably eDocuments (specifically eAttestions which need to be submitted to show compliance with selection and exclusion criteria) and eCatalogues, if used. These will each be examined in detail in separate sections below. In practice, most eProcurement systems have established their own solutions, and economic operators will typically be required to adapt their personal approaches or processes to whatever requirements are imposed by the eProcurement system they are trying to use.

Thus, in practice, numerous interoperability challenges still remain, with authentication of the economic operators (especially based on electronic signatures) being a primary challenge.

6 The state of play – overview of eProcurement phases

As announced in the methodology description, we will first examine to what extent eProcurement has been taken up in each of the phases of public procurement. The graphic above structured these phases as follows:



Overview of possible phases in an eProcurement process

It was already noted above that eProcurement is not necessarily used in all phases of any given procurement, i.e. the use of electronic means may not be supported during all phases, or a contracting authority/economic operator may simply forego the use of electronic means during one or more phases. A simple example is an economic operator who learns of a public procurement opportunity online (eNotification) and subsequently downloads the relevant documents from a specific website (eAccess), but who thereafter chooses to conduct the procurement entirely on paper. In this case, eProcurement was only used during the first two phases.

This particular example (eNotification and eAccess, followed by exclusively paper processes) is likely to be a common occurrence in practice, since eNotification and eAccess are largely one-way processes that require limited interaction between the economic operator and the contracting authority. Typically, there will thus be no need to address complex issues such as electronic authentication, electronic signatures and electronic evidences. This means that these two stages are easier and cheaper (relative to the other phases of public procurement) to implement in an electronic environment. Indeed, as noted above, the 2004 impact assessment already observed that eNotification was supported by 92% of the 36 examined systems and publication of tenders (eAccess) by 47%. Uptake figures for the subsequent two-way phases were noticeably lower (eSubmission: 25%; eEvaluation: 8%; eOrdering: 22%; and eInvoicing: 3%). In the sections below, one of the key questions to examine is to what extent this pattern still holds true.

Apart from the distinction between one-way and two-way phases, it is also important to acknowledge the difference between pre-award and post-award phases. The pre-award phases form an intrinsic part of any public procurement: beginning with the publication of the opportunity (eNotification) and the relevant documentation (eAccess), offers are submitted (eSubmission) which are then judged (eEvaluation/eAwarding). Post-award phases do not necessarily occur as an integrated step of the procurement process: eOrdering is only relevant in procurement methods with a specific longevity (framework agreements, DPS, eAuctions), and invoicing/payment are mainly back office processes which are relevant to business organisation in general (i.e. they are not specific to procurements). Thus, for post-award phases, it is crucial to place them in their correct context. This is especially true for eInvoicing and ePayment, both of which are subject to European initiatives outside of the eProcurement domain. It is undoubtedly also for this reason that the Action Plan places a smaller emphasis on post-award phases than on pre-award phases: there is a strong link with other policy

domains and it may therefore be inefficient to attempt to address these post-award phases separately for public procurement, in isolation from those other policy domains.

In the sections below, each phase will be examined in greater detail, starting with their scope and challenges, and then outlining the evolutionary character of the policy and implementation over time from an operational and functional point of view. Any remaining gaps or barriers to the use of that phase in an electronic environment will also be flagged, using the following classification:

- **Lack of available infrastructure:** does the infrastructure permit the use of electronic means to complete this phase?
- **Lack of interoperable infrastructure:** is the infrastructure amenable to being used by a variety of economic operators, specifically in cross border situations?
- **Legal uncertainties:** is the legal framework related to this phase sufficiently clear?
- **Trustworthiness:** can the different parties in the procurement determine whether or not they may rely on the content of a specific electronic communication?
- **Accessibility:** will the economic operators be able to use the electronic solutions being offered?
- **Economic viability and use cases:** is it clear to the economic operators and contracting authorities when the use of electronic communications for a specific phase makes business sense?
- **Transparency:** is there data available to determine if/when a phase is functioning adequately?
- **Market challenges:** has a common solution emerged to implement this phase? If not, then is this necessary or desirable?
- **Distribution of benefits:** is there a sufficiently equitable distribution of benefits between all stakeholders for the use of electronic means for this phase?

6.1 eNotification

6.1.1 Definition and scope

In the introductory section above, we provisionally defined eNotification as "the electronic publication of tendering opportunities (including via procurement notices). This may be combined into a single process with the submission of notices to the OJEU." It should be noted that this description covers two related processes:

- Firstly, the formal publication of a tendering opportunity via notices, insofar as the amount of the procurement meets or exceeds national thresholds. In addition to any national publication modalities that may apply (publication in national journals or on national websites), this also entails the communication of the opportunity at the European level, for publication by the OJEU.
- Secondly, any other process used to communicate the opportunity to any prospective procurement candidates, including local publication or invitations, via print media or via websites.

The first concept (formal publication of notices) is well defined under law. Articles 35 and following of Directive 2004/18/EC and articles 41 and following of Directive 2004/17/EC contain specific rules with respect to the use of notices, including notably:

- A requirement to publish planned public procurements via prior information notices/indicative notices insofar as these exceed certain thresholds at the European level (article 35.1 of Directive 2004/18/EC and article 41 of Directive 2004/17/EC);
- A requirement to publish notices when procurements covered by the Directives are organised (article 36.2, resp. article 42 of the Directives);
- Rules with respect to the form and manner of notices (article 36 resp. 44 of the Directives).

Several variations of the standard contract notices exist, which serve the same functions of ensuring the transparency of the procurement. The first variation is the so-called buyer's profile, a loosely defined notification modality consisting of a collection of data regarding the procurement activities of a given contracting authority, which may include prior information notices, information on ongoing invitations to tender, scheduled purchases, contracts concluded, procedures cancelled and any useful general information, such as a contact point, a telephone and a fax number, a postal address and an e-mail address (point 2(b) of Annex VIII of Directive 2004/18/EC, and point 2(b) of Annex XX of Directive 2004/17/EC). From a practical perspective, buyer's profiles are often implemented as dedicated subsections of a specific website, where this key information on a specific contracting authority's procurement activities can be found. Buyer's profiles can serve as a useful additional publication form, but can also replace a formal publication of prior information notices/indicative notices.

A second variation is the simplified contract notice. This variation can occur when a larger framework for the organisation of procurements has been set up, specifically within a DPS. In these cases, the establishment of the DPS has already been announced through a normal notice, and any subsequent procurements organised under that DPS can thereafter be notified using a simplified contract notice (article 35.3 of Directive 2004/18/EC)

Finally, the Directives also require contract award notices (sometimes abbreviated as CANs) to be published, typically within 48 days after the awarding for general procurements (article 35.4 of Directive 2004/18/EC) or within two months for utilities procurements (art. 43 of Directive 2004/17/EC)/.

Thus, the Directives emphasise the use of certain formalised notices, ensuring that a basic threshold of publicity and transparency is met. There is of course nothing stopping contracting authorities from utilising other forms of communication to exceed this basic threshold, which should in theory increase participation and competition in public procurements, leading to lower prices and/or better quality of services, goods or works. Several examples of such communication modalities which are used in practice are mentioned in the 2009 DG INFSO 8th Benchmark Measurement[92], including the use of personalised email alerts to potential suppliers based on their user profiles, SMS messages, RSS feeds, or more passive forms of communication such as publication on the contracting authority's own website or on other sector/topic specific sites. Such alternative notices are largely unregulated, other than through the requirement that they are not "published at national level before the date on which they are sent to the Commission", and that they may not contain information which is not included in the official notices (articles 36.5 resp. 44.5 of the Directives). In this way, the equality of arms between all economic operators is ensured.

Collectively, these forms of notifications serve to ensure that all procurements are organised with sufficient transparency, so that all economic operators can compete on equal footing, at least with respect to the information made available to them. The usage of electronic means in this phase presents a number of unique opportunities and challenges, which will be discussed further in the following sections.

6.1.2 Main opportunities and challenges of using eProcurement for this phase

6.1.2.1 eProcurement opportunities

The usage of electronic means for the publication of relevant information on public procurements offers a number of substantial benefits over traditional (paper) notifications, including:

- Improved transparency through more systematic publication modalities. The usage of electronic means (standardised software to generate standardised forms using standardised vocabulary) results in more homogeneous notifications, which are less error prone and will become more recognisable and therefore more easily accessible to economic operators. This effect is increased if the same systematic modalities (software / forms / vocabulary) are

[92] See http://ec.europa.eu/information_society/eeurope/i2010/docs/benchmarking/egov_benchmark_2009.pdf

applied at the European level. This also allows notices to be created more quickly and easily, and facilitates their translation.

- Easier and more cost efficient dissemination. Due to the ease with which electronic notifications can be copied and spread around, a single notification can be aggregated to any number of other platforms (including specialised or personalised websites or publications). Greater dissemination leads to more publicity, which is likely to favour participation in eProcurements.
- Wider audience: in addition to being easier to disseminate, electronic notices are also easier to search. The contents of electronic notifications can be indexed and made searchable both via standardised and specialised search engines, which will make it easier for economic operators to find relevant procurement opportunities.
- Multi-modal communication options: electronic communication may be seen as more convenient and more accessible by some economic operators, specifically due to the standardised approach and 24/7 availability. In addition, several electronic communication options are available, ranging from highly passive platforms (e.g. simple publication of opportunities on a publicly available website) to much more pro-active systems (e.g. notification of opportunities via e-mail, SMS messages or RSS feeds).
- More effective targeting: using electronic means, it can become a lot easier for economic operators to register their personal profile and preferences, and keep track of only those procurement opportunities which are relevant to their interests and competences. This typically takes the form of eProcurement platforms on which economic operators can create a personal profile that also specifies their areas of activity, after which they will receive notifications of relevant opportunities published or registered via that platform. This reduces the cost of public procurement participation (more specifically: the cost of finding opportunities) for economic operators, and thus lowers the threshold to participation.

As was noted above, most of these options are not highly complicated from a technical and organisational perspective (at least when compared to other eProcurement phases), meaning that they should be relatively cheap to implement once the basic building blocks (standardised notification forms and a common vocabulary) have been defined.

In the sections below, we will examine the specific challenges to be addressed when introducing eNotifications, given the approach taken in the Directives. It should be noted that these issues were more extensively examined in the 2007 study on the Electronic Transmission of Public Procurement Notices for Publication, which studied several scenarios for mandating the use of eNotifications to the OJEU[93].

[93] See http://ec.europa.eu/internal_market/publicprocurement/docs/eprocurement/feasibility/enot-vol-1_en.pdf

6.1.2.2 Legal and policy challenges

With respect to the legal and policy challenges to the introduction of eNotifications, the main issue is to create a framework that ensures that there is a sufficiently common approach between eNotifications, and that such eNotifications are actually used in practice.

The Directives aim to address the common approach notably through:

- The definition of common thresholds above which standardised notices must be submitted at the EU level.
- Foreseeing the creation of standardised forms and the adoption of a standard vocabulary to be used in these forms; this also meant implementing the infrastructure to support an electronic dispatch of tender notices to TED (Tenders Electronic Daily) according to the format and procedures accessible at the SIMAP internet site.
- The introduction of the aforementioned 'equality of arms' rules, which ensure that separate publications relating to a procurement are not possible before the European notices are submitted. This way, all economic operators have equal (and equally timely) access to the key information related to the procurement.

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Usage of the standardised forms is mandatory above the EU thresholds, but the use of electronic means to communicate these standardised forms is not required. However, for so-called accelerated procedures, notices must be sent either by telefax or by electronic means, and incentives for the use of electronic means are provided in the Directives, specifically through the shortened publication delay (5 days instead of 12) and through the increased maximum permitted length of the notices (may surpass 650 words if eNotifications are used).

Thus, the Directives provide a soft stimulus to the use of eNotifications, but leave the final decision of using them to the Member States. In the sections below, we will assess whether or not this is sufficient to ensure effective uptake of eNotifications.

6.1.2.3 Technical and infrastructural challenges

It was already noted above that the eNotification phase is from a technical perspective less complicated than other eProcurement phases. This is due to the fact that it is a largely one way process: information is communicated by the contracting authority to potential economic operators, typically without any specific need for authentication or extensive security.

In that respect, the main challenge is the establishment of a common format for eNotifications, and a common infrastructure for creating and publishing such notifications via TED. As was noted above, the Directives already foresaw the establishment of common forms and the adoption (or rather update) of a common vocabulary, with an EU level infrastructure for submitting notices for publication in the OJEU being planned (via the eNotices site or via the eSenders service; see below for more details).

However, again Member States were not required to implement the national infrastructure for sending eNotifications for publication at the European level. Thus, we will need to assess to what extent the European infrastructure has been matched at the national level.

6.1.3 The 2004 status and vision of the Action Plan

6.1.3.1 2004 status

2004 Impact Assessment quoted above identified 36 public procurement systems across 16 of the (then) 25 Member States, of which 33 (or 92%) supported eNotification. However, it is important to acknowledge that the scope of these systems was significantly more limited than is expected under the Directives. The European legal framework prior to the 2004 Directives did not require (or even emphatically support) eNotifications, and their usage was not standardised to the same extent as is currently the case. More importantly, the usage of eNotifications to submit procurement notices for publication at the European level was not possible. Thus, when available, eNotification in 2004 mainly meant that procurement opportunities were published on specific portal sites, in a largely decentralised manner and without much coordination at the national or European level.

With respect to buyer's profiles, this was a new concept embraced by the Directives as an alternative to the publication of a prior information notice. In 2004, buyer's profiles were not yet used in practice, and 16 Member States reported that they expected that the profiles would be used by contracting authorities.

In summary, out of the 25 Member States, 9 did not have any eProcurement systems (and thus no eNotifications) at all. Of the remaining 16, most had implemented eNotification systems, but both implementation and take-up were fragmented.

Equally importantly, the possibility of using eNotifications to publish opportunities at the European level had only just been introduced by the Directives, and the infrastructure to use this opportunity (common forms, updated vocabulary and the eNotices site / eSenders service) was still largely missing. None the less, some Member States were already submitting electronic notices. Based on statistical data kindly provided by the European Publications Office[94], the use of electronic notices had already been developing favourably prior to the adoption of the Public Procurement Directives:

Year	total	struct	non-struct	email	fax	paper	eNotices	eSenders
2001	211.137	2.943	208.194	6.227	118.388	83.579	0	2.943
2002	238.964	7.402	231.562	32.327	117.009	82.226	0	7.402
2003	218.435	11.848	206.587	47.547	90.404	68.636	0	11.848
2004	209.194	16.504	192.690	62.304	79.652	50.734	0	16.504

Notification/eNotification uptake evolution between 2001-2004

[94] See http://publications.europa.eu/index_en.htm

The overview shows that in 2004, almost 8% of notices were received in a structured electronic format (using eSenders), with a further 30% sent via nonstructured e-mails (i.e. also eNotifications, but without using a common European structured format). Furthermore, growth since 2001 was certainly steady, with a more than fivefold increase over a period of four years. None the less, given that 92% of received notices were unstructured in 2004, there was certainly ample room for improvement.

The Action Plan would thus need to propose certain measures to ensure that the infrastructure required to use eNotification would become more widespread and would be more actively used in the Member States.

6.1.3.2 Vision of the Action Plan and indicators for success

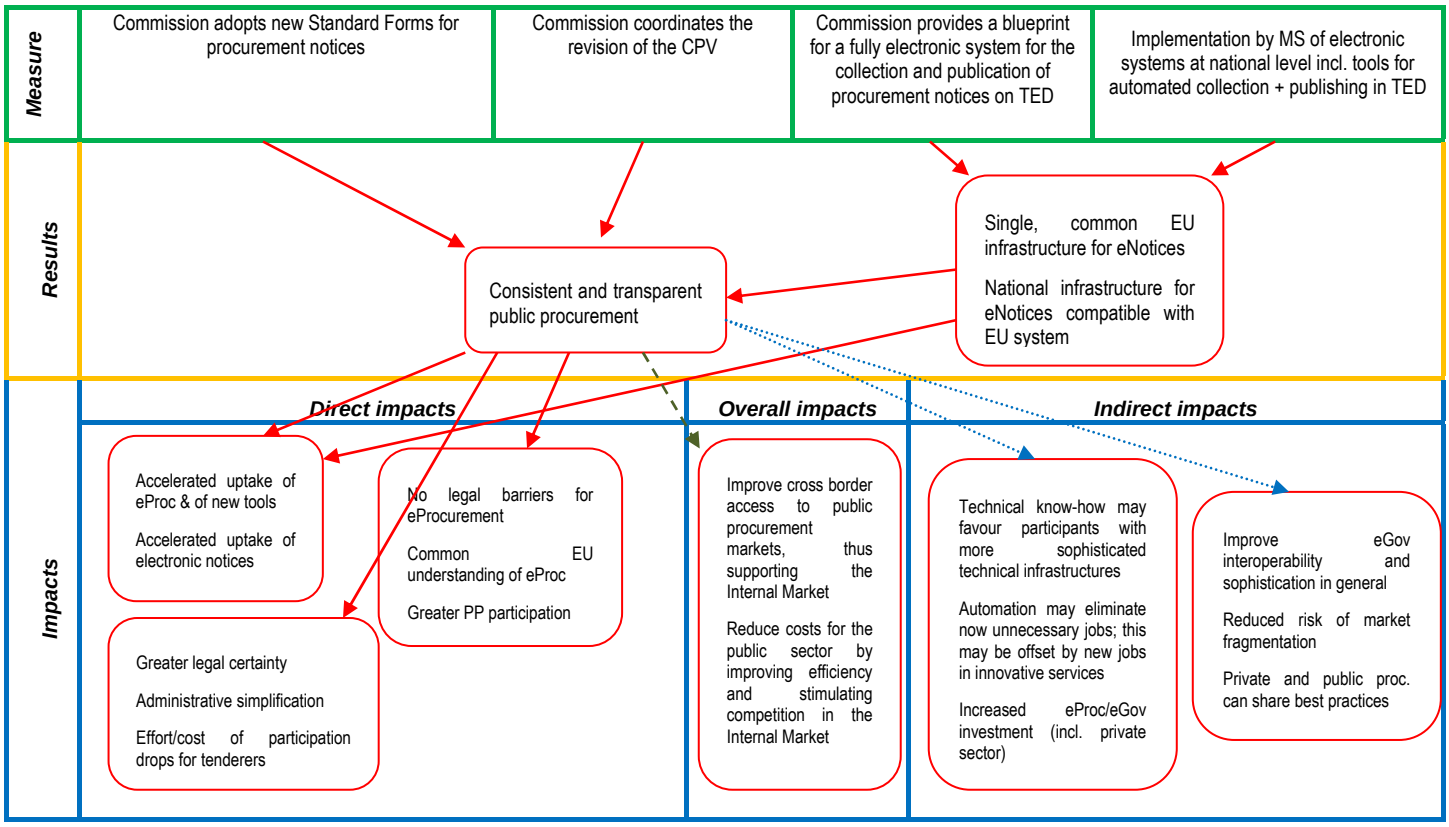
The measures proposed by the Action Plan with respect to eNotifications follow the pattern discussed more extensively above, by ensuring that the required infrastructure to use eNotifications is put in place, but leaving actual usage by the Member States as a voluntary action. It could indeed be argued that there was little reason to require the use of eNotifications: even in 2004, eNotifications were already used in 92% of the known eProcurement systems (albeit with little harmonisation between systems), and the Directives provided clear incentives for their usage in addition to the inherent advantages discussed above. It could thus be reasonably expected that eNotifications would increasingly be taken up by the Member States even in the absence of any external legal or policy requirement to do so.

This perspective is reflected in the relevant measures in the Action Plan, which are all grouped under the first objective ('Ensure a well functioning Internal Market in electronic public procurement'), and specifically under the heading 'Complete the legal framework by the appropriate basic tools':

Measure	*Targeted party*	*Nature of the measure*
The Commission adopts new Standard Forms	Commission	Obligation to establish common infrastructure
The Commission presents proposals for revising the CPV	Commission	Obligation to establish common infrastructure
Commission presents a blueprint for a fully electronic system for the collection and publication of procurement notices on TED	Commission	Obligation to establish common infrastructure
Member States implement fully electronic systems at national level including appropriate tools for automated collection and publishing in TED	Member States	Obligation to establish national infrastructure

Measures in the Action Plan related to notification/eNotification

The emphasis was thus strongly on creating the required infrastructure, both at the European and national level. The expected impacts of this approach were defined in the intervention logic description above:



On the basis of this graphic, several key indicators of the Action Plan's impact on eNotifications can be defined. Apart from the question of the actual execution of the measures, the most crucial and directly relevant indicator is obviously the uptake of electronic notices, both from the sender's perspective (how many notifications are sent electronically, as opposed to other means?) and from the economic operator's perspective (how often are the eNotifications actually consulted?).

Other indicators can also be used, such as an increase in public procurement participation in general (which could be a result of improvements in consistency and transparency), a decrease in the costs of organising procurements or participating in them (due to the greater ease of creating and understanding the standardised notices), or an increase in cross border procurements (due to the same forms being used across the EU). However, none of these is more suitable as an indicator of the Action Plan's impact on eNotifications, since each of them will also be influenced by other factors. Thus, the main question is whether or not Member States have indeed voluntarily taken up eNotifications, and to what extent the Action Plan played a role in this evolution.

6.1.4 Current status and evolution - matching with the Action Plan vision

6.1.4.1 Actions undertaken

Each of the measures prescribed by the Action Plan has been implemented in a more or less timely manner:

- The new Standard Forms were adopted through the Regulation on Revised Standard Forms of 7 October 2005, which streamlined the existing forms. These forms can be found on the SIMAP website[95].
- The Action Plan called upon the Commission to present proposals for revising the Common Procurement Vocabulary in 2006, to be based on the results of an ongoing review study. The measure was finalised through the adoption of a Regulation on a revised CPV of 28 November 2007 (Regulation (EC) No. 213/2008), which entered into force on 12 September 2008[96]. Correspondence tables between the new and old versions of the CPV have also been made available online[97].
- The Action Plan called upon the Commission to provide a blueprint for a fully electronic system for the collection and publication of procurement notices on TED by the end of 2006. The corresponding feasibility study was completed in July 2007 ('Mandatory electronic transmission of procurement notices for publication'), and published in three volumes:
    - Vol. I - Electronic transmission of public procurement notices for publication: http://ec.europa.eu/internal_market/publicprocurement/docs/eprocurement/feasibility/enot-vol-1_en.pdf
    - Vol. II – Country profiles: http://ec.europa.eu/internal_market/publicprocurement/docs/eprocurement/feasibility/enot-vol-2_en.pdf
    - Vol. III – Analytical framework: http://ec.europa.eu/internal_market/publicprocurement/docs/eprocurement/feasibility/enot-vol-3_en.pdf

  The main report presents recommendations and a roadmap for the introduction of a framework supporting the mandatory electronic transmission of procurement notices for publication. A “Light” and a “Sophisticated” scenario for mandatory eNotification are presented as guidelines and recommendations to be followed by each country.

    - The “Light scenario” aims to achieve greater efficiency in the submission of procurement notices with as few changes of the status quo as possible. It focuses on operational and organisational aspects of the eNotification process covering the data gathering, creation, verification, and transmission of procurement notices. The main objective is the establishment of a concrete and reasonable framework for each country that will simplify and modernise the eNotification process and mandate the full electronic transmission of notices to the OJS.

[95] See http://simap.europa.eu/buyer/forms-standard/index_en.htm

[96] See http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:074:0001:0375:EN:PDF

[97] See http://ec.europa.eu/internal_market/publicprocurement/eProcurement_en.htm#cpv

- The "Sophisticated scenario" aims for the development of a comprehensive ICT strategy (i.e. policy and regulation) to improve overall the ICT capacity, the efficiency and effectiveness of the eNotification process, as well as, to increase participation and competition of all interested parties. Thus the scenario takes eNotification one step further by applying advanced requirements in terms of technical and functional interoperability, security (authentication and encryption), and verification specifications.
- Following the scenario analysis, recommendations are elaborated along with relevant timeframes for the necessary preparatory actions EU and EEA Member States should undertake to mandate the electronic transmission of notices. A roadmap indicates the steps forward to realize both the Light and the Sophisticated scenario.

- Finally, the Action Plan called on Member States to implement fully electronic systems for the collection and publishing of eNotices in TED by the end of 2007. While the exclusive usage of eNotifications was not foreseen by the Public Procurement Directives, a gradual transition was none the less considered a favourable option in the Action Plan. For this reason, the Commission provides services for publication via the eNotices site[98], or via the eSenders service (provided that the form is sent by a registered OJS eSender).

Thus, at the European level the required infrastructure for the use of eNotifications was indeed provided as foreseen in the Action Plan. The take-up and usage of this infrastructure by the Member States will be examined below.

6.1.4.2 Evolution at the national level

Since usage of eNotifications was only explicitly made possible after the adoption of the 2004 Directives, evolution of eNotification uptake can be determined since that year. The main resource available to determine how many eNotifications are filed is TED statistical data provided by the Publications Office[99], since this provides an exact number of how many eNotifications are received each year.

It should be repeated that eNotifications can be submitted in structured or unstructured formats, and that the use of standard forms does not necessarily imply the use of electronic communications. In the sections below, we will focus mainly on statistics for structured eNotifications, since these are the only electronic communications which can be processed without human intervention, and which thus offer the greatest possible advantages (faster processing time, lower error rate).

Firstly, the number and type of notifications (electronic or otherwise) received via TED from 2001 to 2009 is described in the table below:

Year	total	struct	non-struct	email	fax	paper	eNotices	eSenders
2001	211.137	2.943	208.194	6.227	118.388	83.579	0	2.943
2002	238.964	7.402	231.562	32.327	117.009	82.226	0	7.402
2003	218.435	11.848	206.587	47.547	90.404	68.636	0	11.848
2004	209.194	16.504	192.690	62.304	79.652	50.734	0	16.504

[98] See http://simap.europa.eu/enotices/changeLanguage.do?language=en

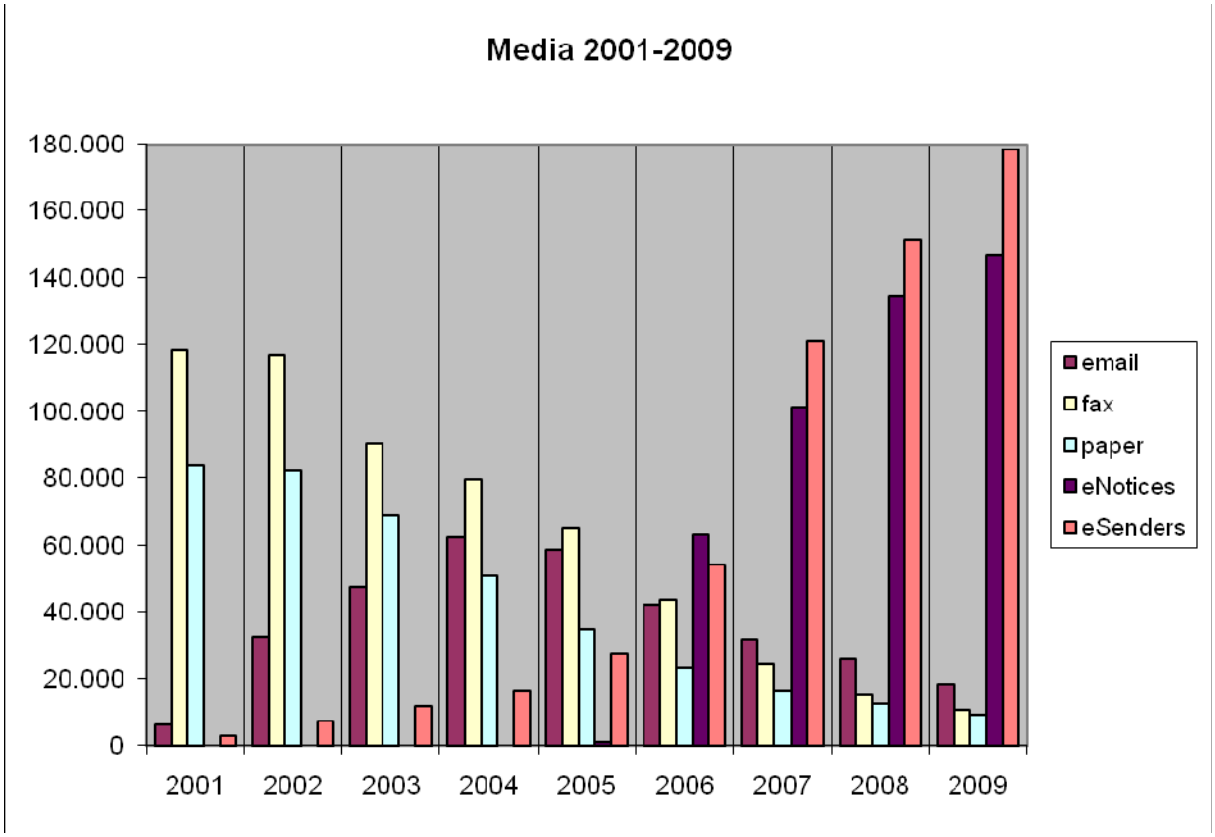
[99] See http://publications.europa.eu/

2005	187.045	28.656	158.389	58.601	65.002	34.786	1.187	27.469
2006	226.405	117.125	109.280	42.198	43.743	23.339	63.012	54.113
2007	294.740	222.132	72.608	31.818	24.509	16.281	101.099	121.033
2008	339.519	285.790	53.729	26.141	15.110	12.478	134.539	151.251
2009	363.230	324.845	38.385	18.158	10.906	9.321	146.449	178.396

Notification/eNotification uptake evolution between 2001-2009

The growth of structured electronic notices (eNotices and eSenders combined) since 2004 is remarkable: whereas structured notices accounted for only 8% of notices in 2004, this number grew to over 89% in 2009, with a further 5% being unstructured notices sent via e-mail, for a total of 94% of electronically sent notices. Paper and faxes decreased correspondingly. Thus, it is clear that eNotifications have shown remarkable progress since the adoption of the Action Plan.

The table above shows a graphic illustrating this trend:



Graphical Notification/eNotification uptake evolution between 2001-2009, kindly provided by OPOCE

The table below shows the percentage of eNotifications (eNotices and eSenders) versus other forms of notices, along with the evolution relative to the preceding year:

	2004	2005	2006	2007	2008	2009
% eNotifications	7,88%	15,27%	51,73%	75,36%	84,17%	89,43%
Increase vs preceding year	N.A.	+93,78%	+238,77%	+45,68%	+11,69%	+6,24%
% other	92,12%	84,73%	48,27%	24,64%	15,83%	10,57%

eNotification uptake evolution between 2004-2009

Thus, the trend is clear: eNotification uptake has indeed grown substantially over the past years, at a rate far exceeding the growth of notices in general. There is thus a clear and voluntary migration towards the uptake of eNotifications, as envisaged by the Action Plan. The highest growth was seen in 2006, which saw a massive increase of 238% in the number of structured eNotifications. This matches very well with the fact that the new forms were adopted on 7 October 2005, meaning that 2006 would naturally have been the first year in which systematic usage was possible.

Obviously, take-up of eNotification varies substantially depending on the source. Based on the data for 2009, the status was reported as follows:

Notices for the Year 2009	Qty			% of Totals			Format % Mix		
	Total	Structured	Non-Structured	Total	Structured	Non-Structured	Structured	Non-Structured	
EU Institutions	5.817	2.838	2.979	1,6%	0,9%	**7,9%**	48,8%	**51,2%**	100,0%
EU Member States	349.032	314.923	34.109	96,1%	96,8%	90,1%	90,2%	**9,8%**	100,0%
Non-EU Institutions & Countries	8.391	7.619	772	2,3%	2,3%	2,0%	90,8%	9,2%	100,0%
	363.240	325.380	37.860	100,0%	100,0%	100,0%	89,6%	10,4%	100,0%

Notification/eNotification uptake distribution in 2009 for EU Institutions, EU Member States, and Non-EU Institutions/Countries

Thus, take-up of structured notices (eNotices and eSenders) appears to be relatively equal between EU Member States on the one hand, and Non-EU Institutions and countries on the other, which rate at respectively 90,2% and 90,8% of submitted notices.

Looking specifically at the breakdown per Member State, the figures below were reported for 2009. Countries which were reported as having over 95,2% eNotifications (more than 5% over the Member State average) were marked in green; whereas those with less than 85,2% (more than 5% below the average) were marked in red.

Notices for the Year 2009	Qty			% of Totals			Format % Mix		
	Total	Structured	Non-Structured	Total	Structured	Non-Structured	Structured	Non-Structured	
Austria	7067	6699	368	2,0%	2,1%	1,1%	94,8%	5,2%	100,0%
Belgium	9049	7110	1939	2,6%	2,3%	5,7%	78,6%	21,4%	100,0%
Bulgaria	4301	4136	165	1,2%	1,3%	0,5%	96,2%	3,8%	100,0%
Cyprus	1050	968	82	0,3%	0,3%	0,2%	92,2%	7,8%	100,0%
Czech Republic	8551	8413	138	2,4%	2,7%	0,4%	98,4%	1,6%	100,0%
Denmark	4161	3954	207	1,2%	1,3%	0,6%	95,0%	5,0%	100,0%
Estonia	1334	146	1188	0,4%	0,0%	3,5%	10,9%	**89,1%**	100,0%
Finland	5941	5733	208	1,7%	1,8%	0,6%	96,5%	3,5%	100,0%
France	88427	86228	2199	25,3%	27,4%	6,4%	97,5%	2,5%	100,0%
Germany	44020	33893	10127	12,6%	10,8%	29,7%	77,0%	23,0%	100,0%
Greece	5723	3801	1922	1,6%	1,2%	5,6%	66,4%	33,6%	100,0%
Hungary	6393	4878	1515	1,8%	1,5%	4,4%	76,3%	23,7%	100,0%
Ireland	2645	2434	211	0,8%	0,8%	0,6%	92,0%	8,0%	100,0%
Italy	21071	19151	1920	6,0%	6,1%	5,6%	90,9%	9,1%	100,0%
Latvia	1821	26	1795	0,5%	0,0%	5,3%	1,4%	**98,6%**	100,0%
Lithuania	3365	3360	5	1,0%	1,1%	0,0%	99,9%	0,1%	100,0%
Luxembourg	833	781	52	0,2%	0,2%	0,2%	93,8%	6,2%	100,0%
Malta	458	456	2	0,1%	0,1%	0,0%	99,6%	0,4%	100,0%
Netherlands	9769	8574	1195	2,8%	2,7%	3,5%	87,8%	12,2%	100,0%
Poland	41130	39115	2015	11,8%	12,4%	5,9%	95,1%	4,9%	100,0%
Portugal	3009	2646	363	0,9%	0,8%	1,1%	87,9%	12,1%	100,0%
Romania	10638	10631	7	3,0%	3,4%	0,0%	99,9%	0,1%	100,0%
Slovakia	2768	2629	139	0,8%	0,8%	0,4%	95,0%	5,0%	100,0%
Slovenia	3672	3667	5	1,1%	1,2%	0,0%	99,9%	0,1%	100,0%
Spain	26855	23218	3637	7,7%	7,4%	10,7%	86,5%	13,5%	100,0%
Sweden	8224	7495	729	2,4%	2,4%	2,1%	91,1%	8,9%	100,0%
United KIngdom	26757	24781	1976	7,7%	7,9%	5,8%	92,6%	7,4%	100,0%
All	349032	314923	34109	100,0%	100,0%	100,0%	90,2%	9,8%	100,0%

Structured/unstructured notice uptake within the Member States in 2009

The overview above shows 8 leading countries (over 95,2%). Remarkably, only 2 of these are part of the EU-15 (Finland and France). In fact, all countries with a near-100% status (Lithuania, Malta, Romania and Slovenia all submit more than 99,5% of their notices electronically) joined the EU in 2004. The lowest uptake ratings were reported in Latvia and Estonia, both of which fell significantly short of 15%. However, this was a temporary situation, due to the fact that no eSenders were available in these countries until the end of 2009. Estonia (via the Ministry of Finance) now has an eSender that

provides a central public procurement point, and in Latvia an eSender (the Procurement monitoring bureau of Latvia) was also recently qualified. The most recent statistics for 2010 point to a significant increase of the use of structured notices, namely to 100% for Estonia and 70% for Latvia[100].

As indicated in the graphs above, eNotifications can be sent via online forms (via http://simap.europa.eu/enotices/changeLanguage.do?language=en) or via the eSenders platform, which relies on registered service providers that have implemented standard XML forms in their software. The online forms are free, and are typically used by contracting authorities which send only a limited amount of notices each year, whereas the eSenders platform is oriented more towards larger users. The availability of eSenders is therefore a secondary indicator of the uptake of eNotifications. The list of eSenders[101] on 20 January 2010 contained 60 service providers. This represents an increase of 4 against the 56 eSenders available in 2008, and of 12 versus the 48 available in 2007. More importantly, at least one eSender is available for each Member State, EEA country and Candidate Country. Thus, the infrastructural picture is relatively comprehensive.

6.1.4.3 Matching with the Action Plan

It was already noted above that the Action Plan did not mandate the use of eNotifications, but rather required that the necessary infrastructure was put in place to allow Member States to use them effectively.

This appears to have occurred, through the establishment of common forms, the update of the CPV, and the eNotices site / eSenders service, which are available in all Member States, EEA countries and candidate countries. The result has been a continuously increasing uptake of eNotifications in practice, as the data above shows. In that respect, the developments at the national level appear to match the vision of the Action Plan.

Two cautionary notes should be added, however. Firstly, the overview above showed that most of the shift to eNotifications occurred in 2004-2007 (from 7,88% of all notices to 75,36%), but that the shift is continuously slowing down since 2006. While this is logical to a certain extent, the 2008-2009 shift amounted to an increase of 6,24%, which was only about half as big as the preceding year. If that trend was to hold (i.e. a 50% smaller shift each year), uptake of eNotifications would halt at near 95%, reaching this peak around 2012-2013.

	2004	2005	2006	2007	2008	2009
% eNotifications	7,88%	15,27%	51,73%	75,36%	84,17%	89,43%
Increase vs preceding year	N.A.	+93,78%	+238,77%	+45,68%	+11,69%	+6,24%
% other	92,12%	84,73%	48,27%	24,64%	15,83%	10,57%

eNotification uptake evolution between 2004-2009

[100] Information kindly provided via e-mail by the OP (formerly OPOCE).

[101] See http://simap.europa.eu/ojs_esenders/list_of_ojs_esenders/index_en.htm, last checked on 18 February 2010.

A second point is that the situation in practice varies quite substantially from Member State to Member State, with several countries reaching a near-100% eNotification status due to the introduction of policies or laws requiring the use of eNotifications. Via the Ernst & Young survey, an obligation to use eNotifications was reported to exist in 8 countries, notably Bulgaria, Estonia, France, Hungary, Italy, Lithuania, Luxembourg and Norway. Similar plans were reported to exist in Belgium[102], Cyprus, Greece, Ireland, The Netherlands and Slovakia. The table above shows that such obligations on paper do not always translate to comprehensive uptake in practice, and it is clear that the distribution of eNotification uptake is not homogeneous across the Member States. Indeed, several large procurers that submit around 10.000 notices or more annually do not yet meet the Member State average of 90,2%, including Belgium, Germany, Spain, and the Netherlands. There is thus still significant margin for improvement.

6.1.5 Remaining gaps/barriers

The overview above shows that there do not appear to be any significant challenges left that impede the use of eNotifications, either from a technical/infrastructural or legal perspective. However, examining the classification of gaps and barriers proposed above, a few cautionary notes can still be added:

Possible gap / barrier	Applicable to this phase?	If yes, explain
Lack of available infrastructure	No	/
Interoperability	No	/
Legal uncertainty	No	/
Trustworthiness	No	/
Accessibility	No	/
Economic viability and use cases	No	/
Transparency	Yes	Use of eNotifications is only mandatory above the EU thresholds. There is very little visibility on what happens for procurements below these thresholds, i.e. whether eNotification is also used systematically for these procurements.
Market challenges	No	/
Distribution of benefits	No	/

Gaps and barriers with respect to eNotifications

Thus, it should be acknowledged that the data set examined in this evaluation is limited, and does not cover a large part (approximately 81,85%, according to 2008 Eurostat data[103]) of the public procurement budgets in the Member States which do not meet European thresholds.

[102] Presently this obligation depends from region to region, but a generalised obligation is planned for 2011.

[103] Procurement data classified as 'Public procurement advertised in the Official Journal (as a % of total public procurement and as a % of GDP)', searchable via http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database

None the less, it seems that the main challenge is to ensure that contracting authorities migrate more systematically to the electronic solutions available to them, i.e. to overcome traditional practices and institutional inertia. We have noted above that several countries are attempting to address this by mandating the use of eNotifications. While this was not the option envisaged by the Directives or the Action Plan, this indeed seems to be a sensible and relatively cost-effective way of eliminating legacy problems and realising some of the key opportunities identified above.

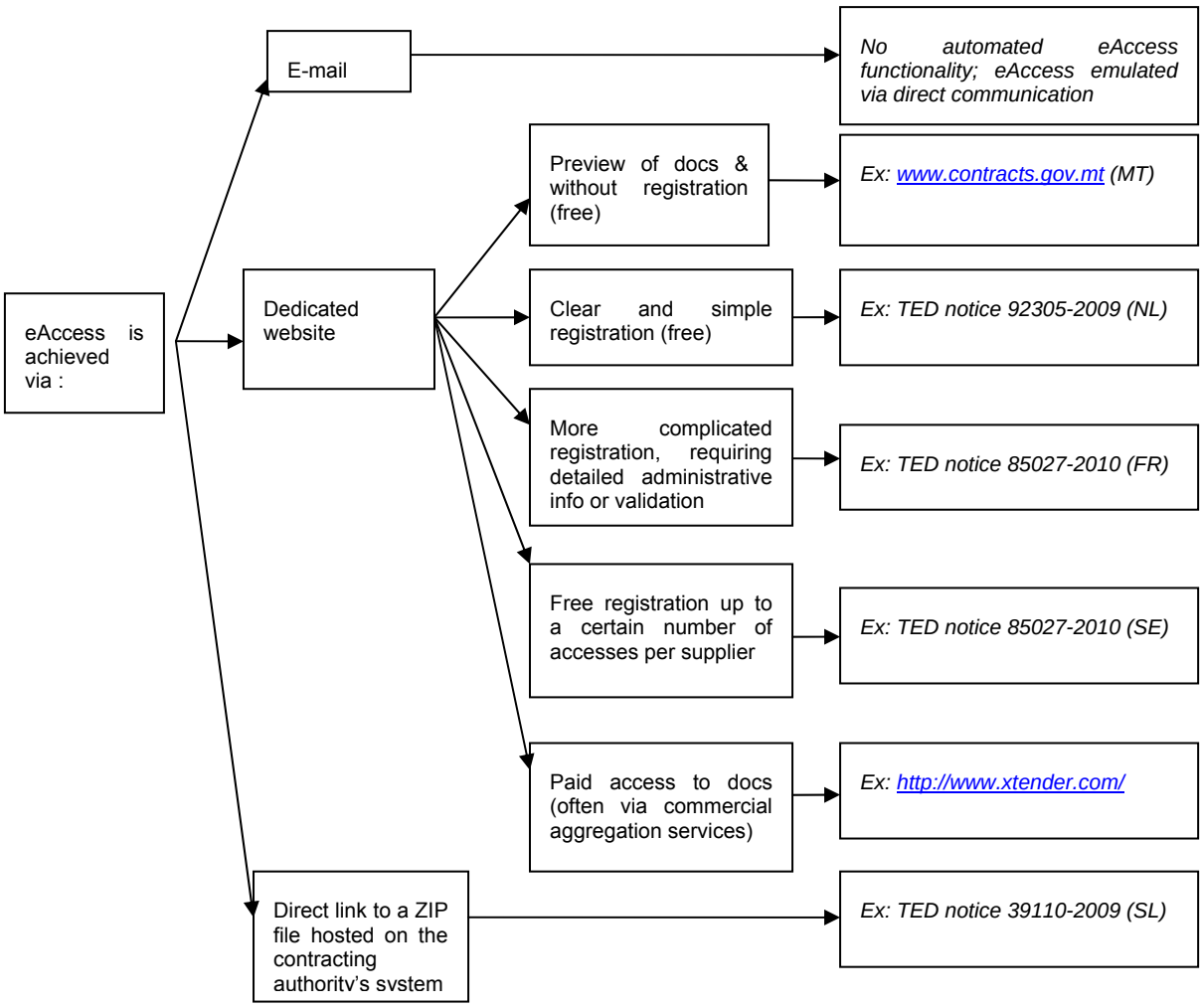
More directly with respect to the impact of the Action Plan, it seems that it has been effective in establishing the required infrastructure at the European level and (insofar as needed) at the national level via the eNotices/eSenders platform, which was a prerequisite to accelerate the uptake of eProcurement in this area. To the extent that the ambition of the Action Plan was to enable and stimulate (but not mandate) the use of eNotifications, the proposed measures appear to have been effective in stimulating uptake. The main future issue is whether or not a greater commitment can be required from the Member States, to ensure that eNotification uptake becomes more equal across the EU.

6.2 eAccess to tender documents

6.2.1 Definition and scope

Fair and equal access to the necessary information to participate in a public procurement opportunity is a prerequisite for effective competition and for an equitable outcome. In general terms, access to tender documents refers to the ability to obtain (copies of) any tender documents and specifications that describe the scope and requirements of a specific procurement opportunity, including any further support offered to economic operators for the preparation of their offers, notably in the form of clarifications from the contracting authority and/or questions and answers. In eProcurements, such information will of course be made available in an electronic format, typically by publishing the relevant information on one or more website(s) or by sending it via e-mail.

The following diagram presents the main conceptual approaches to providing eAccess functionalities:



Conceptual overview of eNotification approaches, developed by DG Markt

In the Directives, access to essential tender documents is addressed in a number of areas, including notably:

- Via the rules of procedure, in articles 28 and following of Directive 2004/18/EC and articles 40 and following of Directive 2004/17/EC. In each of the procedures (open, restricted and negotiated procedures and competitive dialogue) equality of arms between eligible economic operators is emphasised, including the obligation not to "provide information in a discriminatory manner which may give some tenderers an advantage over others" (e.g. in article 29.3 of Directive 2004/18/EC, with respect to competitive dialogue).
- Via the rules on advertising and transparency, in articles 35 and following of Directive 2004/18/EC and articles 63 and following of Directive 2004/17/EC. These rules emphasise the importance of notices in ensuring transparency, as discussed above, but also provide guidance with respect to information content and means of transmission. Specifically, the Directives specify which information should be included with invitations to tender, namely a copy of the specifications or of the descriptive document and any supporting documents, or a reference (e.g. a website URL) to these documents when they are made directly available by electronic means. If an entity other than the contracting authority has these documents, the invitation will state the address from which they may be requested and, if appropriate, the deadline for requesting such documents, and the sum payable for obtaining them and any payment procedures.
- Via the rules applicable to communication, in articles 42 and following of Directive 2004/18/EC and articles 48 and following of Directive 2004/17/EC . These note that the exchanges above may be done by post, by fax, by electronic means, by telephone, or by a combination of those means, according to the choice of the contracting authority (with specific conditions applying in each case). Whatever means is chosen, they must be generally available and thus not restrict economic operators' access to the tendering procedure. Tools for communicating by electronic means must in addition be non-discriminatory, generally available and interoperable with the information and communication technology products in general use.

Rules with respect to access to tender documents thus emphasise the right to equal access between all eligible tenderers. Typically, this means that such documents can be made generally (publicly) available, although in some cases certain documentation can be restricted to specific tenderers, specifically in restricted and negotiated procedures and competitive dialogue. This means that this phase is generally unilateral (involving only communication from contracting authority to tenderer, but not vice versa), which means it is also generally relatively simple to implement in an electronic context with fairly little barriers, as it usually implies only that the relevant documentation is made publicly available via a publicly accessible website.

6.2.2 Main Opportunities and Challenges

6.2.2.1 eProcurement opportunities

In the preceding section on electronic notices, we already discussed the advantages and opportunities that announcing public procurements in a public procurement via electronic means could bring. These same opportunities also apply to eAccess over paper access, including:

- Improved transparency through more systematic access modalities. The usage of electronic means results in more homogeneous dissemination of information, which is less error prone and more recognisable and therefore more easily accessible to economic operators.
- Easier and more cost efficient dissemination, due to the ease with which electronic documents can be copied and spread around (including via specialised or personalised websites or publications).
- Wider audience: in addition to being easier to disseminate, electronic documents are also easier to search, which will make it easier for economic operators to find relevant procurement opportunities.
- Multi-modal communication options: electronic communication may be seen as more convenient and more accessible by some economic operators. This applies even more to tender documents than to notices: while notices may be relatively summary, tender documents can easily number in the dozens or hundreds of pages. In an electronic format, these are much easier and cheaper to obtain, copy and disseminate.
- More effective targeting: using electronic means, it can become a lot easier for economic operators to register their personal profile and preferences, and keep track of only those procurement opportunities which are relevant to their interests and competences.

6.2.2.2 eProcurement challenges

Challenges to the transition from paper access to eAccess are relatively limited, both from a legal/policy perspective and from a technical perspective. Since the main objective is to ensure that all eligible economic operators can access the relevant documents on equal terms, the challenges relate mainly to avoiding the creation of specific barriers:

- From a policy perspective, it is advisable that relevant documents are made available in a homogeneous way (e.g. via portal sites, using standardised templates), since this will make it easier for economic operators to find and use the documents. From a cross border perspective, language issues will also play a key role: while national language regulations will play a decisive role in this respect, Member States should recognise that documentation published only in the national language(s) may limit the number of economic operators who will be able to participate in a procurement. This is strictly speaking not an eProcurement issue (language barriers also present themselves in paper procurements), but it should be recognised that one of the key advantages of eProcurement is the expansion of the pool of eligible economic operators to an international level. Language barriers are thus a more limiting factor in eProcurements than in paper procurements.
- In addition, to the extent that tender documents are made available via public procurement websites (including procurement portal sites), care should be taken that any prior registration requirements are used judiciously. In principle, there should be no need for economic operators to register a user account on a website before being able to access such documents. When Member States or economic operators none the less deem this advisable, they should ensure that registration is easily available and possible for all eligible economic operators (i.e. use of national register numbers or national eSignature solutions should not be required), as this might violate the equality of arms rules of the Directives.
- From a technical perspective, the main requirement is the Directives' rule of using means for electronic communication which must be generally available and thus not restrict economic operators' access to the tendering procedure. This impacts technical choices such as the

choice of a suitable file format to disseminate information in. Using standardised file formats (including specifically also open file formats) is one way of reaching this objective of general availability.

Generally though, the eAccess phase is less complicated than other eProcurement phases, due to its unilateral character. Thus, relatively few difficulties are to be expected.

6.2.3 The 2004 status and vision of the Action Plan

6.2.3.1 2004 status

The 2004 Impact Assessment reported that among the 36 identified procurement systems, the publication of tenders was supported in 17 (47%) of them[104]. This was the second highest ranked supported functionality in the assessment (after eNotification, which was available in 92%). The report also noted the low costs involved in implementing this phase (mainly requiring the adjustment and maintenance of web pages) and the medium impact benefits, namely the quick publication of tenders, and the reduction of administrative costs for buyers and suppliers.

Thus, by the standards of 2004, eAccess was already relatively widespread and not considered to be an overly complicated phase to implement.

6.2.3.2 Vision of the Action Plan and indicators for success

Given this status, it is not particularly surprising that no specific section or measure of the Action Plan was dedicated to eAccess as an individual phase or functionality. Rather, access to eProcurements is generally treated as an aspect of the general measures aimed at eliminating interoperability barriers and increasing the competitiveness of public procurement markets across the EU.

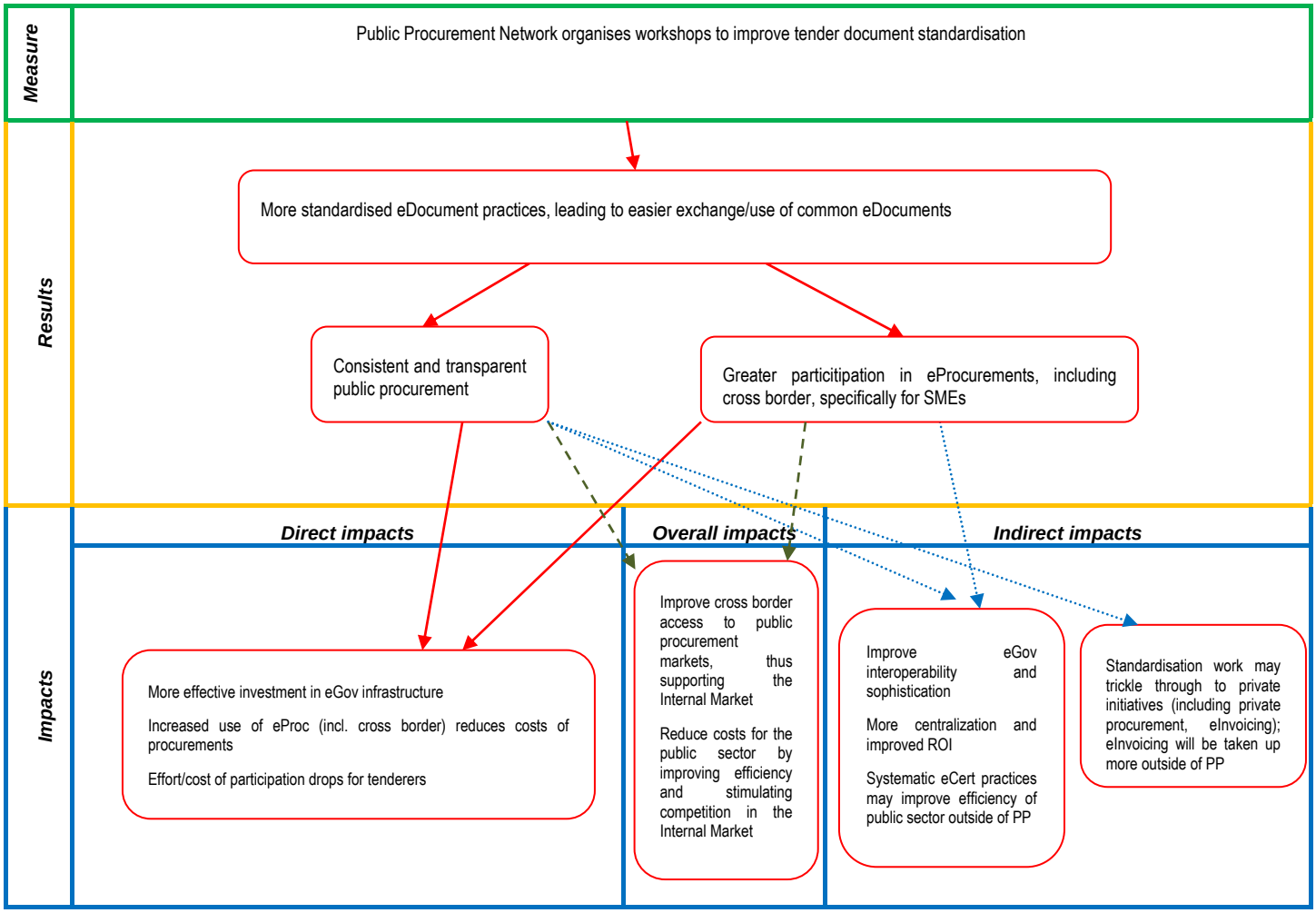
Apart from measures examined elsewhere, one specific measure is relatively directly linked to the issue of eAccess:

Measure	*Targeted party*	*Nature of the measure*
Public Procurement Network organises workshops to improve tender document standardisation	Public Procurement Network	Improving knowledge

Measures in the Action Plan related to eAccess

[104] See http://ec.europa.eu/internal_market/publicprocurement/docs/eprocurement/2004-12-impact-external-vol1_en.pdf

Thus, via the Public Procurement Network (a contact forum between national public procurement expert officials[105]), the Action Plan aimed to disseminate good practices with respect to tender documents, which was expected to have a positive influence on (inter alia) eAccess.



Globally, the main indicator of success is the extent to which tender documents can be easily accessed, and the impact that the Action Plan has had on this issue.

[105] See http://www.publicprocurementnetwork.org/

6.2.4 Current status and evolution - matching with the Action Plan vision

6.2.4.1 Actions undertaken

No specific results of this work could be identified; thus, it is clear that national evolutions are not linked on this point to the Action Plan.

6.2.4.2 Evolution at the national level

Initial indicator - Ernst & Young survey

Even in 2004, no serious issues were reported in implementing eAccess as a phase in eProcurement systems; thus, few issues can be expected. A first indicator can be found in the Ernst & Young online survey conducted during 2008-2009 as a precursor to the present report. As a part of this survey, key stakeholders were asked about their usage of eProcurement, and their perceptions of barriers and benefits, including in relation to specific phases. In the sections below, we will examine the replies with respect to eAccess, as received from contracting authorities, central purchasing bodies, and economic operators themselves.

Replies received from contracting authorities

Contracting authorities were asked directly whether they presently used eAccess, whether this was mandatory, and whether they planned to use it in the future. The following replies were received (most common answer indicated in green):

For the following phases and tools									
	Do you use?			Is it mandatory?			Do you plan to use in the future?		
	Yes	No	no reply	Yes	No	no reply	Yes	No	no reply
eAccess to tender documents	21%	18%	61%	8%	21%	71%	27%	2%	72%
	44	38	129	17	44	150	56	4	151

Overview of eAccess uptake as reported by contracting authorities

Most contracting authorities (61%) did not respond. Of those that did reply, eAccess showed little usage (21% of all replies, or 46% of those that did reply). This seems to be a very low rating, given that eAccess is one of the first and most basic steps of eProcurement. The number is however also virtually identical to the 2004 rating (47%), which can be considered an indication that most contracting authorities simply still do not yet use eProcurement to a significant extent in practice, not even for simple phases such as eAccess.

Replies received from central purchasing bodies

Central purchasing bodies (CPBs) provide part of the eProcurement infrastructure to contracting authorities, and can therefore be expected to have a more comprehensive view on uptake and on the principal challenges. Given the relative ease with which eAccess can be implemented and the importance of this phase to CPBs, a significantly higher uptake rating can be expected.

When asked how often contracting authorities use certain phases and tools for above EU threshold contracts, the following replies were given (16 responses received in total; most common answer indicated in green):

	Don't know	Frequently (30-59%)	Most used (>60%)	Never	Occasionally (<29%)
eAccess to tender documents	2	2	9	1	2

Overview of eAccess uptake as reported by CPBs above EU thresholds

While the number of responses is of course very limited, this confirms the importance of eAccess as a service largely used.

For below EU threshold contracts, the situation was mostly comparable.

	Don't know	Frequently (30-59%)	Most used (>60%)	Never	Occasionally (<29%)
eAccess to tender documents	3	1	7	2	1

Overview of eAccess uptake as reported by CPBs below EU thresholds

Replies received from economic operators

Finally, economic operators were also consulted in the survey, which offers a way of measuring the take-up side of eProcurement (as opposed to the supply side, i.e. usage offered by the contracting authorities). The central question of course relation to the usage of specific procedures and tools, resulting in the following overview for eAccess:

For above EU thresholds contracts						For below EU thresholds contracts					
Never	Occasionally (29% or less)	Frequently (between 30 and 59%)	Most used (over 60%)	Don't know	(no answer)	Never	Occasionally (29% or less)	Frequently (between 30 and 59%)	Most used (over 60%)	Don't know	(no answer)
5,88%	10,29%	11,76%	20,59%	1,47%	50,00%	7,46%	13,43%	7,46%	16,42%	2,99%	52,24%

Overview of eAccess uptake as reported by economic operators above and below EU thresholds

Again, eAccess is identified as the most popular phase, albeit with still relatively low uptake figures. The low response rate and possibly low participation in eProcurement in general can be considered likely explanations for the low figures, rather than any dissatisfaction about the utility or benefits of eAccess in general. Indeed, when queried about this exact issue ('What is your opinion on eAccess?'), 96% of responded replied that they found it useful.

Country reports

The relatively weak figures reported above could be an indication of low eAccess usage, but also of low eAccess availability. In other words, they could be explained either by the fact that the required infrastructure does not exist (low availability: it is not possible to access the relevant documents electronically) or that the infrastructure does exist but is not used very systematically yet. The fact that eAccess is identified as the most used phase by CPBs seems to point to the second explanation: the infrastructure is available but not yet used at satisfactory levels yet.

To confirm this hypothesis, we can examine the country profiles drafted and validated in the course of this study, specifically to determine how many of the 32 examined countries have established one or more platforms supporting eAccess as a phase. The expectation would be that this rating would be substantially higher than the 47% reported in 2004, which would be a more effective indicator of progress than the subjective appreciations above.

Indeed, when examining the country profiles, all countries which identify an operational eProcurement platform indicate that eAccess is one of the supported phases. Thus, it seems that this phase has reached near universal availability, being offered even in countries where eSubmission is not yet available at the operational stage, with the sole exceptions being countries where no advanced operational eProcurement infrastructure could yet be identified (notably Greece, Iceland and Liechtenstein). Even in those countries, it should be noted that it is possible for contracting authorities to publish the relevant documents directly on their websites.

Mapping this impression to the overview of conceptual eAccess approaches included above, it seems that the use of dedicated websites has become the primary approach for implementing eAccess functionalities, as such websites have been identified in 26 out of 27 Member States (with Greece being the only exception). In all cases, free websites were available, but it should be noted that in a number of countries with strong public/private sector collaboration, fee based websites were also available. This was noted to be the case in all Scandinavian Member States (Denmark, Finland, Sweden), the Baltic countries (Estonia, Latvia, Lithuania), Germany, Poland, Portugal and the UK, as well as those with more decentralised procurement markets, such as Austria and France. In all likelihood, the number of countries with commercial procurement aggregators is bigger in reality, but the collected country reports only refer to commercial platforms if these are considered a key part of national public procurement strategies.

6.2.4.3 Matching with the Action Plan

Given that eAccess availability seems to be fairly universal and that no clear barriers to usage could be identified, the general vision of the Action Plan ("any business in Europe with a PC and an internet connection can participate in a public purchase conducted electronically", as stated on p. 10 of the Commission Staff Working Document annexed to the Action Plan) appears to have been achieved

with respect to this phase. The critical point however remains uptake; replies from the Ernst & Young survey seem to indicate that the available infrastructure is not yet used at sufficient levels in practice.

6.2.5 Remaining gaps/barriers

No clear challenge to the use of eAccess has been reported or identified; however, based on the standard classification of gaps and barrier proposes above, a few conceptual weaknesses can still be identified:

Possible gap / barrier	Applicable to this phase?	If yes, explain
Lack of available infrastructure	No	/
Interoperability	No	/
Legal uncertainty	No	/
Trustworthiness	No	/
Accessibility	Yes	Apart from practical language barriers, it was observed that several platforms require prior registration before allowing economic operators to search for procurement opportunities. While user profiles can be used to improve accessibility, there doesn't seem to be a benefit to making this process mandatory.
Economic viability and use cases	No	/
Transparency	Yes	There is very little visibility on how systematically eAccess is being used, given that the concept is so broad. While virtually all eProcurement systems examined in the framework of the evaluation support eAccess, eAccess may also simply occur directly via publication on the websites of contracting authorities. Offering such additional venues of visibility is a good practice, but the effectiveness of this approach is impossible to determine.
Market challenges	No	/
Distribution of benefits	No	/

Gaps and barriers with respect to eAccess

eAccess appears to be an area where the natural benefits of eProcurement over paper procurements are likely to result in gradual further uptake, even in the absence of explicit further policy action.

6.3 eSubmission

6.3.1 Definition and scope

Having been made aware of a procurement opportunity (eNotification) and having obtained the applicable documentation (eAccess), the next pre-award procurement phase is eSubmission, defined above quite simply as the submission of proposals online, i.e. in an electronic format. In practical terms, the complexity of this process can vary substantially, depending on the modalities used in the eProcurement system:

- A very basic example would be the mere sending of an e-mail containing an offer to the contracting authority, in a signed or unsigned form. Such pragmatic approaches can be found e.g. in Estonia, where a well developed generic eSignature platform is available that can be used for public procurement purposes as well[106].
- A variation on this approach would be the uploading of an offer (e.g. a PDF file) via an eProcurement platform. Depending on the platform, the PDF file could be unsigned, or require that the PDF file is signed prior to submitting it (i.e. signed locally on the economic operator's computer), or that a signature is applied as a part of the eSubmission process (i.e. the signature is generated during the uploading process using small applications integrated into the eProcurement environment). This approach is used e.g. on the Cypriot eProcurement portal[107].
- More advanced approaches might require the economic operator to upload an offer, but also to fill out certain standardised forms and declarations (e.g. an identification form, a financial information form, a declaration of compliance with any applicable requirements, etc.). In this case, the non-standardised offer is complemented by standardised documents, which will make it easier for the contracting authority receiving the offer to verify and compare any offers received. Depending on the eProcurement platform being used, such forms might be available for downloading (e.g. in PDF or Word format) so that they can be filled out locally; or it might be possible to fill them out online using interactive forms; and signatures may or may not be required. An example of this can be found in the Online Pre-Qualification Questionnaire used by the Irish eTenders platform[108].
- Finally, some eSubmission modules may offer advanced offer preparation support, in which extensive guidance is offered to the economic operators as to how his offer should be structured, what information it should contain, and which additional documents need to be attached as well. The French *Place de Marché Interministérielle* uses this approach[109].

[106] See DIGIDOC, http://www.sk.ee/pages.php/020305010101

[107] See the video demonstration on https://www.eprocurement.gov.cy/ceproc/walkthrough/en/EO_9.htm

[108] See http://www.millstream.eu/guides/en-gb/Purchaser_PQQ.pdf

[109] See the user guide at http://mpe3-docs.local-trust.com/guide/pmi/GuideUtilisateurEntreprise.zip (French only).

Thus, various forms of assistance/support may be made available to the economic operator, with the main common requirement being that an offer is ultimately submitted electronically to the contracting authority.

The eSubmission phase is substantially more complex than the first two phases discussed above (eNotification and eAccess), due to the fact that this is the stage in which the procurement process becomes a bilateral matter: rather than information merely being delivered to the economic operators (as in the earlier two phases), the economic operators will now need to be able to respond. This presents a number of highly complex challenges, relating specifically to the need to ensure the authenticity and integrity of the offers, the multitude of information that needs to be integrated, the complex procedures in which eSubmission can play a role (including eAuctions and DPS), and obviously interoperability challenges. These will be discussed in greater detail in the sections below.

The Directives address eSubmission notably in the rules applicable to communication (articles 42 and 48 of Directives 2004/18/EC and 2004/17/EC respectively), of which the relevant provisions can be summarised as follows:

1. All communication and information exchange may be by post, by fax, by electronic means in accordance with paragraphs 4 and 5, by telephone as referred to in paragraph 6, or by a combination of those means, according to the choice of the contracting authority.
2. The means of communication chosen must be generally available and thus not restrict economic operators' access to the tendering procedure.
3. Communication and the exchange and storage of information shall be carried out in such a way as to ensure that the integrity of data and the confidentiality of tenders and requests to participate are preserved, and that the contracting authorities examine the content of tenders and requests to participate only after the time limit set for submitting them has expired.
4. The tools to be used for communicating by electronic means, as well as their technical characteristics, must be non-discriminatory, generally available and interoperable with the information and communication technology products in general use.
5. The following rules are applicable to devices for the electronic transmission and receipt of tenders and to devices for the electronic receipt of requests to participate:

   (a) information regarding the specifications necessary for the electronic submission of tenders and requests to participate, including encryption, shall be available to interested parties. Moreover, the devices for the electronic receipt of tenders and requests to participate shall conform to the requirements specified in Annex to the Directive;

   (b) Member States may, in compliance with Article 5 of Directive 1999/93/EC, require that electronic tenders be accompanied by an advanced electronic signature in conformity with paragraph 1 thereof;

   (c) Member States may introduce or maintain voluntary accreditation schemes aiming at enhanced levels of certification service provision for these devices;

   (d) tenderers or candidates shall undertake to submit, before expiry of the time limit laid down for submission of tenders or requests to participate, the documents, certificates and declarations referred to in Articles 45 to 50 and Article 52 if they do not exist in electronic format.

Thus, the Directives do not introduce a universal right or obligation to eSubmission, since this possibility is made dependent on the contracting authorities' choice (par.1). As we will see below, some Member States have in fact introduced eSubmission obligations in certain cases.

Equally importantly, the Directives emphasise that the chosen means and tools of electronic communication should not result in the introduction of barriers to participation in the tendering procedure (par.2 and 4), which was also identified as one of the driving concerns behind the Action Plan. The integrity and confidentiality of tenders should be preserved, and they should not be made accessible before applicable deadlines have been submitted (par.3). Thus, the technical characteristics of the chosen means and tools should support the operational needs of the eProcurement process.

Par. 5 finally refers to the "devices for the electronic transmission and receipt of tenders and to devices for the electronic receipt of requests to participate", i.e. websites, hardware and software used for these functions. The recitals of both Directives (notably recital 37 and 48 of the respective Directives) already noted that "the public procurement procedures and the rules applicable to service contests require a level of security and confidentiality higher than that required by [the eSignatures and eCommerce Directives[110]]. Accordingly, the devices for the electronic receipt of offers, requests to participate and plans and projects should comply with specific additional requirements." Thus, a conscious choice was made to set the bar at a higher level for eProcurement devices.

This was done specifically through the subsections of par.5, which refer first of all to a general transparency obligation (any information on the specifications for the devices must be made accessible to all interested parties, and to a series of functional requirements for devices specified in Annex X of Directive 2004/18/EC and Annex XXIV of 2004/17/EC. These requirements are formulated at a fairly high level, and specify the goals that such devices should achieve, rather than the technological solutions to be used to achieve them. Notably, the Annexes note that these devices "must at least guarantee, through technical means and appropriate procedures, that:

> (a) electronic signatures relating to tenders, requests to participate and the forwarding of plans and projects comply with national provisions adopted pursuant to Directive 1999/93/EC;
>
> (b) the exact time and date of the receipt of tenders, requests to participate and the submission of plans and projects can be determined precisely;
>
> (c) it may be reasonably ensured that, before the time limits laid down, no-one can have access to data transmitted under these requirements;
>
> (d) if that access prohibition is infringed, it may be reasonably ensured that the infringement is clearly detectable;
>
> (e) only authorised persons may set or change the dates for opening data received;
>
> (f) during the different stages of the contract award procedure or of the contest access to all data submitted, or to part thereof, must be possible only through simultaneous action by authorised persons;
>
> (g) simultaneous action by authorised persons must give access to data transmitted only after the prescribed date;

[110] Directive 1999/93/EC of the European Parliament and of the Council of 13 December 1999 on a Community framework for electronic signatures(19) and Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the internal market.

(h) data received and opened in accordance with these requirements must remain accessible only to persons authorised to acquaint themselves therewith."

Par. 5 (c) adds that Member States may choose to introduce or maintain voluntary accreditation schemes aiming at enhanced levels of certification service provision for these devices, drawing on the voluntary accreditation model adopted also by the eSignatures Directive. In the sections below, we will examine how Member States have implemented these provisions.

Finally, par. 5 notes the Member States' rights to require specific types of electronic signatures (subsection b of this paragraph), and to take specific measures to compensate for a lack of electronic documentary evidences. These will be examined in separated sections of this report on eSignatures and eDocuments below, due to the complexity of the subject matter.

6.3.2 Main Opportunities and Challenges

6.3.2.1 eProcurement opportunities

eSubmission offers a number of advantages over paper submission, depending on the implementation choices made. These include notably:

- Lower cost and effort for economic operators, due to the elimination of the common requirement to submit multiple copies of an offer.
- Lower cost and effort for contracting authorities, since submission processes can be standardised and streamlined to a greater extent.
- Greater security and reliability, since the use of modern technologies (notably eSignatures) can ensure that offers cannot be modified after the submission, which will decrease disputes. Much of the requirements of the Annex referenced above should also be read in this light, including access limitations before the expiration of deadlines, the ability to determine the exact time of submission, and general confidentiality rules.
- eSubmission is obviously a prerequisite to enabling advanced eProcurement modalities such as DPS and eAuctions. Thus, a country wishing to benefit from these tools will first need to develop basic eSubmission functionality.

Thus, eSubmission implies clear benefits to all stakeholders. In addition, the widespread use of eSubmission in public procurements is likely to have a beneficial impact on other eBusiness activities as well, since experiences and lessons learned can trickle through into other contexts (e.g. wider use of eSignatures, eDocuments…).

6.3.2.2 eProcurement challenges

Obviously, these advantages can only be realised if the related challenges can also be resolved, which largely mirror the list above:

- Economic operators must be provided with the necessary tools to perform an eSubmission. This implies the development of the necessary devices, both at the contracting authority's side (e.g. an eProcurement website) and at the economic operator's side (e.g. locally installed software or an electronic signature solution). These must meet the requirements of the Directives as described above, with the main challenge being that no accessibility barriers should be introduced. Depending on the choices made, the development of these tools can be complicated and expensive.
- The developed tools will need to meet clear security requirements and support the operational needs of the Directives. At a minimum, the Directives require that the integrity and confidentiality of submitted tenders is ensured, that tenders cannot be examined until applicable deadlines have expired, that access to the tenders is appropriately managed, and that the exact time and date of the receipt of tenders can be determined in a reliable manner. Depending on the evaluation of risk, the public procurement system may require the use of advanced electronic signatures, logging facilities, time stamping services, identification and authorisation management systems, etcetera.
- Both contracting authorities and economic operators will need to be persuaded to use these tools. If they offer a real advantage over traditional submission (e.g. in terms of cost, effort or user friendliness), then this challenge will be easier to overcome. However, a certain degree of operational inertia is likely to exist with economic operators and contracting authorities, i.e. they will be naturally inclined to continue to use the (paper) processes they have used in the past. To encourage them to overcome their traditional tendering approaches, a system of incentives will therefore need to be developed. Some countries may simply opt to make the use of eSubmission mandatory for certain eProcurements, whereas others may rely on softer approaches, including by simply relying on the inherent advantages specified above.
- A coherent approach needs to be taken on how eSubmissions will be supported: will a 'light touch' approach be taken in which tenderers are allowed to freely draft their offers and submit them electronically, or will there be more advanced tender preparation mechanisms? Will a single eProcurement portal be used throughout the country, or will a multitude of solutions coexist? Will eSubmissions only be used in straightforward open procedures, or will eAuctions and DPS also be complemented?

It is clear that these challenges are significant, and that interoperability will play a central role: how can Member States find an answer to the challenges above while remaining faithful to the barrier free vision of the Directives and the Action Plan?

6.3.3 The 2004 status and vision of the Action Plan

6.3.3.1 2004 status

The 2004 Impact Assessment identified the electronic submission of tenders as one of the six main phases in the procurement cycle, which was (unsurprisingly) covered to a much smaller extent in the Member States than the preceding phases: only 9 systems on a total of 36 (25%) supported eSubmission functionality in 2004[111]. Looking at individual Member States, 10 Member States claimed to be using eSubmission at least to some extent (even if there was no specific system that could be identified), namely Austria, Denmark, Finland, Germany, Ireland, Poland, Spain, Sweden and the UK.

[111] See http://ec.europa.eu/internal_market/publicprocurement/docs/eprocurement/2004-12-impact-external-vol1_en.pdf

However, with the exception of Germany, all of these described the actual usage of eSubmission as being “to a low extent”.

Thus, eSubmission was not yet supported to a notable extent in 2004. Obviously, this would have to be one of the major areas of improvement.

The cost to implement this phase was estimated as being high, notably because of the required IT investments (both hardware and software), including possibly (depending on national laws and local preferences) the development of a digital signature and public key infrastructure. On the other side, benefits were estimated as having a medium impact including through the reduction of administrative and logistics costs, improved transparency, greater ease of auditing and better security and/or privacy.

6.3.3.2 Vision of the Action Plan and indicators for success

eSubmission as such is not treated as a separate phase or activity in the Action Plan, or rather no specific section or measure of the Action Plan is dedicated to this phase. Rather, eSubmission is dealt with in two general ways:

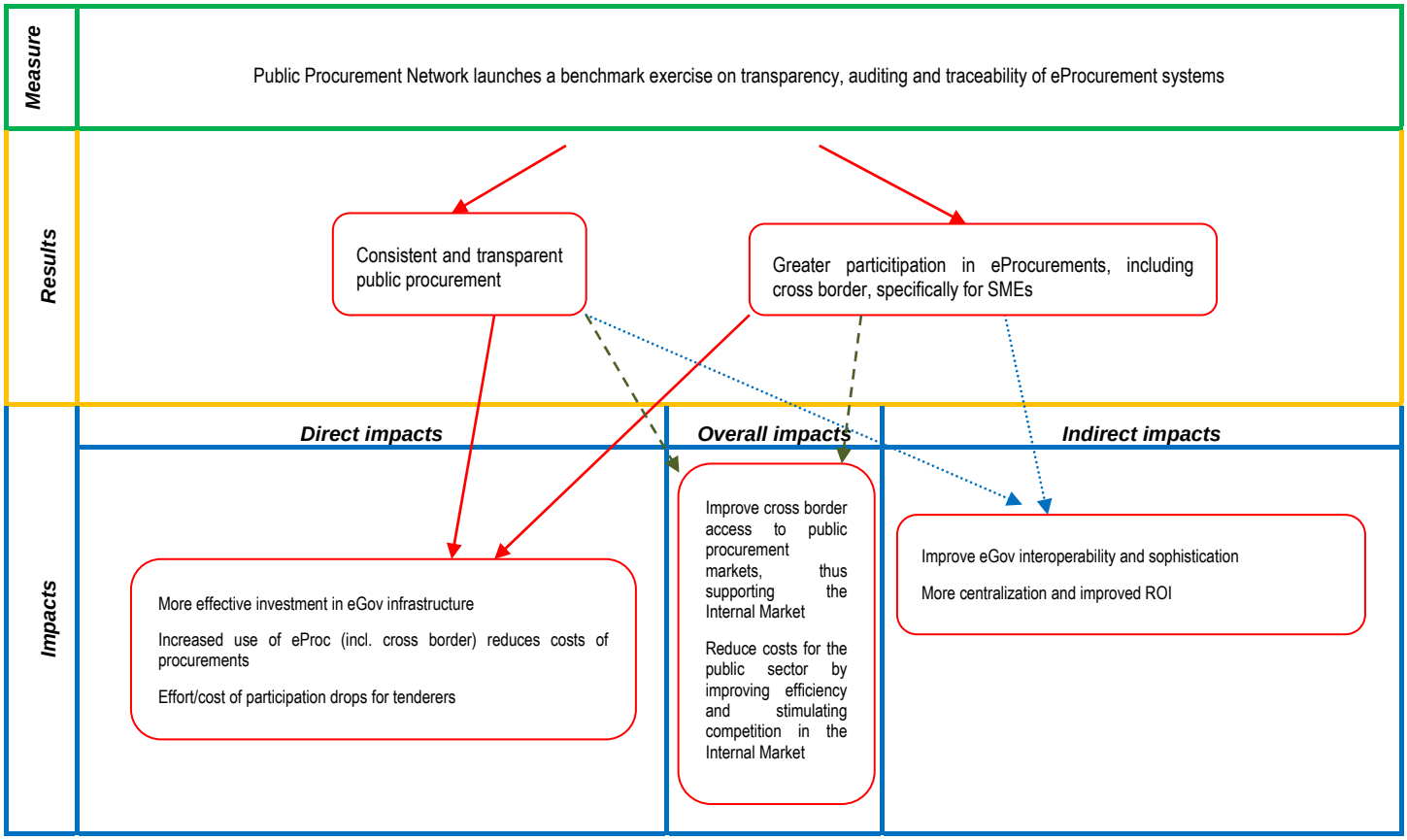
- First and foremost, eSubmission is a part of the overarching vision of the Action Plan, summarised on p.10 of the Commission Staff Working Document annexed to the Action Plan as: “Use of electronic means should guarantee in practice that any business in Europe with a PC and an internet connection can participate in a public purchase conducted electronically.” Thus, the final goal of an open eProcurement market applies to eSubmission as well.
- Secondly, via a series of measures which address certain aspects of eSubmission, including notably with respect to eSignatures and eDocuments. These are addressed elsewhere in this report.

One specific measure is however also relatively directly linked to the issue of eSubmission:

Measure	*Targeted party*	*Nature of the measure*
Public Procurement Network launches a benchmark exercise on transparency, auditing and traceability of eProcurement systems	Public Procurement Network	Improving knowledge

Measures in the Action Plan related to eSubmission

This specific measure relates to the requirements imposed in the aforementioned Annexes of the Directives, and notably the need to ensure the compliance of any eProcurement devices used for eSubmission with these requirements.



Globally, the main indicators of success are the extent to which eSubmission functionality is now available at the national level, the existence of any accessibility barriers to eSubmission (especially in relation to cross border procurements), the actual usage of eSubmission in practice, and of course the impact that the Action Plan has had on this issue.

6.3.4 Current status and evolution - matching with the Action Plan vision

6.3.4.1 Actions undertaken

No specific results of this measure could be identified; thus, it is clear that national evolutions are not linked on this point to the Action Plan.

However, this should not be taken to mean that eSubmission may not have benefited from the Action Plan. As noted above, the measures on eSignatures and eDocuments (discussed elsewhere) could also prove highly influential. This will need to be taken into consideration when examining the national status in the sections below.

6.3.4.2 Evolution at the national level

Initial indicator - Ernst & Young survey

Again, a first indicator of progress can be found in the Ernst & Young online survey conducted during 2008-2009 as a precursor to the present report. As a part of this survey, key stakeholders were asked about their usage of eProcurement, and their perceptions of barriers and benefits, including in relation to specific phases. In the sections below, we will examine the replies with respect to eSubmission, as received from contracting authorities, central purchasing bodies, and economic operators themselves.

Replies received from contracting authorities

Contracting authorities were asked directly whether they presently used eSubmission, whether this was mandatory, and whether they planned to use it in the future. The following replies were received (most common answer indicated in green):

For the following phases and tools									
	Do you use?			Is it mandatory?			Do you plan to use in the		
	Yes	No	no reply	Yes	No	no reply	Yes	No	no reply
eSubmission (electronic receipt of tenders)	14%	25%	61%	5%	23%	72%	24%	5%	71%
	30	52	129	11	49	151	51	10	150

Overview of eSubmission uptake as reported by contracting authorities

Most contracting authorities (61%) did not respond. Of those that did reply, eSubmission showed little usage (14% of all replies, or 37% of those that did reply). This seems to be an indication that most contracting authorities simply still do not yet use eProcurement to a significant extent in practice.

Replies received from central purchasing bodies

Central purchasing bodies (CPBs) provide part of the eProcurement infrastructure to contracting authorities, and can therefore be expected to have a more comprehensive view on uptake and on the principal challenges. Furthermore, given that conducting eProcurements is their core activity, substantially higher uptake ratings can be expected.

When asked how often contracting authorities use certain phases and tools for above EU threshold contracts, the following replies were given (16 responses received in total; most common answer indicated in green):

	Don't know	Frequently (30-59%)	Most used (>60%)	Never	Occasionally (<29%)
eSubmission (electronic receipt of tenders)	2	1	2	5	6

Overview of eSubmission uptake as reported by CPBs above EU thresholds

While the number of responses is of course very limited, eSubmission at least shows higher signs of uptake with CPBs, although it is surprising to see that 5 out of 16 CPBs indicate *never* using eSubmission.

For below EU threshold contracts, the most commonly given answer was *never*; but it should also be noted that a relatively large group identified eSubmission as the most used phase.

	Don't know	Frequently (30-59%)	Most used (>60%)	Never	Occasionally (<29%)
eSubmission (electronic receipt of tenders)	3	0	4	5	2

Overview of eSubmission uptake as reported by CPBs below EU thresholds

Replies received from economic operators

Finally, economic operators were also consulted in the survey, which offers a way of measuring the take-up side of eSubmission. The central question of course relation to the usage of specific procedures and tools, resulting in the following overview for eSubmission:

For above EU thresholds contracts						For below EU thresholds contracts					
Never	Occasionally (29% or less)	Frequently (between 30 and 59%)	Most used (over 60%)	Don't know	(no answer)	Never	Occasionally (29% or less)	Frequently (between 30 and 59%)	Most used (over 60%)	Don't know	(no answer)
22,06%	8,82%	4,41%	11,76%	2,94%	50,00%	22,06%	13,24%	1,47%	7,35%	4,41%	51,47%

Overview of eSubmission uptake as reported by economic operators above and below EU thresholds

Here too, eSubmission usage is indicated as being relatively low, with '*never used'* being the most common answer. However, '*occasional/frequent/most used*' answers jointly account for around 25% of all surveyed operators, and thus for 50% of those that replied (since there was a 50% no-reply rate). From a purely practical perspective, it bears repeating that the 2004 Impact Assessment described eSubmission as being impossible in 15 out of 25 Member States, and as being used only to a low extent in 9 of the 25 others. In that perspective, 50% of those that provided a reply indicating that they have used eSubmission in the past can be considered a relative success.

Country profiles - availability and accessibility of eSubmission infrastructure

A more direct measure of eSubmission infrastructure availability can be gained by examining the country profiles drafted and validated in the course of this study, specifically to determine how many of the 32 examined countries have established one or more portals or platforms supporting eSubmission as a phase. The expectation would be that this rating would be substantially higher than the 25% reported in 2004, as also suggested by the Ernst and Young data above.

Indeed, when examining the country profiles, the large majority of countries (25 out of 32, or 78%) report the availability of eSubmission functionality via one or more platforms or portals (either via central or regional procurement portals, or via private procurement service providers). The seven remaining countries (3 Member States, namely Bulgaria, Greece, and Luxembourg; the EEA countries Iceland and Liechtenstein; and the candidate countries Croatia and Turkey) are typically still developing their eProcurement infrastructure.

It should be stressed that this does not imply that eSubmission is available for 100% of public procurements in each of these 25 countries; indeed, this threshold is not met anywhere. Rather, the following approaches can be distinguished:

- Countries in which eSubmission is mandatory for certain types of procurements. A key example of this approach is Portugal, where eSubmission through the platform used by the contracting authority became mandatory for all public procurements above a certain threshold. Other countries combine such obligations with the use of framework agreements: certain contracting authorities (typically at the national level) are required to use the framework agreements made available to them. This approach is e.g. used in Austria and Sweden.
- Countries in which eSubmission can be made mandatory by the contracting authority, using any infrastructure available. This is e.g. the case in France, where as of 1 January 2010, contracting authorities may impose the use of electronic procedures for procurements above EUR 90.000.

Most countries have a multitude of eProcurement solutions in place, which contracting authorities may choose to use freely. A variation on this are the countries that have implemented an accreditation/certification scheme, where accredited/certified service providers are given a favoured position. Such systems exist in the Czech Republic (where attestation by the Ministry of Interior is required under law) and in Portugal (where attestation by the Management Centre for the Electronic Government Network (CEGER) is voluntary).

Thus, the availability of eSubmission solutions has improved substantially since 2004: whereas the 2004 Impact Assessment reported eSubmission availability in 10 out of 25 Member States (40%), this number has more than doubled to 25 out of 27 (93%). Actual usage of eSubmission functionality is harder to measure, as no reliable statistical data is available. However, as noted above, eSubmission has already become mandatory for some procurements in some countries (notably in Portugal, Austria and Sweden). Furthermore, when examining the country reports' description of the legal framework with regard to the permissibility of eSubmissions, the result is as follows:

eSubmission is not permitted unless indicated otherwise by the contracting authority	eSubmission is permitted unless indicated otherwise by the contracting authority	Permissibility must be specified by the contracting authority (no default rule)
Austria Belgium Italy The Netherlands Poland Croatia	Bulgaria Czech Republic Estonia Hungary Portugal Slovenia[112] Spain Sweden Iceland	Cyprus Denmark Finland France Germany Greece Ireland Latvia Lithuania Malta Romania Slovakia UK Liechtenstein Norway
6 Countries (including 5 Member States)	**9 Countries (including 8 Member States)**	**15 Countries (including 13 Member States)**

Overview of eSubmission permissibility at the national level

Thus, in the vast majority of countries (15/30 or 50%) the permissibility of eSubmission is entirely dependent on a decision of the contracting authority. A smaller group of 9 countries (30%) take a 'default-yes' position, whereas 6 others take a 'default-no' position. Thus, at least from a regulatory perspective, there is a tendency towards openness to eSubmission.

It should be noted that two countries were not included in the table above:

- In Luxembourg, new regulations were approved on 3 August 2009[113]. Article 51 (2) of this *Règlement grand-ducal* notes that any electronic submission must be accompanied by a printed summary version, which will take precedence in case of differences between the electronic and printed version. Thus, it seems that fully electronic procurement is presently not possible.
- In Turkey, provisions permitting the use of eProcurement have been implemented via Law No. 5812, amending Law No. 4734. The law permits the use of eProcurement via the Electronic Public Procurement Platform established by the Public Procurement Authority, in accordance with the principles and procedures established by the Authority. However, this functionality is currently not available yet. Thus, here too it seems that fully electronic procurement is presently not possible.

More importantly, apart from these two countries, all examined countries appear to allow contracting authorities to make the use of eSubmissions mandatory. This is either explicitly written into the law, or more commonly based on a direct copying of the relevant provision of the Directives, noting that "all communication and information exchange may be carried out by post, by fax, by electronic means or by a combination of those means, according to the choice of the contracting entity". Thus, eSubmission take-up seems to show few barriers from that perspective.

[112] Specifically, the Slovenian Public Procurement Act notes that "Tenderers may submit their tenders electronically if this is supported by the information system used by the contracting authority. The contracting authority shall inform tenderers of the possibility of electronic submission of tenders in the tender documentation." (art. 67 (1-2)). Thus, availability of the appropriate infrastructure at the contracting authority's side appears to be the decisive factor.

[113] *Règlement grand-ducal du 3 août 2009 portant exécution de la loi du 25 juin 2009 sur les marchés publics*. (Mémorial A n° 180 du 11 août 2009) ; see http://www.legilux.public.lu/leg/a/archives/2009/0180/index.html

However, this should not be taken to mean that there are no barriers to eSubmission from a practical perspective. The main barrier to using an eSubmission solution (apart from practical issues such as the requirement to know the local language(s)) is the use of advanced eSignatures, which is mandatory in some countries. This particular issue will be examined in the section on eSignature tools below. As a summary preview of this section, it can already be noted at this point that almost all solutions requiring the use of advanced eSignatures are unable to accept foreign eSignature solutions, meaning that foreign economic operators will be unable to use eSubmission unless they can obtain a signature solution issued in the country in which they wish to submit an offer.

In practical terms, this problem is present in all systems permitting the use of eSubmissions, with the following exceptions:

- Two countries which rely on advanced eSignatures have a small list of foreign solutions which are also supported. This was the case in Austria, where the use of a signature validation component allowed the eSubmission application to also accept signatures created using an eID card from Belgium, Italy, and Slovenia; and in Norway, where the eSubmission platform could be extended to support electronic signatures supported by the private BBS Validation Authority.
- In Denmark and Slovakia, registration on the main eProcurement websites results in the recipient receiving an advanced signature certificate via e-mail that complies with national requirements, which he can use to sign the offer. Thus, the need for interoperability has been avoided by introducing a sufficiently flexible user registration system. In Germany, the legal framework has been modified to allow the use of advanced electronic signatures that are easier to obtain for foreign economic operators, thus facilitating cross border eSubmission.
- In Ireland, the main application uses a simple online registration system that does not use any PKI components and therefore has no interoperability issues to be dealt with.

Thus, eSignatures remain a key barrier to the cross border use of eSubmissions. This problem will be examined in greater detail in the section on eSignatures below.

Apart from eSignatures, increasing attention has also been dedicated to the standardisation of eDocument formats. Currently, eProcurements generally operate on the basis of relatively unstructured file types, such as MS Word or PDF files. However, further efficiencies could be realised by structuring eDocuments to incorporate semantic information, thus allowing them to be processed automatically, at least to a certain extent. OASIS currently maintains the Universal Business Language (UBL) standards, an XML based library of common business documents[114]. A specific subcommittee was established within OASIS to examine eProcurement documents[115], which should improve the usability of these libraries for eProcurement purposes.

In the meantime, two notable initiatives have been addressing the issue of eDocument standardisation at the national level:

[114] See http://www.oasis-open.org/committees/tc_home.php?wg_abbrev=ubl

[115] See http://www.oasis-open.org/committees/sc_home.php?wg_abbrev=ubl-psc

- the CODICE project organised by the Spanish General Directorate of State Property[116]. CODICE builds on a series of international standards and initiatives including the aforementioned UBL, but also ebXML-CCTS, UN/CEFACT-UMM, and European work within IDABC and the CEN/BII Workshop ('Information Systems and Business Interoperability Interfaces for public procurement'[117]). As noted on the ePractice site, the IDABC eProcurement XML Schemas initiative and eProcurement Functional requirements were the starting point of CODICE, and CODICE implementation is based on existing UBL components and UBL syntax for new components and documents. The result is a series of open specifications of documents and components geared specifically towards facilitating compliance with the European Public Procurement Directives, used in Spanish eProcurement projects, and developed by the Spanish Government (Spanish Ministry of Economy and Finance - DG del Patrimonio del Estado). All electronic documents involved in the pre-awarding phase have been defined and implemented in the course of the CODICE project.
- The Northern European Subset (NES – see http://www.nesubl.eu/) was set-up between a group of representatives from Denmark, Finland, Iceland, Norway, Sweden and the UK with a view of developing a subset of UBL 2.0 documents. The stated main aim of NES is "to facilitate the establishment of a common platform for eProcurement among its members, and through this to:
    - facilitate interoperability and practical use of eProcurement in both domestic and cross border trade
    - facilitate harmonisation of different types of eProcurement documents
    - contribute to the development and use of an international standard for eProcurement."

  Comparable to CODICE but at a transnational scale, NES resulted in an implementation of UBL 2.0 geared towards the European eProcurement Directives. While implementation into working eProcurement applications is not a part of NES efforts, specifications are freely available and continue to be further developed.

Current CEN/ISSS standardisation work (within WS/BII 2[118]) aims at defining specifications for tools to support the implementation of profiles, namely the NES and CODICE customizations of OASIS Universal Business Language 2.0. Furthermore, it is hoped that NES and CODICE outputs will become a part of UBL 2.1, to improve international impact. This could provide a significant interoperability advantage, as it would mean that eProcurement software could be more easily developed to interact with a multitude of national eProcurement systems, thus facilitating the participation in foreign procurements (including potentially outside of Europe).

From a regulatory perspective, it seems that the question of cross border interoperability does not seem to be given much specific attention in national laws. Rather, these laws aim to set up generic frameworks with little additional regard to the potential cross border dimension. None the less, a few cases can be identified where national laws were written or modified to improve cross border interoperability (or rather: cross border accessibility):

- German eProcurement laws were modified to permit the use of certain advanced electronic signatures to sign offers, instead of only allowing qualified signatures (as was the case under the original law). One of the drivers behind this change, as indicated in the national report,

[116] See http://www.epractice.eu/en/cases/codice

[117] See http://www.cen.eu/CEN/Sectors/Sectors/ISSS/Activity/Pages/Ws_BII.aspx

[118] See http://www.cen.eu/CEN/Sectors/Sectors/ISSS/Activity/Pages/Ws_BII.aspx

was the problem that suitable qualified signatures could only be obtained after personal appearance in Germany, thus creating a barrier to cross border procurement.

- Belgian law (specifically the Royal Decree of 10 January 1996, as amended) contains a series of measures that can be taken 'to resolve certain problems that can present themselves' when using eProcurement (Article 66quater §3 and following). Notably, the contracting authority may allow economic operators to submit a back-up copy (security copy) of the tender, either electronically or in a paper format, which will only be opened in case of issues with the electronic version. This 'back-up right' might be beneficial to improve trust to foreign economic operators, although obviously with the negative side-effect of eliminating fully electronic procurement. A similar paper 'back-up right' is available under French law.
- Spanish law contains a small addition compared to the Directives' provisions on the use of electronic means of communication: the Nineteenth Additional Provision to the Public Procurement Act notes that "programs and applications necessary for the electronic submission of tenders or requests to participate must be in widespread use, easily accessible and non discriminatory, *or shall be made available to interested parties by the contracting authority.*" (19th Add. Prov, c) The italicised part is an addition compared to the Directives, and allows contracting authorities to directly make necessary tools available. This could prove beneficial to economic operators.

However, there is no available data as to the use or effectiveness of these provisions.

6.3.4.3 Matching with the Action Plan

Generally, accessibility of eSubmissions remains problematic in cross border procurements, notably due to the common requirement of using national eSignature solutions. As will be further discussed below, usage of locally issued credentials to submit electronic offers remains the standard approach, which will lead to difficulties in cases where such credentials are not easily available to foreign economic operators. While progress is made in improving the interoperability of eSignature solutions, in practice the most effective solution appears to be to facilitate access to local credentials, either by avoiding the use of advanced eSignatures (as in Ireland), issuing signature certificates electronically (as in Denmark and Slovakia), or implementing support for local eSignature solutions which are easier to obtain for foreign economic operators (as has been done in Germany). Apart from these approaches however, the Action Plan's goal of making cross border eSubmission a realistic possibility does not appear to have materialised in most countries.

A secondary critical point is the uptake of eSubmission; replies from the Ernst & Young survey seem to indicate that the available infrastructure is not yet used at sufficient levels in practice.

6.3.5 Remaining gaps/barriers

As one of the more complicated phases, it is not surprising that this a phase for which a number of gaps/barriers remain:

Possible gap / barrier	Applicable to this phase?	If yes, explain
Lack of available infrastructure	Yes	eSubmission is not a universally available phase, as systematic solutions are still missing in some Member States.
Interoperability	Yes	eSubmission can be hampered from a technical perspective, mainly due to eSignature requirements, as will be commented below in the analysis of eSignatures.
Legal uncertainty	No	/
Trustworthiness	No	/
Accessibility	Yes	Language support remains an important barrier. In addition, there is no homogeneity in the implementation of eSubmission solutions across the Member States, which means economic operators need to determine on a case by case basis how eSubmission must be done. As a result, it is particularly important for the contracting authority to provide clear and accessible instructions in that respect, which is only rarely done.
Economic viability and use cases	Yes	For economic operators which do not participate often in public procurements, there may be a question whether it is economically interesting to invest the time, effort and resources to determine how a specific eSubmission solution must be used. E.g. it may be necessary to acquire a suitable eSignature solution and to provide some training to key personnel on how eSubmission is to be done. This may be prohibitive when eSubmission is not made sufficiently accessible and intuitive.
Transparency	Yes	It is not clear in most cases how often eSubmission is used in practice, due to a lack of comparable data and the multitude of available solutions, especially in countries with strongly decentralized approaches.
Market challenges	No	/
Distribution of benefits	Yes	It was noted above that eSubmission may require an initial investment which is harder to shoulder for undertakings which participate infrequently in procurements. This could negatively impact the participation of SMEs. However, the available data does not suggest that eProcurement as such acts as a deterrent towards SMEs. It should be noted however that data on this topic is only available for a small number of countries, and namely those which have invested in facilitating the participation of SMEs. Thus, the scarce available data has a clear self-selection bias.

Gaps and barriers with respect to eSubmission

In summary, two major barriers remain. Firstly, the issue of eSignature interoperability needs to be resolved. The clear majority of eSubmission solutions require the use of advanced electronic signatures, which are almost entirely restricted to national use cases at this point in time. As a result, cross border eSubmission is unrealistically demanding in most countries, except those which have opted for a very open approach, such as notably Ireland.

However, the technical issue of interoperability is not the only challenge, as the usage of eSubmission infrastructure at the purely national level also has not yet reached critical mass in most countries. While several high volume countries exist, in most cases eSubmission is still the exception rather than the rule, even if a suitable national infrastructure is present. A greater effort should be made to promote these solutions and to encourage or even mandate their use in practice.

6.4 eEvaluation and eAwarding

6.4.1 Definition and scope

As the conclusion of the pre-award phases, each procurement ends with the evaluation of the received offers, followed by the awarding of the contract to the best tenderer (provided that a valid and acceptable tender was received). In traditional procurements, this process can be structured into the following sub-stages:

- Simultaneous opening of all the bids;
- Determining the validity of the bids, including the compliance with exclusion and selection criteria, and rejecting inadmissible bids;
- A comparative evaluation of all admissible bids;
- Communication of the outcome to the bidders.

These stages are regulated in the Directives, notably via art. 41 of Directive 2004/18/EC (informing candidates and tenderers of the outcome), art. 42 (communication, including simultaneous opening of bids), art. 43 (reporting on the outcome of the evaluation), art. 44-52 (verification of the suitability and choice of participants and award of contracts) and art. 53 (contract award criteria).

In an electronic environment, eEvaluation and eAwarding refer to the partial (i.e. decision support) or entire automation of the assessment of bids (eEvaluation), and the formalisation and communication of the outcome to the tenderers (eAwarding). Fully automated assessment is by definition of course only possible if assessment criteria are entirely quantitative (i.e. it does not require subjective appreciation) and clearly defined.

The Directives contain relatively few rules specifically with respect to eEvaluation and eAwarding. The main provisions have been integrated in the general rules on communication, notably in art. 42 and Annex X of Directive 2004/18/EC and art. 48 and Annex XIV of Directive 2004/17/EC. Specifically, these provisions note that:

- Communication and the exchange and storage of information shall be carried out in such a way as to ensure that the integrity of data and the confidentiality of tenders and requests to participate are preserved, and that the contracting entities examine the content of tenders and requests to participate only after the time limit set for submitting them has expired (art.42/48);
- Devices for the electronic receipt of tenders, requests for participation and plans and projects in contests must at least guarantee, through technical means and appropriate procedures, that (Annex X and XIV):
    - it may be reasonably ensured that, before the time limits laid down, no-one can have access to data transmitted under these requirements;

- o if that access prohibition is infringed, it may be reasonably ensured that the infringement is clearly detectable;
- o only authorised persons may set or change the dates for opening data received;
- o during the different stages of the contract award procedure or of the contest access to all data submitted, or to part thereof, must be possible only through simultaneous action by authorised persons;
- o simultaneous action by authorised persons must give access to data transmitted only after the prescribed date;
- o data received and opened in accordance with these requirements must remain accessible only to persons authorised to acquaint themselves therewith.

Thus, the Directives approach eEvaluation and eAwarding mainly as a technical and operational challenge, by focusing strongly on the need for appropriate access management and security policies to prevent untimely and/or unauthorised access to any received bids.

6.4.2 Main Opportunities and Challenges

6.4.2.1 eProcurement opportunities

eEvaluation and eAwarding mainly offer the potential of streamlining the processes behind traditional evaluation and awarding actions, including notably:

- the wholly or partially automated assessment of the admissibility of the bid. This can be done e.g. by verifying if the tenderer meets the exclusion and selection criteria, and whether the bid formally respects specific boundaries set by the terms of the procurement (e.g. whether it has respected any indicated maximum budget);
- the wholly or partially automated assessment and comparison of the merits of each admissible bid, by examining key quantitative aspects of the bid (price, warranty periods, etc). This is of course only possible for elements can be expressed quantitatively or which are otherwise suitable for automated processing
- virtually simultaneous communication with all tenderers, including the communication of the number of received bids and identity of the bidders, and the notification of the outcome of the procurement. The fact that this can be done virtually simultaneously and using exactly the same substantive information means that all tenderers are treated equally, reducing the risk of disputes.

Thus, eEvaluation and eAwarding can generally be more efficient and thus quicker and cheaper than traditional procurement processes, resulting in clear gains to both contracting authorities and economic operators.

6.4.2.2 eProcurement challenges

The main challenge is the technical implementation of eEvaluation and eAwarding modules. The complexity of this challenge can range from the relatively trivial to the highly complex, depending on the ambitions and goals of the relevant modules. One could e.g. imagine an eProcurement platform in

which eEvaluation only implies that a procurement is closed to new submissions, and in which all received bids are simply provided to a designated representative of the contracting authority. At that point, any further action – judging the validity of the bids, assessing them and choosing a winning bid – could be done manually, followed by a simple e-mail to all participants. This would not be overly complicated to implement. At the other extreme, an eEvaluation module could also automatically validate compliance with exclusion and selection criteria (including e.g. the validation of any signatures applied to any documentation), check whether the terms of the bids are within acceptable parameters, comparatively assess the bids based on predefined criteria, and recommend a winning bid. In this case, complexity is of course much greater.

It should be noted (as will be further examined below) that such advanced evaluation features are required for more complicated procurement modalities, notably for eAuctions, which can only operate to the extent that automatic assessment and evaluation is possible.

6.4.3 The 2004 status and vision of the Action Plan

6.4.3.1 2004 status

The 2004 Impact Assessment examined to which extent the 36 identified eProcurement systems supported evaluation functionality; awarding was not examined separately. The study noted that this was only the case for three systems (8%): the Danish Ethics system, the website www.ausschreibungen.hamburg.de in Germany, and the UK platform www.OGCbuyingspublicsolutions.gov.uk. With only 3 out of 25 Member States having a solution supporting this phase (12%), it was the second lowest scoring functionality (after eInvoicing).

In a sense, this should not be considered as surprising, since the same evaluation also found that only 9 systems supported eSubmission, which is obviously a prerequisite for the productive use of eEvaluation. Furthermore, the return on investment for eEvaluation modules depends quite strongly on the type of procurement. In cases where automated evaluation is impossible (because of the presence of a subjective appreciation), eEvaluation is largely reduced to a process streamlining tool. I.e. in this case, eEvaluation will mainly serve to facilitate the underlying communication flows (i.e. stopping the acceptance of new bids and providing the acceptable bids to the evaluators), which may be perceived as having little added value. The same applies to eAwarding, which is largely a matter of assisting the contracting authority in managing its communication of the procurement outcome to all participating tenderers.

6.4.3.2 Vision of the Action Plan and indicators for success

No specific measures have been included in the Action Plan that relate specifically to eEvaluation or eAwarding; thus, the question of defining indicators is moot.

6.4.4 Current status and evolution

Country profiles - availability and accessibility of eEvaluation/eAwarding infrastructure

Looking at the country profiles drafted and validated in the course of this study, we can assess how many of the 32 examined countries have established one or more portals or platforms supporting eEvaluation/eAwarding as a phase. The expectation would be that this rating would be substantially higher than the 8% reported in 2004.

Based on the country profiles, this has indeed occurred: a narrow majority of countries (17 out of 32[119], or 53%) report the availability of eEvaluation/eAwarding functionality via one or more platforms or portals (either via central or regional procurement portals, or via private procurement service providers. The 15 remaining countries[120] are typically still developing their eProcurement infrastructure.

Thus, substantial progress appears to have been made on this front.

6.4.5 Remaining gaps/barriers

There do not appear to be significant gaps or barriers in the use of eEvaluation/eAwarding, although this depends largely on the complexity of the functionalities to be developed. Fully automated eEvaluation/eAwarding modules (which assess the admissibility of bids, compare them, select a winner and subsequently notify the participants) are of course highly complicated, and require a very comprehensive approach covering each aspect of the procurement (validating electronic signatures, validating any evidentiary documents, handling the semantic aspects by determining and comparing the key characteristics of each bid, etc).

Possible gap / barrier	Applicable to this phase?	If yes, explain
Lack of available infrastructure	Yes	eEvaluation/eAwarding is not a universally available phase, as systematic solutions are still missing in some Member States. As noted above, the choice of whether to implement eEvaluation/eAwarding modules depends largely on the degree of automation which is desired (and reasonably

[119] Specifically AT, BE, CY, DK, FR, DE, HU, EI, IT, LT, MT, NO, PT, RO, SK, SE and UK.

[120] Specifically BG, HR, CZ, NL, EE, FI, EL, IS, LV, LI, LU, PL, SI, ES and TR.

		possible) for the contracting authority.
Interoperability	No	/
Legal uncertainty	No	/
Trustworthiness	No	/
Accessibility	No	/
Economic viability and use cases	Yes	Using advanced eEvaluation/eAwarding modules (which can process offers almost entirely automatically) requires clear standardization of all key components of the offer. This is not possible in all cases, notably when the offer contains an intellectual component which must be subjectively appreciated.
Transparency	No	/
Market challenges	No	/
Distribution of benefits	No	/

Gaps and barriers with respect to eEvaluation/eAwarding

In practice Member States seem to be taking a much more pragmatic approach, by creating modules that support representatives of the contracting authorities in evaluating and awarding contracts, rather than attempting to fully automate this process. Indeed, full automation would be extremely complex and costly, and may not be applicable to a substantial number of contracts due to the presence of subjective elements requiring human appreciation. Thus, a gradual approach – as currently taken in the surveyed countries – indeed appears to be advisable.

6.5 Post-award phases: eOrdering, eInvoicing and ePayment

6.5.1 Definition and scope

The sections above described the pre-award phases, which lead to the conclusion of a public procurement contract. The term post-award phases refers to the steps that are may occur after the conclusion of a contract, covering notably the following three phases:

- eOrdering: the automatic placement of orders online, including particularly through the use of eCatalogues. This phase is optional, and will not take place in procurement contracts in which the contract conclusion already defines the exact supplies or services to be delivered under the procurement. eOrdering will only occur in cases where the concluded procurement contract has established a framework (such as a framework agreement or DPS) within which supplies or services can be ordered.
- eInvoicing: the automated process of issuing, sending, receiving and processing of invoice and billing data by electronic means[121]. In practical terms, the main characteristic distinguishing eInvoicing from traditional (paper) invoicing is the fact that the invoice is not only generated but also delivered in an electronic format, without a transformation to a paper form being required. The exact methods of communication must be agreed between partners, and may be as simple as a one to one transfer of a data file sent via e-mail or FTP, or a fully integrated end to end process that may include the use of third party networks that track the files from point of entry to receipt, in combination with sophisticated partner infrastructure that includes sender and receiver gateways to accept or reject files and pass them on to translation software prior to automated ERP integration.
- ePayment: any digital financial payment transaction involving currency transfer between two or more parties. In a simple context, an e-payment transaction may be defined as one in which monetary value is transferred electronically or digitally between two entities as compensation for the receipt of goods and services. Any payment that is not transacted by paper based instruments is considered an e-payment transaction[122]. These transactions may be carried out by companies uploading information in specified formats to banks either through the internet or by transmitting data files directly to banks or their intermediaries through secured or closed networks the online payment of goods/services/works under a procurement[123].

Electronic implementations of post-award phases are important to unlock the full appeal of eProcurements: while an eProcurement can be limited to pre-award phases (e.g. invoicing and payment will be done entirely via traditional processes), the consistent integration of electronic means can significantly improve efficiencies by enabling Straight Through Processing (STP). E.g. if there is a way for an economic operator to electronically issue invoices, and for the contracting authority to automatically generate an ePayment based on this invoice, then this will reduce time waste, prevent administrative errors, and ultimately reduce costs.

[121] See http://www.euebl.org/ebl/ebusinessebusiness/einvoicingfatturazione-elettronica/

[122] Source: http://wiki.triastelematica.org/index.php/E-payment

[123] See http://www.euebl.org/ebl/ebusinessebusiness/epaymentspagamenti-elettronica/

6.5.2 Main Opportunities and Challenges

6.5.2.1 eProcurement opportunities

eOrdering is a precondition for the effective use of closed procurement environments: unless a DPS or framework agreement is only used for a single procurement (in which case the choice of that instrument was not effective), eOrdering will be needed to use such modalities efficiently.

In addition, all three post-award processes allow the streamlining of the processes behind traditional post-award activities:

- In comparison to traditional ordering, eOrdering can allow (or require) all economic operators to work on the basis of the same information (they receive the same eOrder) and to submit a response using the same approach (i.e. possibly including the same technical format and using the same semantic structure). This implies that economic operators will work on equal terms (making competition fairer and more effective), and that contracting authorities will be more easily able to compare any received offers and select the best one. In addition, the use of an electronic format means that part of this process can be automated. E.g. in procurements which are decided substantially on the basis of quantitative criteria (e.g. prices, delivery periods, warranty periods, etc), decision making can be supported or fully executed by the eProcurement system. Finally, eOrdering can allow automated administrative follow-up, such as the creation of purchase orders for the winning bidder and contract conclusion.
- In comparison to traditional invoicing, eInvoicing can be both cheaper and cost effective, both for the invoice issuer and for the recipient. At the issuer's side, invoice generation can be partially automated, so that invoices are automatically created via the ERP system of the economic operator, and so that they can be electronically sent. Visual or presentational elements (including language of the invoice) can be modified with relative ease. At the recipient's side, the invoice can possibly be processed automatically by linking communication modules to ePayment modules. Finally, eInvoices potentially offer greater security and reliability than their paper equivalents, depending on the chosen technologies.
- In comparison to traditional payments, ePayments facilitate communications between the contracting authority making the payment and the banks transferring the funds to the economic operator. By performing payments under the Single Euro Payment Area (SEPA[124], as will be discussed further below), any entity will be enabled to transfer funds electronically to any entity within the EU as easily and cheaply as a domestic payment. As a result, administrative overhead is reduced, errors are avoided, and payments are made more speedily.

Globally, the use of eProcurements in the post-award phases creates new efficiencies by optimising and streamlining traditional communications processes and enabling Straight-Through Processing (STP), i.e. avoiding errors by ensuring the complete transaction (from eOrder to ePayment) can be conducted without any manual intervention.

[124] See http://ec.europa.eu/internal_market/payments/sepa/index_en.htm

6.5.2.2 eProcurement challenges

The main challenges with respect to post-award processes relate to standardisation. Since all of these processes aim to streamline communication between two or more parties, common standards need to be used to ensure that exchanged messages can be correctly processed:

- eOrders need to be structured in a way that can be understood by the receiving party. This also implies that semantic issues are addressed correctly: supplies and services must be specified exactly in the order, in terms that economic operators can reply to in a meaningful manner.
- eInvoices need to be issued in a way that allows the recipient to receive them and to process them (i.e. pay them and store them in accordance with applicable laws and policies). This means that specific standards with respect to their format and structure must be followed, to ensure that the invoices are comprehensible to the recipient. Furthermore, electronic invoices must meet the legal requirements imposed under the VAT Directive 2006/112/EC[125], which is presently under review, as will be further discussed below. This means that electronic invoices may only be sent electronically with the recipient's acceptance (article 232 of the Directive), and that the authenticity of the origin and the integrity of their content are guaranteed by one of the following methods (article 233):
    - by means of an advanced electronic signature as defined in the eSignatures Directive[126];
    - by means of electronic data interchange (EDI), as defined in Commission Recommendation 1994/820/EC of 19 October 1994 relating to the legal aspects of electronic data interchange, if the agreement relating to the exchange provides for the use of procedures guaranteeing the authenticity of the origin and integrity of the data.
    - by any other electronic means deemed acceptable by the Member States concerned.

  In practice, the need to ensure the authenticity and integrity of invoices has greatly complicated the uptake of eInvoices, as has the lack of a common standardisation framework for their structure and content, as will be discussed in the sections below.
- ePayments finally require the implementation of the necessary infrastructure to communicate payment orders to banks, and for banks to process such payments. From an eProcurement perspective, the main challenge is to implement ePayment modules into their eProcurement systems to send such payment orders, as the creation of back office payment infrastructure between European banking institutions is already a reality.

A key challenge behind all of these phases may be the policy prioritisation aspect: while pre-award phases need to be implemented in order to permit eProcurement, there is a real risk for the post-award phases to be seen largely as back office improvements, which show a less urgent need for reform. This might notably be the case for eInvoicing and ePayment: while electronic processes would

[125] Council Directive 2006/112/EC of 28 November 2006 on the common system of value added tax, which is effectively a recast of the Sixth VAT Directive of 1977 as amended over the years; see http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:2006L0112:20070101:EN:HTML

[126] Directive 1999/93/EC of the European Parliament and of the Council of 13 December 1999 on a Community framework for electronic signatures; see http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31999L0093:EN:HTML

certainly create efficiencies, there could be a perception that electronic pre-award phases could still be easily combined with paper invoices and traditional payment processing methods.

6.5.3 The 2004 status and vision of the Action Plan

6.5.3.1 2004 status

The 2004 Status reported that among the 36 identified procurement systems, the availability of post-award phases was as follows:

- eOrdering (notably based on the use of eCatalogues) was supported by 8 systems, or 22% of the identified systems.
- eInvoicing was supported by only 1 system (3%), namely the Danish DOIP platform. While no single platform was identified in the 2004 report, it noted that several Swedish eProcurement systems also offered this functionality.
- ePayment was not separately examined in this study; however, three national country reports (namely those of Ireland, Italy and the UK) reported using ePayments in at least one major eProcurement system.

With respect to costs and potential impact, both eOrdering and eInvoicing were rated as high cost to implement, but also as having a highly positive impact (with ePayment again not being examined separately):

- With respect to eOrdering, the report highlighted the complexity and cost of agreeing on an eCatalogue format, developing electronic catalogues, making the necessary IT investments to create and use eCatalogues, reorganising internal workflows and integrating eOrdering into the administrative back-end. Inversely, the beneficial cost impact after successful integration was also considered to be significant, resulting in reduced administrative costs (including through the elimination of printing and posting), faster processing of orders, and increased competition reducing prices.
- With respect to eInvoicing, largely similar challenges and benefits were identified: standardisation and adaptation of workflows were seen as challenging, but the reduction of administrative costs and efficiency increases were thought to be significant.

The 2004 Impact Assessment is thus relatively light on information on the 2004 status. It is however clear that concerns in 2004 were more focused on eInvoicing and eOrdering (especially the use of eCatalogues) than on ePayments, and that none of these phases was supported by existing eProcurement systems to a significant extent. In the sections below, we will examine if this perception is also mirrored in the Action Plan.

6.5.3.2 Vision of the Action Plan and indicators for success

Like the 2004 Impact Assessment, the Action Plan addresses mainly eOrdering and eInvoicing, without focusing on ePayments. While this is not stated explicitly in the Action Plan, key reasons are likely to be the fact that ePayments are a transversal issue that has an equal impact outside an eProcurement context, and that facilitating ePayments has been an EU policy priority for some time outside of the procurement context, as can be seen through the efforts to establish a Single Euro Payments Area (SEPA)[127]. Thus, no measure of the Action Plan relates to ePayments.

With respect to eOrdering and eInvoicing, the Action Plan notes that "a lack of generalised and interoperable eOrdering and eInvoicing tools across the Internal Market also creates obstacles to the equal participation of suppliers in cross border procurement. At present, these types of transactions are little used in practice and on an optional basis only. The Commission will continue monitoring the situation while solutions are being sought in the framework of standardisation activities undertaken by the EU."

The Action Plan thus considered that further standardisation activities were best suited to address the aforementioned challenges in using eOrdering and eInvoicing, with eOrdering standardisation efforts focusing mainly on eCatalogues. This indeed matches the concerns outlined above, and also recognises the fact that neither eCatalogues nor eInvoices are strictly an eProcurement issue, and therefore deserve broader attention.

Efforts in the field of eCatalogues will be described in greater detail in a separate section on eCatalogues below. With respect to eInvoices, the Action Plan referenced the ongoing work mandated by the Commission within CEN/ISSS, and on IDA initiatives for developing XML schemas for eProcurement, including eInvoicing and eOrdering.

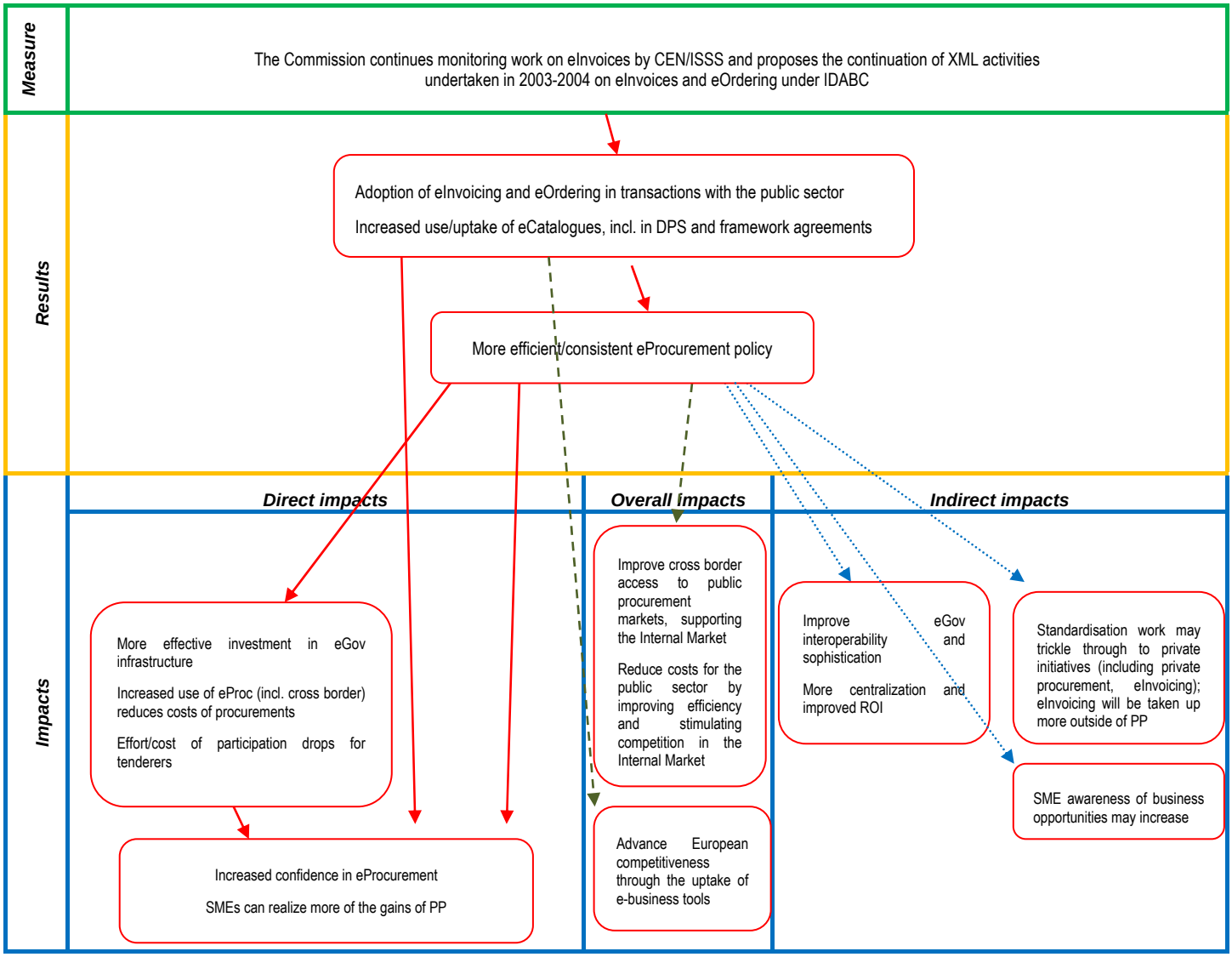
As a result, only one measure was written into the Action Plan relating to the post-award phases, which was intended to support ongoing standardisation efforts:

Measure	*Targeted party*	*Nature of the measure*
The Commission continues monitoring work on eInvoices by CEN/ISSS and proposes the continuation of XML activities undertaken in 2003-2004 on eInvoices and eOrdering under IDABC	Commission	Completing the framework

Measures in the Action Plan related to post-award phases

The envisaged actions and their impact were illustrated as follows in the intervention logic:

[127] See http://ec.europa.eu/internal_market/payments/sepa/index_en.htm



The most direct indicator of the measure's impact is the progress made in standardisation/implementation activities with respect to eInvoicing and eCatalogues as referenced in the Action Plan, and of course the extent to which these activities have stimulated the actual uptake of eInvoicing and eCatalogues.

It should be noted that:

- The Action Plan did not foresee any activities with respect to ePayments, and that no success criteria can therefore be defined on this point;
- With respect to eOrdering, the measure only targeted eCatalogues. This issue will be assessed in a separate section below.

6.5.4 Current status and evolution

6.5.4.1 Actions undertaken

The Action Plan tasked the Commission with monitoring ongoing standardisation work undertaken within CEN/ISSS, building inter alia on the framework of Directive 115/EC/2001 on electronic invoices, as well as IDA efforts to develop XML schemas for eProcurement, including eInvoicing and eOrdering.

This work is still ongoing, including through the standardisation work mentioned above (within CEN and OASIS, notably). In an eProcurement context, the large scale eProcurement pilot PEPPOL includes work packages examining eOrdering and eInvoicing, and actual implementation work for the European Commission is being undertaken via the e-PRIOR project[128]. Finally, with respect to ePayments, the recent Payment Services Directive[129] and the resulting Single Euro Payments Area[130] can be flagged as relevant achievements that eliminate some of the barriers for electronic payments. Each of these will be examined in greater detail in the sections below.

In addition, the Expert Group on Electronic Invoicing published its final report recommending actions to be taken to create a European Electronic Invoicing Framework[131]. The Commission Services plan to issue a Communication on Electronic Invoicing in Europe by the end of 2010 to promote the implementation of the Framework.

6.5.4.2 Relevant ongoing initiatives

CEN/ISSS work on eOrdering

The main standardisation effort with respect to eOrdering has been undertaken within CEN/ISSS, specifically WS/BII (Business Interoperability Interfaces on public procurement in Europe Workshop[132]). This Workshop was established in order to provide a basic framework for technical interoperability in pan-European electronic transactions, expressed as a set of technical specifications that cross-refer to relevant activities, and which will in particular be compatible with UN/CEFACT standardisation work in order to ensure global interoperability.

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[128] See http://www.epractice.eu/cases/ePRIOR

[129] Directive 2007/64/EC of the European Parliament and of the Council of 13 November 2007 on payment services in the internal market amending Directives 97/7/EC, 2002/65/EC, 2005/60/EC and 2006/48/EC and repealing Directive 97/5/EC Text with EEA relevance, see http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:319:0001:01:EN:HTML; see also http://ec.europa.eu/internal_market/payments/framework/index_en.htm

[130] See http://ec.europa.eu/internal_market/payments/sepa/index_en.htm

[131] See http://ec.europa.eu/internal_market/payments/einvoicing/index_en.htm

[132] See http://www.cen.eu/CEN/Sectors/Sectors/ISSS/Activity/Pages/Ws_BII.aspx

The CEN WS/BII was established in May 2007. At the closing meeting of CEN WS/BII (Phase I) in January 2010, a CWA[133] in five parts was approved for publication and is structured as follows:

Part 0: Introduction

Part 1: Profile overview

Part 2: Convergence and gap analyses

Part 3: Toolbox for technical interoperability

Part 4: Evaluation guidelines for testing and piloting

Even though CEN WS/BII has made significant achievements to address and support these goals, there is so far little indication of its deliverables being implemented and tested in real life. Such large scale implementation and testing is happening at the EU level notably within the ongoing PEPPOL project, as will be described below.

Furthermore, to provide sustainable value to the market, continued development and proper governance of the BII deliverables are required. A forum for such development and governance will be provided by the BII2 workshop, an extension of the CEN WS/BII which aims to:

- Provide technical support for adopters and implementers of the BII deliverables.
- Provide a forum for governance, life cycle management and further refinements of the CWA published by CEN WS/BII.
- During the work of CEN WS/BII several ongoing European initiatives were identified working on issues closely related to the topics addressed in BII, including PEPPOL. It was also noted that the effectiveness of these initiatives could probably be greatly improved by a closer coordination amongst the initiatives. BII2 will strive to achieve such coordination and harmonisation amongst European initiatives addressing various aspects of eProcurement.
- CEN WS/BII has established close corporation with the most relevant organisations developing standards for international use in respect of electronic messaging in eProcurement. As more topics and issues are addressed, and thus expressed as European requirements, all such requirements needs to be brought forward for inclusion in the relevant standards. BII2 will continue its active cooperation with the relevant organisations to ensure that European requirements are catered for.

This workshop has now started developing profiles for various eProcurement including in collaboration with PEPPOL. This should ensure the continuous revision of the CEN/ISSS BII work and its practical applicability.

PEPPOL efforts on eOrdering

The ongoing PEPPOL pilot project (Pan European Public Procurement OnLine – www.peppol.eu) builds on the work mentioned above and interacts with it, as it also recognised the importance of eOrdering and eInvoicing by defining separate work packages[134] dedicated to these topics.

[133] See www.cen.eu/cwa/bii/specs

The objective of the eOrdering work package is to focus on establishing a pilot solution that allows the electronic reception of orders from any European public sector awarding entity involved in the pilot, and to respond to these orders. The eOrdering work package's scope is electronic ordering in cross border public procurement, through the analysis of relevant studies, standards and legislation.

The eOrdering work package is scheduled to run from May 2008 to May 2011, and will result in a series of deliverables:

- Deliverable 4.1 - Standard Basic eOrdering format and data structure[135]
- Deliverable 4.2 - Functional specifications for the development of Building Blocks Software enabling cross border use of eOrdering
- Deliverable 4.3 - Building Blocks Software enabling cross border use of eOrdering
- Deliverable 4.4 - Edited Training manual and Guidelines on Software enabling crossborder use of eOrdering
- Deliverable 4.5 - Final Report on the eOrdering pilot

At the time of writing, only the first deliverable has been made available. This specific deliverable builds on the work done by CEN/ISSS WS/BII, as described in the report:

- The work package has contributed to the definition and reviews of the eOrdering profiles based on the analysis of PEPPOL member countries' approaches, focusing on two specific CEN/ISSS profiles: BII03 (Order Only) and BII06 (Procurement). These two profiles have been chosen for a number of reasons:
    - BII03 covers the order itself and is the foundation for any other eOrdering profile. In earlier (draft) versions, CEN had the following statement included in this profile: "This profile describes a process comprising only an electronic (purchase) Order. It allows for electronic ordering of goods and services/services that are non-standard or not easily described in catalogues." (CEN, Profile BII03, Basic Order Only, V03). WP4 remarked that this actually suggests a restriction to the usability of the profile for non standard /non-catalogue items. In the latest version of the profile, this statement has been excluded to make clear that this type of order can also refer to eCatalogues.
    - The integration between eOrdering and eInvoicing is particularly strong. PEPPOL therefore aims to include a profile that integrates both phases. BII06 has been chosen in alignment with PEPPOL's work package on eInvoicing, based on PEPPOL's finding that the processes and functionalities of profile BII06 can be handled by the majority of the existing national solutions, thus increasing the chances to identify a number of partners for the pilot phase.
- PEPPOL also noted that there was no (CEN) profile that directly interlinks the eCatalogue with the eOrder. PEPPOL work therefore also aims to align the information requirements between order and catalogue (as described in its third work package on eCatalogues).

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134 See http://www.peppol.eu/work_in_progress/wp4-eordering and http://www.peppol.eu/work_in_progress/wp5-einvoicing

135 See http://www.peppol.eu/work_in_progress/wp4-eordering/results/eordering-standard-basic-eordering-format-and-data-structure

Actual implementation work that will allow eOrdering to be used within the PEPPOL project is currently ongoing, which will be followed by pilot testing and refining.

IDA work on eOrdering and eInvoicing

Within the IDABC Programme (**I**nteroperable **D**elivery of European eGovernment Services to public **A**dministrations, **B**usinesses and **C**itizens), interoperability challenges related to the establishment and use of pan-European eGovernment services have been examined, and specific solutions have been developed. eProcurement has been one of the areas of focus for IDABC in the past years, which has led to a number of concrete outputs.

Some of this work related to the development of guidelines and functional requirements for eProcurement[136], including work on eOrdering (specifically eCatalogues) and eInvoicing. At the time of the Action Plan's establishment in 2004, work was already underway for the creation of generic eProcurement XML schemas. The aim was to provide schemas for eOrdering, eInvoicing, eSubmission and eAwarding processes, which could be used on a voluntary basis for the development of eProcurement solutions. These XML schemas were completed and published in January 2005[137], along with a simple Java application for limited validation purposes.

The resulting schemas for the eOrdering and eInvoicing phases[138] built notably on the UK OGC model developed by the Office of Government Commerce, the Norwegian eHandel model, and the UBL standard edited by OASIS (used in Denmark at the time). They describe the business processes involved and data models for these phases using UML diagrams. Guidelines and manuals are provided to facilitate implementation work. While they do not appear to have been implemented directly at the national level, these schemes were used as inputs to OASIS UBL work (including national instantiations of this standardisation work, as will be commented further below), and were considered within PEPPOL as well[139].

IDABC has conducted several follow-ups to its eOrdering and eInvoicing work, including through two joint initiatives between the Directorate-General Internal Market and Services and the Directorate-General for Informatics of the European Commission:

- The March 2009 Analysis of Business Requirements for eInvoicing in a Public Procurement Context[140]. The report contains an overview of national eInvoicing (and eArchiving) initiatives within the Member States, and initiatives with key stakeholders. Findings on the national status will be integrated in the descriptions of Member State initiatives below. Globally, the study defines a requirements catalogue for eInvoicing, emphasising the importance of eInvoicing profiles which can be directly implemented.

[136] See http://ec.europa.eu/idabc/en/document/4721/5874

[137] See http://ec.europa.eu/idabc/en/document/4721/5874

[138] See http://ec.europa.eu/idabc/servlets/Doc?id=22198

[139] See http://www.peppol.eu/work_in_progress/wp4-eordering/results/d4-1-eordering_v-3

[140] See http://ec.europa.eu/idabc/servlets/Doc?id=32432

- The October 2009 eCatalogue Feasibility Study[141], which examined the feasibility of eCatalogues as an interoperable enabler to eProcurement, based on existing efforts at the national and transnational level, including the PEPPOL pilot. The study aimed to propose a path to eCatalogue standardisation (including compliance with the mandatory CPV nomenclature and use of the CEN/ISSS WS/BII profiles).

Apart from these studies, IDABC also organised a pilot project aiming to establish an eInvoicing and eOrdering infrastructure for internal Commission use, notably between the Directorate General DIGIT and a number of key suppliers. The project is known as e-PRIOR: **e**lectronic **Pr**ocurement, **I**nvoicing and **Or**dering[142]. Building on OASIS UBL 2.0 standards, an operational infrastructure has recently been established within this project, which is presently already being used by a limited number of IT suppliers.

To enable dissemination of the output, an open source version of the software has been developed called Open e-PRIOR, which is made available under the EU Public License[143] via the Open Source Observatory (OSOR)[144], using JBoss Application Server, jBPM as workflow engine and Spring Integration as ESB. A key ambition is to promote the adoption and reuse of this software by the Member States within their own infrastructures, and the project also liaises with PEPPOL to this end. Considering the use of an open licensing and open formats, this may prove to have a substantial beneficial effect on eInvoicing interoperability in the future, provided that further uptake could be ensured.

CEN/ISSS work on eInvoicing

One of the main complexities in the area of eInvoicing is the wide range of standards available in this field. As commented extensively in the aforementioned IDABC 2009 Analysis of Business Requirements for eInvoicing in a Public Procurement Context[145], standardisation work has been undertaken at the international level (notably UN/CEFACT[146], OASIS UBL, and ISO[147]); at the European level through IDABC's work, through the Expert Group on eInvoicing[148], and through CEN/ISSS; at the cross-national level through the Northern European Subset (NES, a specification of UBL); and via several national initiatives (FINVOICE (Finland), SveFaktura (Sweden), E2b (Norway), OIOUBL (Denmark), and FACTURAE (Spain), which will all be commented in the national descriptions below.

CEN/ISSS work on eInvoicing has mainly taken place via its eInvoicing Workshop since 2003, and since 2007 also through the CEN/BII Workshop. Efforts in 2003 focused on the VAT related field(s) in the invoice, and addressed four main issues:

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[141] See http://ec.europa.eu/idabc/servlets/Doc?id=32432

[142] See http://www.epractice.eu/cases/ePRIOR

[143] See http://www.osor.eu/eupl

[144] See http://www.osor.eu/projects/openeprior

[145] See http://ec.europa.eu/idabc/servlets/Doc?id=32432

[146] Via UN/CEFACT Trade and Business Process Groups 1 and 5 (TBG1 "Supply Chain" and TBG5 "Finance"); see http://www.unece.org/trade/untdid/sessdocs/xml.htm

[147] Via Technical Committee 68, "Financial Services", see http://www.iso.org/tc68

[148] See http://ec.europa.eu/internal_market/payments/einvoicing/index_en.htm

- The structure and content details of eInvoices when using EDI (Electronic Data Interchange);
- The use of digital signatures for eInvoicing;
- Storage of eInvoices;
- Modelling of eInvoice processes.

Conclusions from this eInvoicing workshop have been made publicly available[149], including a series of CEN Workshop Agreements (CWAs) after the conclusion of the first (2006)[150] and second phase (2009)[151] of the workshop. Phase III of the workshop was initiated in February 2010[152], and will run until the end of 2011. While efforts in the first two phases of the Workshop mainly demonstrated the need for a common stakeholder understanding of the means to implement electronic invoicing, the third phase aims to provide support for a continuing technical platform to carry out the specific European work that stakeholders require, both in terms of the technical needs expressed in the CEN eInvoicing Workshop Phase 2 and the recommendations of the Expert Group by producing a set of defined CWAs, as noted in the Phase III Business Plan.

Separate from the eInvoicing Workshop, CEN's efforts on eInvoicing are also organised in the framework of the CEN/ISSS Workshop on business interoperability interfaces for public procurement in Europe (CEN/ISSS WS/BII). This workshop aims to:

- Identify and document the required business interoperability interfaces related to pan-European electronic transactions in public procurement expressed as a set of technical specifications, developed by taking due account of current and emerging UN/CEFACT standards in order to ensure global interoperability;
- Co-ordinate and provide support to pilot projects implementing the technical specifications in order to remove technical barriers preventing interoperability.

Recent WS/BII work on eInvoicing is taking place in close collaboration with PEPPOL, as will be explained below.

PEPPOL work on eInvoicing

The objective of PEPPOL's eInvoicing work package[153] is to focus on the automated transfer of electronic invoicing documents which includes the analysis of the eInvoicing process and the implementation and piloting of arrangements for the exchange of eInvoicing documents

[149] See http://ec.europa.eu/enterprise/ict/policy/legal/bxl2006/conclusions.pdf

[150] See http://www.cen.eu/cen/Sectors/Sectors/ISSS/Activity/Pages/eInv1_CWA.aspx

[151] See http://www.cen.eu/cen/Sectors/Sectors/ISSS/Activity/Pages/eInvoicing_2.aspx

[152] See ftp://ftp.cen.eu/CEN/Sectors/List/ICT/Activities/eInv3BP.pdf

[153] Work package 5; see http://www.peppol.eu/work_in_progress/wp5-einvoicing

PEPPOL's eInvoicing deliverables aim to define the terms to allow a cross border eInvoicing pilot module to be developed, and are drafted in collaboration with CEN ISSS WS/BII and the eInvoicing Expert Group. A key concern is the implementation of a European eInvoicing (EEI) framework that allows SMEs to adopt eInvoicing in an effective way to lower their costs of entry an operation costs.

The eInvoicing work package is expected to produce the following deliverables, as described on the PEPPOL website:

- **eInvoicing: Pilot Specifications**

  The document provides an overview of WP5 eInvoicing deliverables and dependencies with a special focus on existing European invoicing and procurement initiatives. A short summary on the as-is situation on electronic invoicing in the European countries participating in PEPPOL WP5 is also provided. This document also outlines the cooperation with other PEPPOL work packages and external groups that heavily influence the invoicing solution.

- **D5.2: eInvoicing Pilot Specifications**

  The document provides an overview of WP5 eInvoicing deliverables and dependencies with a special focus on existing European invoicing and procurement initiatives. A short summary on the as-is situation on electronic invoicing in the European countries participating in PEPPOL WP5 is also provided. This document also outlines the cooperation with other PEPPOL work packages and external groups that heavily influence the invoicing solution.

- **Test, Evaluation and Pilot Execution Guidelines**

  These documents comprise methodologies for testing conformance to CEN ISSS WS/BII profiles, evaluation of pilots based on CEN ISSS WS/BII profiles and execution guidelines for planning the pilots. This Report is developed in cooperation between PEPPOL and CEN ISSS WS/BII WG 4, and is aligned with the draft report CEN ISSS WS/BII WG 4 Test Guidelines version 0.9 .

- **D5.1a: Test Guidelines**

  Deliverable 5.1a is aimed at supporting test activities in the PEPPOL work packages. The document introduces a structured method towards testing of the conformance of implementations of CEN ISSS WS/BII profiles and their specifications.

- **D5.1b: Evaluation Guidelines**

  Deliverable 5.1b is aimed at supporting evaluation activities in the PEPPOL work packages. The document introduces a structured method towards evaluation of pilots based on CEN ISSS WS/BII profiles.

- **D5.1c: Pilot Ecexution Guidelines**

  Deliverable 5.1a is aimed at supporting test activities in the PEPPOL work packages. The document introduces a structured method towards testing of the conformance of implementations of CEN ISSS WS/BII profiles and their specifications.

The eInvoicing work package has a liaison with CEN WS/eBES; it is a focal point within Europe for the standardisation of exchanging electronic business data. It is also the 'European Entry point' for the UN-ECE/CEFACT electronic business standardisation process based on the XML format. They WS/eBES therefore represents the European point of view in the global debate, including on the need for a multi-lingual and multicultural approach to B2B data interchange standardisation.

So far, the main output of this work has been the development of pilot specifications[154], which contain a description of the state of the art in the participating countries, an overview of the relevant standards, and key targets to be attained within PEPPOL. Test, Evaluation and Pilot Execution Guidelines have also been made available[155], which should allow the systematic evaluation of the work, including with respect to compliance with CEN standardisation work.

Expert Group on Electronic Invoicing

The European Commission Expert Group on e-invoicing[156] has recently presented a report[157] proposing the creation of a European Electronic Invoicing Framework (EEIF) as called for in the Terms of Reference created by the European Commission when the Group was established in late 2007. The EEIF is expected to establish a common conceptual structure, including business requirements and standard(s), and propose solutions supporting the provision of e-invoicing services in an open and interoperable manner across Europe.

The Expert Group has concluded that it makes sense to define the EEIF as this Final Report containing as it does a set of actionable recommendations and proposals, for which the support of all interested parties should be sought. It is organised as a series of layers, which all interrelate on a coherent basis. It is not itself a formal scheme or contractual framework to which entities or persons are expected to formally adhere. Rather, the EEIF is a set of coherent recommendations designed to promote the uptake of e-invoicing and which requires a response by identified stakeholders. These recommendations cover areas including:

- A vision and target picture for the e-invoicing landscape within a timeframe of 5 to 8 years, in which e-invoicing should become the dominant way of exchanging invoices.
- Business requirements, recommending to take into account the needs for SMEs as a priority.
- Regulatory requirements, recommending the harmonisation of and the provision of clarity for the legal and VAT framework across the EU on the basis of equal treatment between paper and e-invoices and supported by a Code of Practice prepared by the Expert Group.
- Interoperability, recommending the creation of an e-invoicing eco-system that provides maximum interoperability and reach.
- Standards, calling all actors within both the private and public sector adopt a common invoice content standard and data model – the UNCEFACT Cross-Industry Invoice (CII) v.2
- Recommendations for implementing the framework and its communication.

[154] See http://www.peppol.eu/work_in_progress/wp5-einvoicing/results/d5-2-einvoicing-pilot-specifications

[155] See http://www.peppol.eu/work_in_progress/wp5-einvoicing/results/test-evaluation-and-pilot-execution-guidelines

[156] See http://ec.europa.eu/internal_market/payments/einvoicing/index_en.htm

[157] See http://ec.europa.eu/internal_market/consultations/docs/2009/e-invoicing/report_en.pdf

6.5.4.3 Status at the national level

Several sources are available which describe the availability and use of eOrdering, eInvoicing and (to a lesser extent) ePayments in the Member States. While these are generally not comprehensive, collectively they can none the less provide a good overview of the current state of the art in the European Union. The main findings will be briefly summarized below, followed by a concluding section.

Country profiles – summary of availability of eOrdering/eInvoicing/ePayment infrastructure

Looking at the country profiles drafted and validated in the course of this study, we can assess how many of the 32 examined countries have established eProcurement systems supporting the post-award phases. It would be hoped that this rating would be substantially higher than in 2004, given the efforts invested by standardisation bodies as summarised above.

As noted above, in 2004:

- eOrdering based on the use of eCatalogues was supported by 8 systems;
- eInvoicing was supported by only 1 system (3%), namely the Danish DOIP platform;
- 3 national country reports (namely those of Ireland, Italy and the UK) reported using ePayments in at least one major eProcurement system.

Based on the current country profiles, the status has evolved as follows:

- 17 countries (including 16 Member States) report having implemented an eProcurement system allowing the use of eOrdering. This represents 59% of Member States, as compared to the 24% reported in 2004;
- 6 countries (Czech Republic, Denmark, Finland, Norway, Sweden and Spain) specifically report using eInvoicing in their eProcurements. While a substantial increase over the single system reported in 2004, the number thus remains limited.
- ePayments were reported to be a part of eProcurement systems in 4 countries: Ireland, Finland, Norway and the UK.

Thus, while eOrdering modules based on eCatalogues have seen significant growth, this is much less the case for eInvoicing and ePayment. Specific details will be examined further below.

PEPPOL national reports on eOrdering and eInvoicing

As a part of the aforementioned PEPPOL reports, specific details on national implementation choices were also made available, which will be briefly examined below.

With respect to eOrdering, the PEPPOL Standard Basic eOrdering report[158] provided specific details on participating countries, notably Austria, Denmark, Finland, Hungary, Italy and Norway. It noted that "two basic set-ups have emerged: a rather centralized model (e.g. Austria and Hungary) vs. a decentralized model that can be found predominantly in Scandinavian countries (e.g. Finland). Some countries (e.g. Italy) have both models implemented in parallel." Centralised models (like the Austrian e-Shop - http://www.e-shop.gv.at/) rely on a centralised website through which orders are sent using the format imposed by the site operator (e.g. PDF and/or xCBL 3.5 for the Austrian e-Shop). In decentralised models on the other hand, standardised orders can be used in a variety of systems (e.g. the Danish OIOUBL format[159], which is a national instantiation of OASIS UBL 2.0). Broadly speaking, the first approach emphasises the platform, whereas the second emphasises the order.

As a key finding, the report found that format requirements are strongly linked to local contexts, i.e. either a specific system (in the centralised model) or a specific national/regional format (in the decentralised model). Either way, cross border interoperability is presently very limited, due to the lack of commonly supported standards.

With respect to eInvoicing, the eInvoicing Pilot Specifications report[160] provided detailed information on eInvoicing requirements in three Member States participating in PEPPOL, notably Austria, Denmark and Finland. It noted that "in most EU countries, the standardisation of eInvoicing processes and documents is currently fragmented and many specifications are in use, dependent on nationality and type of business. Currently, bi-lateral agreements on how to apply standards are the basis for alignment of processes and information interchange between buyer and supplier. The focus of the CEN BII workshop is to define profiles and transaction data models that can be used without bilateral setup between buyer and seller."

In addition to the multitude of standards in use, the report highlighted that legal challenges also remain to the use of eInvoices, and that this was in fact the biggest impeding element: "The participants have concluded that the biggest hindrance to further deployment of electronic invoicing is the legal uncertainty about cross border trade. A key issue is the diversity between and within national legislations in Europe, which creates an uncertain environment for suppliers in cross border eInvoicing scenarios. In the current environment, a solution compliant with legislation in one Member States is not necessarily compliant with legislation in all Member States. This is not a level-playing field and leads to an environment where the sender of an invoice must be aware of legal situation within country where receiver is based. PEPPOL participants cannot run pilots that are not in line with current legislation in participating countries, but they can within their pilot environment, analyse impact of current legislation and recommend steps toward harmonisation and simplification. The pilot

[158] See http://www.peppol.eu/work_in_progress/wp4-eordering/results/d4-1-eordering_v-3

[159] See http://www.epractice.eu/en/cases/oioubl

[160] See http://www.peppol.eu/work_in_progress/wp5-einvoicing/results/d5-2-einvoicing-pilot-specifications

participants can on later stages put forward a proposal to run pilots in test environment to test and validate different approaches. This could be done in cooperation with proposed CEN eInvoicing3 workshop."

Thus, the PEPPOL report strongly suggests that both legal and technical barriers to the cross border use of eInvoices remain.

It should be noted that regulatory reform efforts aiming to correct the legal challenges identified in the PEPPOL study are currently underway[161]. The proposals published on 18 March 2010 maintain the requirement of prior acceptance of eInvoicing by the recipient, but emphasise the need to ensure the authenticity, integrity and legibility of eInvoices. In the new proposal, qualified signatures and EDI are merely examples of appropriate tools to satisfy these needs, but the draft also explicitly recognises that business controls can achieve the same effect, provided that these establish reliable audit trails linking invoices and supplies. This might allow for greater flexibility in the future, depending on the interpretation and application of these rules in practice (and notably if Member States will apply a common understanding of what constitutes acceptable business controls).

2009 Analysis of Business Requirements for eInvoicing in a Public Procurement Context

This study, which was already mentioned above as a joint effort between the Directorate-General Internal Market and Services and the Directorate-General for Informatics of the European Commission, contains an overview of national eInvoicing (and eArchiving) initiatives within the Member States, specifically within Denmark, Finland, Spain, and Sweden. Information was additionally provided on ongoing development work in Iceland and a private service provider in the UK.

This list matches relatively well with the list of countries using eInvoicing mentioned above (which included the Czech Republic, Denmark, Finland, Norway, Spain and Sweden), which can be considered an indication that these are indeed the leading European countries in this field. Based on the provided data, use cases can be summarised as follows:

- *Denmark* is one of the largest and most systematic users of eInvoices, reporting over one million eInvoices exchanged with the public sector by over 200.000 companies in total. Two key drivers behind this success can be identified: the adoption of a regulation on February 1st 2005, mandating the private sector to send all invoices to the public sector in via electronic means, and the adoption of a common message format known as OIOUBL (a Danish implementation of the UBL 2.0 standard[162]). The impact is significant, with time saving estimated at 12 to 20 minutes per invoice, resulting in potential yearly cost saving of approximately EUR 500.000.000. It is also worth noting that SMEs can use an eInvoicing portal to facilitate the creation of eInvoices, or alternatively they can use the services of scanning agencies. In the latter case, they issue a regular paper invoice which is sent to the agency. The scanning agency scans the paper invoice and creates a TIFF file. With the help of OCR (Optical Character Recognition, i.e. automated conversion to a text file) an electronic invoice in XML format will be created and sent to the public administrations. These scanning agencies are subsidised by the public authorities (3 EUR per invoice), making their use free to SMEs. Costs for this are compensated by cost savings at the public administrations' side.

[161] See notably the Council's Outcome of Proceedings report of 16 March 2010; http://register.consilium.europa.eu/pdf/en/10/st07/st07614.en10.pdf

[162] See http://www.epractice.eu/en/cases/oioubl and http://www.oioubl.info

- *Finland* instead operates largely via a single service provider, which is currently Itella (http://www.itella.com/), a postal services company. Suppliers can send their invoices directly to Itella or they can choose to address Itella via a web portal. Supported eInvoice formats are TEAPPS and Finvoice, a Finnish XML based standard in use since 2000[163]. While there is no law requiring the use of eInvoices, all new contracts signed between government agencies and suppliers mandate the use of eInvoices. As in Denmark, a conversion mechanism exists: suppliers under an old contract can send paper invoices to the service operator which will scan them and convert them into electronic invoices. Here too, uptake and cost savings are significant: each year public administrations receive 3 million invoices and send 40 million invoices. Currently 35% of all invoices are being received electronically.
- *Spain* has developed the Facturae format (originally known as "AEAT-CCI")[164], based on the AEAT-CCI format originated by the Spanish Banking Association and the Spanish Tax Agency. Like both aforementioned solutions, it is an XML based standard, which is however not yet aligned to the ebXML Core components and UBL. An ongoing initiative known as CCI UBL is a customization of the Facturae format to the invoice format of UBL 2.0. Contrary to the Danish and Finnish approach, no scanning/conversion mechanism has been foreseen. As was already noted above, in parallel to the Facturae initiative, there is a second eProcurement standardisation initiative in Spain known as CODICE, based on the UBL standard. This initiative will standardise other eProcurement documents than invoices.
- *Sweden* also developed its own XML based eInvoicing format, building on a subset of UBL 1.0, known as Svefaktura[165]. In addition, a transport protocol – SFTI Transportprofil Bas – was developed based on ebXML Messaging Services. Svefaktura was developed as a simplified eInvoicing format when compared to earlier EANCOM/EDIFACT implementations, which were considered too complex and demanding for smaller contracting authorities and economic operators. The approach is wholly decentralized, and there is no specific technical solutions (portal, software, etc) which is required or promoted. Since 1 July 2008, contracting authorities must be able to handle their invoices electronically, and all intra-government invoices are both sent and received electronically. In February 2009, roughly ten per cent of the supplier invoices from private companies to central government were reported to be received electronically, with the other 90% being scanned to still enable an electronic workflow.

A few observations stand out:

- All of the aforementioned standards are XML based, to improve interoperability.
- All of the aforementioned standards have been adopted at the national level and are intended for use within this scope, thus negating the interoperability benefit in cross border procurements.
- In each case, success has followed an obligation to use eInvoicing: either an obligation for economic operators to issue eInvoices, or at least an obligation for contracting authorities to accept them.
- Where figures are available, these approaches appear to have been very cost effective.
- eSignatures were noted in the report to be a significant barrier to cross border interoperability. This was in fact the reason why the Danish, Swedish and Finnish approach have chosen not to require eSignatures.

[163] See http://www.finvoice.info

[164] See http://www.facturae.es/

[165] See http://www.epractice.eu/cases/eInvoiceSweden and http://www.svefaktura.se

Globally, the main conclusion appears to be that eInvoices can be successfully implemented in eProcurement if a clear approach is taken to require the use of a specific solution. However, this approach has only proven successful at the national level. At the EU level, there is no common standard or solution to the interoperability challenges at this time.

The Northern European Subset (NES – see http://www.nesubl.eu/) was set-up in part to address this problem, having been established between a group of representatives from Denmark, Finland, Iceland, Norway, Sweden and the UK with a view of developing a subset of UBL 2.0 documents. Efforts within NES cover inter alia eInvoices and eOrders (but not catalogues), and could thus prove to be very influential in the future. Specifically, and as noted in the section of this report on eSubmission, current CEN/ISSS standardisation work (within WS/BII 2) aims at defining specifications for tools to support the implementation of profiles, including the NES customizations of OASIS UBL 2.0, with the hope that NES outputs will become a part of UBL 2.1, to improve international impact. So far however, practical impact is limited.

6.5.4.4 Conclusions on the national status with respect to the post-award phases

A red thread throughout the sections above is the complexity of the standardisation landscape in the post-award phases, specifically with respect to eOrdering and eInvoicing. In both of these areas, a multitude of national, sector specific, transnational, European and international standards exist, which largely overlap. In practice, this leads to Member States having to develop their local instantiations of the preferred standards, which results in interoperability barriers.

With respect to eInvoicing, it is clear that the Scandinavian countries have taken a strong leading role, not only through the development of national standards and through obligations to use or accept eInvoices in eProcurement, but also through transnational initiatives such as notably the NES-UBL specification, which can be expected to reduce interoperability challenges between participating countries in the future. UBL based standardisation work appears to be taking a central role: most major identified deployments in the Member States (including in Denmark, Finland, Sweden and Spain) are built on this foundation, with others following in this direction as well[166], and UBL is also the starting point for European projects such as PEPPOL and e-PRIOR. Furthermore, within CEN (in coordination with PEPPOL, e-PRIOR, NES-UBL and several national bodies) efforts are ongoing to improve convergence between national instantiations of these standards. However, so far, eInvoicing successes in practice remain limited to the strictly national level.

The same holds largely true with respect to eOrdering, where there is again a tendency to develop and promote local instantiations of international standards, which impedes interoperability.

With respect to ePayments however, there do not appear to be any real barriers in the European Union, possibly due to the influence of SEPA initiatives. None the less, this is a feature which is only rarely reported as being supported in eProcurement systems. This may be due to the fact that implementation of ePayment modules in the absence of other post-award phases (notably eInvoicing) offers only limited added value, since automated processing would at any rate not be possible.

[166] E.g. the Turkish eInvoicing project e-Fatura (http://www.efatura.gov.tr) was officially announced on 5 March 2010, and will require any eInvoices sent to the Turkish Revenue Administration to comply with UBL schemas, specifically the UBL customisation prepared by the TRLSC (Turkish Localization Subcommittee).

Matching this status against the vision of the Action Plan, it is clear that standardisation initiatives have advanced, but no convergence has materialised in practice yet with respect to eOrdering and eInvoicing. This is not a failure with respect to eProcurement alone: even outside of an eProcurement context, uptake of eCatalogues and eInvoices has been disappointing. None the less, given the relative success of eInvoicing in the Scandinavian countries based on a common standard, it seems that a more forceful approach in this area could have been more productive. This is especially true considering that convergence between existing standards is a very slow process, which is not likely to spontaneously result in a common standard in the shorter term.

6.5.5 Remaining gaps/barriers

Implementation and use of the post-award phases is still obstructed by a number of clear gaps and barriers:

Possible gap / barrier	Applicable to this phase?	If yes, explain
Lack of available infrastructure	Yes	Post-award phases are not systematically supported in all Member States. This is not problematic if this is a conscious strategic choice (e.g. because invoicing and payment are handled separately from the main eProcurement system, and no longer term procurements are organized that would use eOrdering). However, specifically with respect to invoicing (which is a crucial component of any procurement), it appears that the clear majority of Member States do not yet have a strategy for accepting and processing eInvoices.
Interoperability	Yes	For each of the post-award phases, standards are available. However, these standards are implemented differently in each country, negating their harmonizing effect to a large extent. Cross border interoperability is virtually non-existent in most cases.
Legal uncertainty	Yes	Specifically for eInvoicing, it is difficult to determine in general terms whether a system is legally valid across all Member States. European regulatory efforts have not resulted in practice in a unified market for eInvoicing services. In reality, it is still prohibitively difficult for a service provider to determine whether a specific eInvoicing solution meets the regulatory requirements for eInvoices in any given Member State, especially when considering applicable regulations with respect to the storage/archiving of such invoices. This issue is however not specific to an eProcurement context, and requires follow-up through more in-depth reforms of the European framework for eInvoices in general, as also emphasised in a 2008 opinion of the Stoiber Group[167]. Such reform efforts are presently underway[168], based on the principles of the 2009 Code of Practice on Electronic Invoicing in Europe.[169]
Trustworthiness	No	/
Accessibility	Yes	Due to the use of differing (implementations of) standards in each country, economic operators will commonly need to adapt their practices when tendering in a different Member State.

[167] 2008 Opinion of the High Level Group of Independent Stakeholders on Administrative Burdens, on the Reform of the rules on invoicing and electronic invoicing in Directive 2006/112/EC (VAT Directive); see http://ec.europa.eu/enterprise/policies/better-regulation/files/opinion_on_va_invoicing_reform_en.pdf

[168] See notably the Council's Outcome of Proceedings report of 16 March 2010; http://register.consilium.europa.eu/pdf/en/10/st07/st07614.en10.pdf

[169] See http://ec.europa.eu/internal_market/payments/docs/einvoicing/code_of_practice_en.pdf

Economic viability and use cases	Yes	The fact that such diversity in implementations of the post-award phases still exists also weakens their business case. E.g. one of the major benefits of eCatalogues should be the possibility of re-using them for multiple procurements. Cross-border re-use is however not possible in the absence of a common approach, meaning that much of the investments are not providing an optimal return.
Transparency	Yes	There is little information on the extent to which post-award phases are being used. While some Member States have clear initiatives in the areas of eInvoicing and eOrdering (typically revolving around eCatalogues), this is much less the case with respect to ePayment, where there is virtually no available data.
Market challenges	Yes	There are a multitude of service providers operational in (parts of) the post-award market, especially with respect to eInvoicing. This is a complicating factor: if a common EU level approach is chosen, this will likely have an unequal impact on these service providers. Some may not be required to change their practices, whereas others will likely need to update their approaches significantly. Thus, harmonization of the post-award phases would have a clear market impact.
Distribution of benefits	No	/

Gaps and barriers with respect to post-award phases

The main challenge remains related to the continuing standardisation work on eOrdering and eInvoicing, and while much worthwhile work has been done in this area since 2004, little progress has been made in practice, at least from a cross border perspective. To address this point, a clearer common approach at the European level seems necessary. Formalisation and a more aggressive promotion of PEPPOL outcomes (which build on existing standardisation efforts, notably within CEN, which also integrate NES UBL work) could prove to be a beneficial approach.

7 The state of play – overview of eProcurement tools

In chapter 6, the current state of play of eProcurement in the Member States was assessed on a phase by phase basis. This chapter will examine the same issue from a different angle, namely by examining some of the key eProcurement tools available to contracting authorities and economic operators: framework agreements, DPS, eAuctions, eCertificates/eAttestations, eSignatures/eID, and eCatalogues.

The structure and content of each section of this chapter will be similar to the exploration of phases in chapter 6: for each tool we will outline the scope and key benefits / challenges, followed by a summary of the evolution of the policy and implementation over time with respect to that tool. Any remaining gaps or barriers to the use of that tool will be flagged, using the same classification as above:

- **Lack of available infrastructure:** does the infrastructure permit the use of the tool?
- **Lack of interoperable infrastructure:** is the infrastructure amenable to being used by a variety of economic operators, specifically in cross border situations?
- **Legal uncertainties:** is the legal framework related to this tool sufficiently clear?
- **Trustworthiness:** can the different parties in the procurement determine the reliability of the tool?
- **Accessibility:** will the economic operators be able to use the electronic solutions being offered?
- **Economic viability and use cases:** is it clear to the economic operators and contracting authorities when the use of a specific tool makes business sense?
- **Transparency:** is there data available to determine if/when a tool is functioning adequately?
- **Market challenges:** has a common solution emerged to implement this tool? If not, then is this necessary or desirable?
- **Distribution of benefits:** is there a sufficiently equitable distribution of benefits between all stakeholders for the use of this tool?

7.1 Framework Agreements

7.1.1 Definition

7.1.1.1 Conceptual description

Due to the need to ensure fairness and transparency, public procurements can be complicated from an administrative perspective, both for contracting authorities and for economic operators. The former must ensure that all eligible economic operators have an equal opportunity of participating in the procurement, and the latter must fulfil a number of formalities in each procurement to demonstrate their suitability. Compliance with these requirements can often be burdensome and expensive on both sides[170]. A partial solution to this problem is offered by framework agreements.

Framework agreements are defined in the Directives as "an agreement between one or more contracting authorities and one or more economic operators, the purpose of which is to establish the terms governing contracts to be awarded during a given period, in particular with regard to price and, where appropriate, the quantity envisaged" (article 1.5 and 1.4 of respectively Directives 2004/18/EC and 2004/17/EC). Through framework agreements, a temporary ad hoc environment is thus created within which contracting authorities can launch specific procurements, for which offers can only be submitted by economic operators who are a part of this environment, and in which these offers must comply with the specific requirements of the environment.

Therefore, framework agreements by definition operate in two different stages:

- Firstly, a procurement is organised to establish the framework (i.e. the environment under which specific procurements can later be organised). Any eligible economic operators can submit offers, and a specified number of winning operators (one or more) will eventually be selected to participate in the framework by the contracting authority (or authorities) who are setting up the framework.
- Thereafter, procurements can be organised within the framework, under conditions which are administratively lighter than an open procedure would have been. Only economic operators who are a part of the framework agreement can submit bids, which must meet the requirements of the framework.

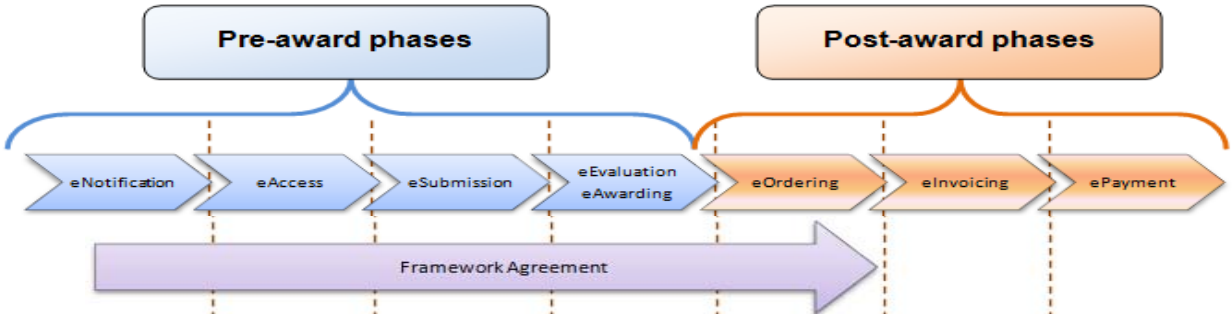
Framework agreements thus offer the clear benefit of greater efficiency: since certain key conditions are already fixed within the framework (namely the economic operators who can participate, and the terms of the framework agreement, which may include e.g. price or other product/service characteristics). This means that framework agreements can be organised more quickly and easily, resulting in a potential saving of cost and effort.

[170] See also the 2008 Stoiber Group opinion on public procurement, http://ec.europa.eu/enterprise/policies/better-regulation/files/hlg_opinion_on_ppfinal_en.pdf

On the downside, framework agreements undeniably result in a closed and more static environment, with a lower level of competition than would have been the case in an open procurement: there is only a limited number of economic operators competing, and certain terms (e.g. prices) are fixed within the framework. This could negate the benefits of framework agreements to some extent.

Globally however, framework agreements are found to have a beneficial impact on efficiency and cost[171], and it is thus unsurprising that they were already in use in 2004 in 15 out of 25 Member States[172].

Framework agreements cover a number of eProcurement phases, as shown schematically below:



Framework agreements in an eProcurement process

The organisation of a framework agreement will cover notably the pre-award phases (in blue above), from the first announcement (via eNotification) that a framework agreement will be established to the final selection of the framework participants in the eAwarding phase. Once the framework is established, procurements organised within the framework will again cover the pre-award phases (although these will obviously involve only the selected participants), and can involve the eOrdering post-award phase as well.

[171] See e.g. the 2008 comparative report of the Belgian Court of Audit (*Cour des Comptes – Rekenhof*) on framework contracts in central purchasing bodies; http://www.ccrek.be/docs/Reports/2008/2008_07_ContratsCadres_SyntheseInternationale.pdf (FR); an English language version of the summary is also available: http://ccrek.be/docs/Reports/2008/2008_07_FrameworkAgreements_ComparativeSummary.pdf

[172] See the 2004 Impact Assessment: Action Plan on electronic Public Procurement, specifically Part 1: Baseline Analysis (December 2004), p.45 and following; http://ec.europa.eu/internal_market/publicprocurement/docs/eprocurement/2004-12-impact-external-vol1_en.pdf

7.1.1.2 Provisions within the Public Procurement Directives

Relevant provisions relate notably to the following aspects:

- Rules for the calculation of the value of framework agreement. This is an important issue to determine if the establishment of a framework agreement meets or exceeds the applicability threshold of the Directives (article 9 of Directive 2004/18/EC; article 17 of Directive 2004/17/EC);
- Rules allowing contracting authorities to use framework agreements established by central purchasing bodies (article 11 of Directive 2004/18/EC; article 29 of Directive 2004/17/EC); this is one of the defining characteristics of central purchasing bodies, as examined elsewhere in this report);
- Rules with respect to the establishment and use of framework agreements as such (article 32 of Directive 2004/18/EC and article 14 of Directive 2004/17/EC). Briefly summarised, the following basic principles are established:
    - Member States are allowed (but not required) to permit the use of framework agreements.
    - The establishment of a framework agreement must be done in accordance with the rules of procedure established in the Directive up to the award of contracts based on that framework agreement. The term of a framework agreement may not exceed four years, save in exceptional cases duly justified; and framework agreements may not be used improperly or in such a way as to prevent, restrict or distort competition.
    - When awarding contracts based on a framework agreement, the parties may under no circumstances make substantial amendments to the terms laid down in that framework agreement.
    - Where a framework agreement is concluded with a single economic operator, contracts based on that agreement shall be awarded within the limits of the terms laid down in the framework agreement. Contracting authorities may consult that operator in writing, requesting it to supplement its tender as necessary.
    - Where a framework agreement is concluded with several economic operators, at least three economic operators must be included in the framework if possible. Contracts under such frameworks may be awarded either:
        - by application of the terms laid down in the framework agreement without reopening competition; or
        - if not all the terms are laid down in the framework agreement, by applying the following procedure:
            - for every contract to be awarded, contracting authorities first consult the economic operators capable of performing the contract;
            - contracting authorities then fix a time limit to allow tenders for each specific contract to be submitted in writing;
            - contracting authorities will then award each contract to the tenderer who has submitted the best tender on the basis of the award criteria set out in the specifications of the framework agreement.

Unlike other public procurement tools in this report, it should be noted that framework agreements can be used both in traditional (paper) procurements and in eProcurements; hence the lack of specific provisions in relation to eProcurement in the provisions above. In the sections below, we will examine to what extent the conversion to an electronic environment results in difficulties to the application and use of framework agreements.

7.1.2 Main opportunities and challenges of using eProcurement for this tool

7.1.2.1 eProcurement opportunities

Framework agreements are seen in many countries (see below) as useful tools to reduce procurement costs and increase the efficiency of the system. This statement is undoubtedly even more true in ICT environments such as eProcurement systems. Through a systematic application of electronic means to set up and use framework agreements, they can be used more systematically and at a larger scale. Electronically managed framework agreements can be used to serve more contracting authorities and more economic operators, thus reducing one of the main weaknesses of frameworks agreements, namely the problem that a reduced number of economic operators are competing within the framework. More operators mean (at least theoretically) ultimately more competition, reduced prices, better quality of the goods and services provided and increased overall efficiency. The possibility to reach economies of scale, then, should not be neglected. At the same time, however, we have to take into account the fact that framework agreements are 'closed systems', i.e. once established, the participating economic operators are fixed, as are other modalities established via the framework.

7.1.2.2 eProcurement challenges

As noted above, a number of issues are addressed by the Directives, particularly the possibility of organising framework agreements within dynamic purchasing bodies, the calculation of the value of framework agreements, and a number of basic rules for their establishment and use. However, no specific provisions are dedicated to the use of electronic means in framework agreements.

This is because framework agreements are a form of contractual arrangement, rather than an eProcurement tool as such. As a result, it is possible to use electronic means to establish and use framework agreements, in the same way and under the same terms as for other procurements, notably in open procedures (in which any interested economic operator can submit a tender). There are thus very few eProcurement challenges which are specific to framework agreements. The main issue is converting existing (paper based) processes and practices for the establishment and use of framework agreements to an electronic environment. This will particularly be the case for the use of framework agreements by dynamic purchasing bodies, which allow framework agreements to be used electronically at the greatest scale, and which therefore allow the largest benefits to be realised.

Given that there are few specific eProcurement challenges, it was to be expected that the Action Plan would only address framework agreements in a summary manner, if at all.

7.1.3 The 2004 status and vision of the Action Plan

7.1.3.1 2004 status

The analysis of the situation and status in 2004, as expressed by the 2004 Impact Assessment, was already briefly mentioned above: framework agreements were already noted to be in use in 2004 in 15 out of 25 Member States[173]. Usage patterns varied from country to country, with some Member States using them at the national, regional or local level, as noted in the table below from the Impact Assessment:

National level	Regional level	Local level	No use
Austria			Republic of Cyprus
Belgium			Czech Republic
Denmark	Denmark	Denmark	Estonia
Finland	Finland	Finland	France
Germany	Germany	Germany	Greece
Hungary	Hungary	Hungary	Lithuania
Ireland		Ireland	Luxembourg
Italy	Italy	Italy	Malta
Latvia		Latvia	Slovenia
The Netherlands	The Netherlands	The Netherlands	
Poland			
Portugal	Portugal	Portugal	
		Slovakia	
Spain	Spain		
Sweden	Sweden	Sweden	
United Kingdom	United Kingdom	United Kingdom	

Use of framework agreements in 2004, Table 3.5 from the 2004 Impact Assessment

The 2004 Impact Assessment also noted that framework agreements at the national level were often used by central public procurement bodies in countries such as Denmark, Finland and the UK, thus making them available by all public authorities. In the sections below, we will assess to what extent this trend has expanded. Data on actual quantitative usage (specifically budgets allocated via

[173] See the 2004 Impact Assessment: Action Plan on electronic Public Procurement, specifically Part 1: Baseline Analysis (December 2004), p.45 and following; http://ec.europa.eu/internal_market/publicprocurement/docs/eprocurement/2004-12-impact-external-vol1_en.pdf

framework agreements) was limited in 2004 however, so the data on availability is of limited use to determine impact.

7.1.3.2 Vision of the Action Plan and indicators for success

We already noted above that framework agreements are not an eProcurement tool as such, but rather a contractual modality in which electronic means could be use in similar ways as in other forms of procurements. It is therefore not surprising to see that the Action Plan does not contain specific measures addressing framework agreements explicitly.

In fact, the Action Plan only mentions framework agreements on two occasions:

- Firstly, the Action Plan warned against the "potential excessive or abusive centralisation of purchases, inappropriate use of electronic auctions and preferences for closed purchasing systems (e.g. framework agreements) over open systems. Such practices may cancel out the benefits from increased efficiency." Thus, while the Action Plan recognised the value of framework agreements as a modality for improving efficiency, there were also concerns about the negative impact on competition of such closed systems.
- Secondly, the Action Plan contained a specific measure calling for the Commission to launch a study on eCatalogues in dynamic purchasing systems and electronic framework agreements using work by CEN/ISSS under the IDABC programme. This measure obviously targets eCatalogues specifically rather than framework agreements as such; none the less, the results of this study[174] will be considered in the sections below.

Given that the Action Plan thus does not contain specific measures aimed towards framework agreements, the issue of defining indicators for success is moot.

[174] The resulting study was completed in 2007, and comprises three volumes and the executive summary:

• Executive summary: http://ec.europa.eu/internal_market/publicprocurement/docs/eprocurement/feasibility/ecat%20-exec-summary_en.pdf

• Vol. I – eCatalogues: Report on the state of play: http://ec.europa.eu/internal_market/publicprocurement/docs/eprocurement/feasibility/ecat-vol-1_en.pdf

• Vol. II - eCatalogues: Report on standardisation activities: http://ec.europa.eu/internal_market/publicprocurement/docs/eprocurement/feasibility/ecat-vol-2_en.pdf

• Vol. III – eCatalogues: Report on preliminary functional requirements: http://ec.europa.eu/internal_market/publicprocurement/docs/eprocurement/feasibility/ecat-vol-3_en.pdf

7.1.4 Current status and evolution

Recital 16 of Directive 2004/18/EC makes it clear that Member States may decide whether or not contracting authorities may use framework agreements, taking into account the existing different circumstances. In other words, Member States are not obliged to adopt regulations permitting the use of framework agreements. In practice, as shown through the country reports collected for the purposes of this evaluation, all Member States have adopted regulations permitting the use of framework agreements under their national laws[175], as have the EEA countries (Liechtenstein, Norway and Iceland) and in the candidate countries Croatia and Turkey. Very often the national legislation is to a great extent consistent of fully consistent with the Directives, and in some situations it is even identical (e.g. in Lithuania, Latvia).

As we noted that in 2004 several Member States did not support the use of framework agreements (Cyprus, Czech Republic, Estonia, France, Greece, Lithuania, Luxembourg, Malta, Slovenia), the situation has thus evolved positively in the last 6 years. While most Member States have adopted the relevant provisions from the Directives more or less directly, some countries took advantage of the freedom left by the Directives to implement the EU legislation in a more original way. Usually, the impact of these changes is relatively small. By way of example:

- In Austria, policies are aimed towards leveraging the impact of framework agreements to support eProcurements. The Austrian Federal Procurement Company (FPC) is tasked with negotiating framework contracts and making them available to federal and other administrations. Use of the central framework contracts is mandatory for federal authorities for specific goods and services, but several states (Bundesländer) and a large number of municipalities have joined. The systems serve 12.000+ users; in 2009, the combined purchasing volume of FPC amounted to EUR 830m with savings of EUR 178m in procurement prices alone.
- In the Czech Republic, the national lawmaker stipulated that dynamic purchasing systems cannot be used to set up a framework agreement. In addition, the national Act on Public Procurement states that “the contracting entity shall not require proving compliance with the qualification requirements for the tenderer during awarding public contracts under a framework agreement.”
- In Greece, framework agreements are possible under the general national legislation (implementation of the EU Directives) and also under a specific regulation on contracts of studies and services relating to the design of public works. A specific provision (Art. 8 of Statute 3316/2005) provides that this procedure may be followed when a series of similar studies or services is needed, yet such matters as, for instance, the contract's technical specifications cannot be determined whereas prices and quantities can. Such framework agreements, whose duration cannot exceed three years, are usually entered into for the execution of support studies (see below).

[175] It should be noted however that the statistics provided for Belgium do not relate strictly to framework *agreements* (which are not yet legally possible in Belgium) but rather to framework *contracts.* The difference lies in the scope: framework contracts are concluded between a single contracting authority and a single economic operator for a limited duration of time, whereas framework agreements can involve one or more contracting authorities and one or more economic operators. This distinction has however not been made in the notices filed by Belgian contracting authorities, who (incorrectly) report to be using framework *agreements*, as will be noted below. This minor error was also made in the 2004 data quoted above.

- In Italy, the applicable national legislation states that framework agreements can be adopted only for maintenance works and not for projects and other deliveries of intellectual nature.
- Spain introduced some interesting specifications as well. In particular, registration in the Official Register of Tenderers and Classified Companies is required in order to submit via electronic means proposals for the open proceedings for the conclusion of framework agreements. In addition, framework agreements will be published in the buyer profile and in the official journal of the State, Autonomous Community or Province concerned.
- In Sweden, framework agreements play a substantial role from the policy and legislative point of view, as government agencies are required to enter into framework agreements unless they find another way of procuring which is more beneficial in terms of cost savings and efficiency. Thus, according to the Swedish legislation, framework agreements are the preferred instrument for public procurement since they are deemed to reduce costs for public administrations and to increase the quality and efficiency of the goods and services supplied. It is also worth noting that a centralised authority has the duty to verify that these values are respected by the different government agencies.

These elements show that the content of the Directives may be adapted to the specific conditions of the Member States, in order to take into due account the specificities of each country/market. While most of the national inputs refer to details, the Swedish example shows that the regulatory framework can also be used to heavily promote the use of framework agreements. While quantitative data is scarce, some statistics can none the less be provided on the basis of TED data, i.e. based on the identification of framework agreements being used in eNotices.

A first indicator that can be provided is the number of framework agreements reported to be used in each Member State. In the section above we already indicated that the possibility of using framework agreements was included in all national legislations. Looking at whether this option is used in practice, the following table provides specific figures for the most recent four years:

Number of framework agreements per country				
Country	2006	2007	2008	2009
Austria	87	161	213	202
Belgium	183	284	416	499
Bulgaria	0	37	138	42
Cyprus	0	3	1	4
Czech Republic	56	143	178	291
Denmark	347	398	494	572
Estonia	9	17	43	45
Finland	36	20	47	85
France	665	2334	6413	13009
Germany	960	1186	1387	1634
Greece	27	31	27	44
Hungary	20	14	11	17
Iceland	8	18	17	31

Number of framework agreements per country				
Ireland	139	199	271	231
Italy	124	91	126	185
Latvia	42	70	65	48
Lithuania	5	10	12	17
Luxembourg	0	0	0	43
Malta	2	3	0	1
Netherlands	640	943	1074	1321
Norway	48	971	1091	1212
Poland	66	118	85	148
Portugal	5	4	21	42
Romania	0	704	1121	989
Slovakia	115	183	205	193
Slovenia	14	239	266	324
Spain	53	81	278	724
Sweden	667	360	709	380
United Kingdom	2518	2707	3001	3230
	6836	11329	17710	25563

Overview of the evolution in the number of framework agreements notified per country in from 2005-2009

The table above indeed includes all Member States (as well as the EEA countries Norway and Iceland), suggesting that all Member States are indeed using framework agreements in practice[176].

An interesting secondary analysis can be done by examining the percentage of framework agreements concluded in each country as compared to the total number of procurements notified by that country. This would allow us to determine which countries use more framework agreements than might be expected based on their procurement activities in general. Looking at the figures for 2009, the following overview emerges:

Member State	Framework agreements in 2009	Total number of procurement notices received in 2009 (structured and unstructured)	% of procurement notices which relates to a framework agreement
Austria	202	7067	2,86
Belgium	499	9049	5,51

[176] As noted above, the data with respect to Belgium is incorrect, as these notices do not relate strictly to framework *agreements* (which are not yet legally possible in Belgium) but rather to framework *contracts.* The difference lies in the scope: framework contracts are concluded between a single contracting authority and a single economic operator for a limited duration of time, whereas framework agreements can involve one or more contracting authorities and one or more economic operators.

Member State	Framework agreements in 2009	Total number of procurement notices received in 2009 (structured and unstructured)	% of procurement notices which relates to a framework agreement
Bulgaria	42	4301	0,98
Cyprus	4	1050	0,38
Czech Republic	291	8551	3,40
Denmark	572	4161	13,75
Estonia	45	1334	3,37
Finland	85	5941	1,43
France	13009	88427	14,71
Germany	1634	44020	3,71
Greece	44	5723	0,77
Hungary	17	6393	0,27
Ireland	231	2645	8,73
Italy	185	21071	0,88
Latvia	48	1821	2,64
Lithuania	17	3365	0,51
Luxembourg	43	833	5,16
Malta	1	458	0,22
Netherlands	1321	9769	13,52
Poland	148	41130	0,36
Portugal	42	3009	1,40
Romania	989	10638	9,30
SKlovakia	193	2768	6,97
Slovenia	324	3672	8,82
Spain	724	26855	2,70
Sweden	380	8224	4,62
United Kingdom	3230	26757	12,07
ALL MS	25563	349032	7,32

Overview of the percentage of framework agreements concluded in each country as compared to the total number of procurements notified by that country in 2009

The table shows that 7,32% of procurement notices relates to framework agreements. Several countries significantly exceed this percentage, and can be considered extensive users (marked in green in the table above): notably, usage in Denmark, France, the UK and the Netherlands all exceed 10%. Inversely, a slightly larger group uses framework agreements to a much smaller extent: Bulgaria, Cyprus, Greece, Hungary, Italy, Lithuania, Malta and Poland remain below 1%.

However, the importance of this statistic should not be overestimated. Apart from the fact that it relies on the submitted notice being correct, it should particularly be kept in mind that it does not indicate to what extent the framework was used in practice. It is both possible to have a small number of framework agreements which are used extensively (i.e. for multiple procurements) or to have a large number of framework agreements which are used rarely or never. In the sections below we will try to examine the specific usage patterns in the examined countries.

A second interesting question that can be determined based on TED statistical analysis is the number of economic operators involved in a specific framework agreement. This is important because framework agreements are by definition closed environments, which implies that competition is inherently negatively impacted. This negative effect can be negated to some extent through the inclusion of multiple economic operators, which can then compete within the framework.

The following tables provide an overview of the number of framework agreements with a single versus multiple economic operators (top: absolute numbers; bottom: relative percentages):

Framework with a single operator				
	2006	2007	2008	2009
Yes	2120	5094	9410	15496
No	1732	4268	5545	6346
Blank	2984	1967	2755	3721
Total	6836	11329	17710	25563

Evolution of the absolute number of framework agreements with a single operator notified to the OPOCE between 2006-2009

Framework with a single operator				
	2006	2007	2008	2009
Yes	31,01%	44,96%	53,13%	60,62%
No	25,34%	37,67%	31,31%	24,82%
Blank	43,65%	17,36%	15,56%	14,56%
Total	100,00%	100,00%	100,00%	100,00%

Evolution of the relative proportion of the number of framework agreements with a single operator notified to the OPOCE between 2006-2009

The statistics show that in 2009, slightly over 60% of framework agreements was concluded with only a single operator. This figure has increased steadily in each of the past four years. The statistic is worrisome, as it seems to confirm the Action Plan's concern that closed environments would indeed limit competition in practice. When concluded with a single operator, a framework agreement can realise significant benefits with respect to efficiency (since neither the contracting authority nor the

economic operator has to go through all administrative efforts of an open procurement), but at the detriment of competition. Based on the statistic above, current practice seems to favour efficiency over competition.

When looking at the breakdown of framework agreements concluded with multiple economic operators (in which there is thus at least a certain degree of competition within the framework), the following overview can be provided (top: absolute numbers; bottom: relative percentages):

Framework with multiple operators				
	2006	2007	2008	2009
Replies	513	1059	1353	1479
Number of operators				
1	28	20	28	42
2	59	88	142	142
3	207	537	703	719
4	43	84	106	110
5	51	102	146	119
6	36	48	48	80
7	4	10	16	24
8	9	25	18	27
9	6	12	8	12
10	24	53	31	47
>10	46	80	107	157
Total	513	1059	1353	1479

Evolution of the absolute number of framework agreements with multiple operator notified to the OPOCE between 2006-2009

Framework with multiple operators				
	2006	2007	2008	2009
Replies	513	1059	1353	1479
Number of operators				
Unknown[177]	5,46%	1,89%	2,07%	2,84%
2	11,50%	8,31%	10,50%	9,60%
3	40,35%	50,71%	51,96%	48,61%
4	8,38%	7,93%	7,83%	7,44%
5	9,94%	9,63%	10,79%	8,05%
6	7,02%	4,53%	3,55%	5,41%

[177] This row contains replies which answered "NO" to the question "Framework with a single operator?"; thus, it is only certain that there was more than one.

7	0,78%	0,94%	1,18%	1,62%
8	1,75%	2,36%	1,33%	1,83%
9	1,17%	1,13%	0,59%	0,81%
10	4,68%	5,00%	2,29%	3,18%
>10	8,97%	7,55%	7,91%	10,62%
Total	100,00%	100,00%	100,00%	100,00%

Evolution of the percentage of the number of framework agreements with multiple operators notified to the OPOCE between 2006-2009

The tables show that in 2009, at least[178] 58,21% of framework agreements were concluded with 3 economic operators or less, whereas at least 38,95% involved four or more. This is a mild decrease compared to the 2008 percentage, when at least 62,46% of agreements involved 3 economic operators or less, versus 59,02% in 2007 and 58,85% in 2006. The largest number of framework agreements is concluded with three economic operators (around 50% for the most recent three years), which matches the Directives' requirement to conclude framework agreements with at least three economic operators whenever possible in cases where multiple economic operators are involved.

More interesting is the increase of framework agreements involving more than 10 economic operators, which saw a significant jump in 2009, passing the 10% threshold for the first time. This figure would likely include a significant number of framework agreements concluded by central purchasing bodies (CPBs), since the core activity of these entities consists precisely of conducting efficient procurements on behalf of other contracting authorities. Framework agreements could be an important tool in this respect: if framework agreements can be concluded with a large number of economic operators, then this combines the beneficial efficiency impact with an acceptable amount of competition.

An additional statistic on this topic can be provided based on the number of notices which indicate that the framework agreement allows the contracting authority to conclude procurements on behalf of a separate contracting authority, or in other words, the number of framework agreements concluded by a CPB. This is indicated in the following table:

Count of framework contracts where awarding CA can act for other CAs				
	2006	**2007**	**2008**	**2009**
Yes	791	1136	1725	2856
No or blank	6045	10193	15985	22707
	6836	11329	17710	25563

Evolution of the absolute number of framework contracts notified to the OPOCE where awarding CA can act for other CAs between 2006-2009

Percentage of framework contracts where awarding CA can act for other CAs

[178] This estimate does not account for the 'Unknown' answer, which may also include frameworks with 2 or 3 economic operators.

	2006	2007	2008	2009
Yes	11,57	10,03	9,74	11,17
No or blank	88,43	89,97	90,26	88,83
	100,00	100,00	100,00	100,00

Evolution of the percentage of framework contracts notified to the OPOCE where awarding CA can act for other CAs between 2006-2009

The table partially confirms the impression above, which is that 2009 saw an appreciable increase in the number of framework agreements concluded by CPBs (a jump from 9,74% to 11,17%). However, the figure is not exceptionally high when considering the 2006 figure of 11,57%. Generally, the number of framework agreements concluded by CPBs appears to be relatively stable at around 10%. Thus, the increase in use of framework agreements cannot be exclusively attributed to CPBs.

Finally, with respect to the primary use cases of framework agreements, the following statistic can be provided:

Absolute number					
Contract	**Code**	**2006**	**2007**	**2008**	**2009**
Works	1	465	554	1027	1534
Supply	2	3358	5690	8517	11778
Combined[179]	3	0	0	0	0
Services	4	3013	5085	8166	12251
Total		6836	11329	17710	25563

Evolution of the absolute number of framework contracts broken down per procurement type as notified to the OPOCE between 2006-2009

In percentages					
Contract	**Code**	**2006**	**2007**	**2008**	**2009**
Works	1	6,80%	4,89%	5,80%	6,00%
Supply	2	49,12%	50,23%	48,09%	46,07%
Combined	3	0,00%	0,00%	0,00%	0,00%
Services	4	44,08%	44,88%	46,11%	47,92%
Total		100,00%	100,00%	100,00%	100,00%

Evolution of the percentage of framework contracts broken down per procurement type as notified to the OPOCE between 2006-2009

Generally, the tables show that framework agreements are presently used in roughly equal measure for supply and services contracts, with works contracts taking a distant third place. It is however interesting to note that this equality is a relatively recent phenomenon, as supplies were the largest post until 2008. It thus seems that framework agreements are not only used for the procurement of

[179] The answer 'combined' is no longer available on the standard forms; hence the lack of data on this framework type.

commodity goods as one might expect, but that they are increasingly also used for the procurement of services.

7.1.4.1 Policy preferences for framework agreements

The practical use of framework agreements in the countries covered by this Study deserves particular attention, since it reflects their policy preferences. These agreements were reported via the national profiles to be widely used in many countries, including Austria, the UK, Belgium, Italy, Portugal, Spain, France and Sweden – in particular, in Sweden, where the systematic use of framework agreements is seen as the privileged instrument to reduce costs and to improve the overall efficiency of public procurement. Quite frequently, information about existing framework agreements is made widely available on the Internet, through a dedicated portal. In Norway too, framework agreements are widely used at the national/regional/local level of government, and it is interesting to point out that in this country framework agreements are regulated in the same provision of the relevant Act together with dynamic purchasing systems.

Several examples of best practices in the field of framework agreements can be found in the national profiles. In Finland, where the use of these agreements is very strongly encouraged and actually Hansel Ltd (see above) entered into 80 framework agreements with 600 suppliers for a value (of purchased goods and services) of 460 million Euros in 2008. In Denmark the national procurement body SKI (see above) entered into framework agreements with 300 suppliers. In Estonia framework agreements are used by RHK (Public Procurement Centre)[180], as well as in France[181] and Greece (usually for the execution of support studies[182]).

Similar arrangements are being implemented in other countries: the implementation of eProcurement in Cyprus relies on the use of framework agreements, including a framework agreement based electronic marketplace within which all contracting authorities are enabled to click-and-shop to satisfy most of their common use item needs. According to the public procurement authorities of Cyprus, then, "the nature of framework agreement operation also secures an increase in the quality of goods the contracting authorities are purchasing.[183]" Similar considerations apply to Lithuania, where framework agreements are widely used in practice, specially to support procurements via the Central Project Management Agency, and where the integration between eCatalogues and framework agreements has been planned and implemented[184].

The above information indicates the current state of the art and the potential evolutions in the field of framework agreements. First of all, it has to be said that these agreements are perceived almost everywhere as tools useful to reduce costs and inefficiencies in public procurement. This is evidenced by the fact that the legislation of all 32 countries analysed by this Study regulate framework agreements, and that even non-EU Member States introduced these agreements in their national legal systems as indicated by the 2004 Directives.

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180 http://www.ppp.gov.lv/fetch_1858.html

181 http://www.publictendering.com/fiche-pratique-france-laccord-cadre/

182 http://www.kelemenis.com/pdf/pub26.pdf.

183 http://www.epractice.eu/en/node/289616

184 http://www.epractice.eu/en/cases/cpolt

The perception that framework agreements are very useful tools to improve the public procurement of a country is very clear especially in some Nordic States like Sweden, Finland and Norway. As regards, in particular, Sweden, national public procurement is characterised by the competition between several private entities acting as central purchasing bodies and, from a different perspective, by the strict controls by the national Competition Authority and by the Swedish National Financial Management Authority in order to avoid inefficiencies, useless costs and corruption by officers of the purchasing authorities.

The importance of framework agreements together with the dominating role of a national purchasing body is also very clear in Austria, where the freedom of government agencies is limited, since the usage of the central framework agreements is mandatory for federal agencies, as we pointed out above. Federal countries and countries with strong regional autonomy, in general, are more likely to accept that regional public procurement follows other trends and uses other tools than central government's public procurement. In particular, regions and autonomous communities are not required to adopt the framework agreements entered into by the national central purchasing body, if any: this is the case, for instance, in Austria, Belgium, and Spain.

Briefly summarising the evolution of framework agreements in light of the analysis performed above, it seems clear that the adoption of a legal framework for framework agreements has also accelerated their use in an electronic environment in a number of countries, with key examples being the partially mandatory regimes in Sweden and Austria, and the extensive supporting infrastructures (typically via central purchasing bodies) established in these and other countries, including Belgium, Denmark, Finland, Italy, Norway, and the UK. Framework agreements will increasingly go 'online' (see e.g. current activities in Cyprus and Lithuania), and will more and more interact with other tools such as eCatalogues. Most importantly, where figures are made available, they tend to indicate efficiency increases resulting in operational cost savings. Thus, the net effect of framework agreements is largely perceived as being beneficial.

7.1.4.2 The role of central purchasing bodies in establishing and exploiting framework agreements

The role of central purchasing bodies in the countries covered by this Study must be highlighted since these bodies often play a pivotal role in establishing and exploiting framework agreements. We said above that the Directives let the Member States free to decide whether or not central purchasing bodies may enter into framework agreements on behalf of purchasing authorities. The Directive thus provides Member States with a spectrum of possibilities: they can, first of all, simply allow contracting authorities to use framework agreements; secondly, they may provide central purchasing bodies with the mission to enter into framework agreements on behalf of several contracting authorities. In other words, Member States shall assess which level of flexibility and autonomy they want to confer to the different national, regional or local contracting authorities. This assessment will depend, *inter alia*, on the grade of autonomy granted by the different national constitutions (or by other legislative sources) to regional and local authorities and, from a different perspective, to the different national administrations (ministries, government departments, etc.). This possibility of using central purchasing bodies to establish framework agreements for the benefit of other contracting authorities exists in many countries, as was signalled in the overview above.

The Finnish model is based on a central purchasing body (Hansel Ltd) for the framework agreements of the entire government's procurement functions[185]. In Italy framework agreements are widely used through the eProcurement programme of the national central purchasing body (at least for the procurement functions of the central government departments)[186], as well as in Portugal. In Spain, then, the State Central Acquisition System relies on framework agreements with the suppliers registered in the dedicated national registry (see above), and contracting authorities are free to establish their own framework agreements with the suppliers, either on their own or with other contracting authorities. In other words, in Spain the contracting authorities are not obliged to enter into framework agreements via the (or a) central purchasing body.

The situation is radically different in Austria (similarly to Finland), where the impact of framework agreements is leveraged by the eProcurement infrastructure of the Federal Procurement Company, that negotiates framework agreements and make them available to other administrations[187]. In particular, usage of the central framework agreements is mandatory for the federal agencies, but several Provinces and Municipalities have joined the system and make use of these framework agreements.

The situation is similar in Denmark, where the national procurement body SKI negotiates framework agreements on behalf of all Danish governmental organisations. Also in Ireland, framework agreements are used and are supported via the national eProcurement portal, as well as in Lithuania where framework agreements are used in practice to support procurements via the portal of the Central Project Management Agency (acting as central purchasing body). It has to be highlighted that in Lithuania the sellers of some specific products that signed a framework agreement with the Agency are allowed to put their product specifications in the national eCatalogue (thus clearly there is interoperability between framework agreements and the existing eCatalogue system, as discussed elsewhere in this report). Finally, also in Romania framework agreements are supported in practice through the national eProcurement system SEAP.

Some other countries, however, follow a decentralised model in which no central purchasing bodies have the duty to enter into framework agreements on behalf of contracting authorities. Estonia is an example of this model, where there is no central body in charge of framework agreements; there are instead several examples of cooperation between different authorities and coordination incentives in several ministries and their areas of government. Similarly in Sweden there is no central purchasing body, but rather several private platforms which can compete with each other, including by offering framework agreements to contracting authorities (in other words, there are instead many public procurement portals set up by different private entities).

In some other countries the interaction between framework agreements and central purchasing bodies has been planned and/or will be implemented in the (near) future. In Cyprus the central public procurement portal will support purchases through framework agreements, deemed to be one of the pillars of the public procurement/eProcurement currently under development, together with eCatalogues. In Bulgaria, similarly, an action plan has been developed with the aim to develop and increase the use of framework agreements. With this regard, a future central purchasing body would use framework agreements as one of its primary tools. However, in Bulgaria some of the biggest contracting authorities already use framework agreements in their public procurement practice.

[185] See http://www.hansel.fi/fi/palvelut/tilha

[186] See http://www.consip.it/on-line/Home.html

[187] See https://portal.bbg.gv.at/at.gv.bbg.PortalUI/

In conclusion, many of the aforementioned cases of successful adoption of framework agreements rely on the intervention of a central purchasing body. While this is generally reported as being an efficient approach, it also closely mirrors the concern in the Action Plan that there might be "potential excessive or abusive centralisation of purchases, inappropriate use of electronic auctions and preferences for closed purchasing systems (e.g. framework agreements) over open systems." However, the Action Plan was mainly concerned over this problem arising due to the possibility of cancelling out the benefits from increased efficiency in a closed system. To the extent that quantitative information is available, experiences with framework agreements appear to be largely positive; thus, there appear to be little to no indicators of the negative impacts of decreased competition through inappropriate use of framework agreements.

7.1.5 Remaining gaps/barriers

As noted above, the 2004 Action Plan does not contain many remarks and considerations directly related to framework agreements. However, some challenges can still be developed.

Possible gap / barrier	Applicable to this phase?	If yes, explain
Lack of available infrastructure	No	Not an issue, since use of framework agreements is optional.
Interoperability	No	No issues specific to framework agreements.
Legal uncertainty	No	/
Trustworthiness	No	/
Accessibility	No	/
Economic viability and use cases	Yes	There is no clear perspective yet on the types of goods/works/services where framework agreements lead to optimal results.
Transparency	Yes	While there is statistical data on framework contracts via eNotifications, this only covers frameworks above EU thresholds. In addition, the economic impact (are cost savings being realized through the use of framework agreements?) is not clear on the basis of this data: while framework agreements are generally agreed to be beneficial to efficiency, the impact of decreased competition is less clear. More transparency on this point (i.e. pricing comparisons between open and framework procurements) would be desirable.
Market challenges	Yes	Framework agreements are closed environments, and thus improve efficiency at the expense of competition. The data above shows that a majority of 60% of framework agreements is concluded with only a single economic operator, which would eliminate any competition. Whether this has a negative impact on price or quality in practice is unclear; there are no real indications to show that this expected effect occurs in practice.
Distribution of benefits	No	/

Gaps and barriers with respect to framework agreements

7.2 Dynamic Purchasing Systems (DPS)

7.2.1 Definition

7.2.1.1 Conceptual description

In the section above, we discussed how framework agreements can facilitate procurements relating to the frequently repeated purchase of relatively common items or services, such as office supplies or travel arrangements. However, a key downside of framework agreements is their closed nature: the number of contracting authorities and participating economic operators is fixed once a framework is established, thus reducing the potential for competition, which may negatively impact prices and/or quality. This characteristic is largely a consequence of the fact that framework agreements were initially conceived to operate in traditional (paper) procurements, and still need to be usable in such environments. A paper environment is less capable of dealing with flexible and open models in which economic operators can leave and join over time and update the terms under which they are willing to work, since this would mean that accession conditions would need to be judged every time again. In an electronic environment, this barrier could be lowered significantly due to the possibility of automating much of this process.

In this context, so-called dynamic purchasing systems or DPS were created. A DPS is defined in article 1.6 of Directive 2004/18/EC and article 1.5 of Directive 2004/17/EC as “a completely electronic process for making commonly used purchases, the characteristics of which, as generally available on the market, meet the requirements of the contracting authority, which is limited in duration and open throughout its validity to any economic operator which satisfies the selection criteria and has submitted an indicative tender that complies with the specification.”

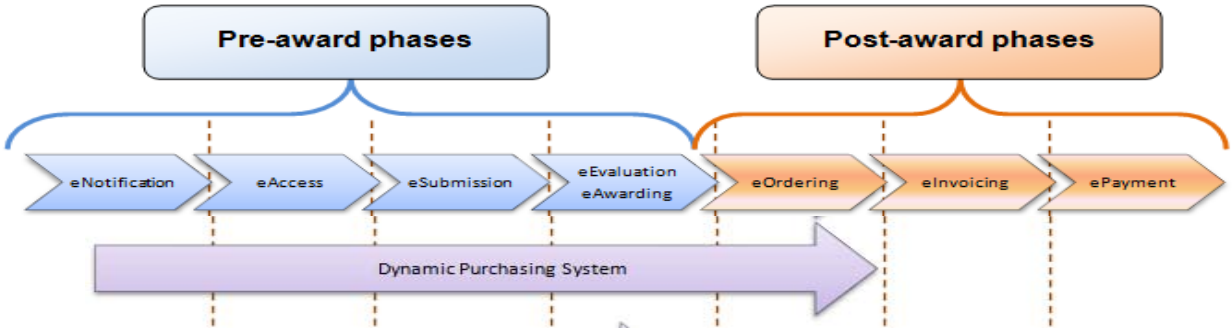
In essence, a DPS can be thought of as an electronic open framework agreement, i.e. a procurement system in which economic operators that have joined the DPS via an indicative tender can choose to announce the availability of standardised goods, services or works which meet the requirements defined by the contracting authority that set up the DPS, and which can thereafter be used by that contracting authority to easily and electronically acquire such goods, services or works from the most favourable economic operator. Contrary to a framework agreement, new economic operators can join a DPS after its establishment by submitting an indicative tender which meets the requirement of the DPS. The DPS shares the characteristic with framework contracts that accession to a DPS does not necessarily lead to a concrete procurement as such; i.e. an economic operator could join a DPS and offer its goods or services to contracting authorities without ever successfully concluding a procurement contract for these products or services with an economic operator, e.g. because there is no demand for the goods or services being offered, or because another economic operator offers more favourable terms.

As such, DPS constitute a type of electronic marketplace with its own sets of advantages and disadvantages. From the perspective of the contracting authority, the DPS offers the benefits of bringing framework contracts to an electronic context in an open format: a multitude of economic operators can be integrated, thus ensuring greater choice and competition, and resulting (theoretically) in improved quality and/or lower prices. Beyond this aspect, a DPS can also evolve more easily over time by incorporating new economic operators whose products and services meet the conditions of the DPS, ensuring that the DPS does not remain the playing ground of exclusively the economic operators

who met the requirements at the time of establishment of the DPS (unlike a framework agreement). In addition, DPS allow contracting authorities to more easily break down procurements into atomic parts: whereas a traditional purchase of e.g. 50 desks, 50 chairs and 50 computers would traditionally need to be organised in either a single procurement (possibly broken down into several optional lots) or as multiple separate procurements (e.g. 3 procurements, one for each type of item), a DPS allows the contracting authority to merely enter its needs into the DPS and more easily benefit from the optimal bids for each sought product type, without having to meet the administrative requirements of setting up multiple full procurements or a single multi-lot procurement. Thus, there is the advantage of greater flexibility, administrative simplification and thus potentially cost savings.

From the perspective of the economic operators, participation in a DPS allows them to potentially participate in multiple procurements within the DPS after they've met the original participation requirements in a relative flexible way via the indicative tender, i.e. without necessarily have to go through all of the administrative steps of a traditional public procurement. This is particularly advantageous for SMEs, for whom administrative formalities can be a more significant barrier to participation than to larger undertakings that can dedicate more resources to meeting such requirements. Specifically for these economic operators, the system based on indicative tenders under the DPS may prove to be a stimulus to participation. In addition, DPS can flexibly support the use of other eProcurement tools, including eCatalogues (i.e. allowing a contracting authority to directly upload its catalogue of products or services into the DPS, thus making it easier to communicate their key characteristics) or punch-out systems (i.e. systems that allow the DPS to obtain these key characteristics directly from an information system managed by the economic operator). Thus, a number of innovative solutions can be integrated which favour efficiency and therefore reduce costs at the economic operator's side as well.

DPS cover the same eProcurement phases as framework agreements, as shown schematically below:



Dynamic purchasing systems in an eProcurement process

DPS will thus cover notably the pre-award phase (in blue above), from the first announcement (via eNotification) that a DPS will be established to the provisional selection of the framework participants in the eAwarding phase on the basis of their indicative tenders. Once the DPS is established, procurements organised within the DPS will again cover the pre-award phases (at which point new economic operators may also join the DPS by submitting indicative tenders in response to the procurement), and can involve the eOrdering post-award phase as well.

7.2.1.2 Provisions within the Public Procurement Directives

The Public Procurement Directives have included a relatively generic legal framework for DPS, primarily in article 33 of Directive 2004/18/EC and article 15 of Directive 2004/17/EC. As with the provisions with respect to framework agreements discussed above, transposition of the provisions relating to dynamic purchasing systems is optional: Member States may choose not to support DPS specifically in their national transpositions. We will examine to which extent Member States have chosen to provide a legal framework in the sections below.

The main rules found in the Directives (article references below refer to Directive 2004/18/EC) relate to the following points:

Art. 33[1]	*DPS possibility: transposition of DPS provisions is optional*
Art. 33[2]	*DPS modalities: rules for open procedures must be followed in all phases up to the award of the contracts. All economic operators must meet the selection criteria and submit an indicative tender, along with possible additional documents. Indicative tenders may be improved at any time provided that they continue to comply with the specification. Only electronic means may be used in the DPS.*
Art. 33[3]	*DPS notice & specifications. Prior to using a DPS, contracting authorities shall:* *(a) publish a contract notice making it clear that a dynamic purchasing system is involved;* *(b) indicate in the specification, amongst other matters, the nature of the purchases envisaged, as well as all the necessary information concerning the DPS, including technical information;* *(c) offer by electronic means, on publication of the notice and up to the expiry of the system, unrestricted, direct and full access to the specification and to any additional documents, including a source URL for such documents.*
Art. 33[4]	*General functioning of the DPS. For the duration of the DPS, any economic operator may submit an indicative tender and thus become a part of the DPS. Evaluation of the indicative tender must be completed within 15 days of its submission. If no invitation to tender is submitted in the meantime, this period may be extended. Economic operators must be informed at the earliest opportunity of the evaluation outcome.*
Art. 33[5]	*Contracts under the DPS. Each specific contract must be the subject of an invitation to tender. Before issuing the invitation to tender, contracting authorities shall publish a simplified contract notice, in accordance with paragraph 4, within a time limit of at least 15 days after the simplified notice. Contracting authorities may not proceed with tendering until they have completed evaluation of all the indicative tenders received by that deadline.*
Art. 33[6]	*Submission of tenders under the DPS: contracting authorities shall invite all tenderers in the DPS to submit a tender for each specific contract. To that end they shall set a time limit for the submission of tenders.* *They shall award the contract on the basis of the award criteria set out in the contract notice for the establishment of the DPS. Those criteria may be formulated more precisely in the invitation for the specific contract.*
Art. 33[7]	*DPS duration and charges: A DPS may not last for more than four years, except in duly justified exceptional cases. Contracting authorities may not resort to this system to prevent, restrict or distort competition. No charges may be billed to the interested economic operators or to parties to the system.*

Summary of provisions in the Public Procurement Directives related to DPS

In the sections below, we will evaluate which countries have implemented a DPS regime in their public procurement laws, and to what extent these are being used in practice.

7.2.2 Main opportunities and challenges of using eProcurement for this tool

7.2.2.1 eProcurement opportunities

The DPS takes a rather unique role in this evaluation report, since unlike other public procurement tools, it has no non-electronic equivalent: while e.g. eSignatures, eAuctions and eAttestations are electronic evolutions of a traditional notion, DPS are intrinsically electronic. While it might be appealing to think of a DPS as an electronic framework agreement, this would be inaccurate and misleading: electronic framework agreements are entirely different from a DPS, as was discussed in the section directly above. The main opportunities provided by a DPS lie precisely in its ability to combine the positive characteristics of a framework agreement with the possibility to address the weaknesses of framework agreements:

- Like framework agreements, DPS can be used as tools to reduce procurement costs and increase the efficiency of public procurement by allowing multiple procurements to be organised without having to invest the resources of a full open procurement in each instance.
- However, a DPS negates the main weakness of framework agreements, namely its closed nature (i.e. the problem that a reduced number of economic operators are competing within the framework, and that certain terms of the framework are entirely fixed after its creation). The DPS is an open implementation: new economic operators may join a DPS after its establishment, and the characteristics of each operator's offer can be enhanced during the DPS' existence.

In that respect, a DPS should be able to combine efficiency gains with continued competition.

7.2.2.2 eProcurement challenges

There are however also a number of risks to be managed. Primarily, there are the interoperability issues related to any type of electronic procurement. These need a comprehensive solution, since a DPS is defined as "a completely electronic process", meaning that partial solutions (relying on paper submissions as a fallback or support solution) are not acceptable. In addition, DPS are conceived as a tool "for making commonly used purchases, the characteristics of which, as generally available on the market, meet the requirements of the contracting authority", as noted in its definition. This means that the use case of a DPS must be carefully considered, and will likely be limited to largely commodity purchases which can easily be defined and compared in a uniform way.

There are also some operational challenges that must be addressed. Firstly, to ensure that the open approach actually results in increased competition, it is advisable that there are multiple economic operators who are willing and able to use the DPS for each supported product or service type. If there is only a single economic operator for a specific good or service, then that economic operator has a de facto monopoly within the DPS, which may have an adverse impact on pricing or quality in cases where contracting authorities are expected, encouraged or required to use the DPS. In the more extreme situation where there is no economic operator for a given product or service type, the DPS is obviously of no use.

The second risk relates to the definition of clear participation criteria, which the Directives aim to address via the mechanism of indicative tenders. These criteria must be unambiguously defined, as they form the basis for which new economic operators will be allowed to participate in a DPS. Indicative tenders must be submitted by any economic operator who wishes to participate in a public procurement organised under a specific DPS. These indicative tenders must meet the requirements of the specific contract notices made available by the contracting authority, which will indicate i.a. the nature of the purchases envisaged, the main characteristics of the DPS, and the specification of the procurement. Due to the electronic nature of a DPS, this can be done relatively flexibly, and economic operators have the opportunity of improving their indicative tenders at any time. The latter characteristic (adapting the indicative tenders throughout the duration of the DPS) is particularly important, given that DPS can continue to exist for multiple years, during which the modalities of providing specific goods or services can change substantially.

There is however also some ambiguity in the Directives as to how this effect can be achieved. The Directives envisage the DPS as restricted in time, as noted in the definition above, with a maximum duration of four years, except in duly justified exceptional cases. Thus, they are not conceived as permanent eProcurement platforms, but rather as temporary systems that allow economic operators to flexibly submit tenders for a number of common products or services within a specific framework. Economic operators can join a DPS through the submission of an indicative tender, in which they present their offer for specific goods or services that are supported in the DPS. They can thereafter modify this indicative tender continuously, essentially keeping the terms of their goods and services (principally the price) up to date, for the purposes of improving their chances in subsequent contracts. Thus, the concept of the indicative tender can serve two purposes: joining the DPS, and responding to a specific procurement. Either way, if the indicative tender is accepted and the economic operator has thus joined the DPS, it can continuously modify the terms of its indicative tender (although it obviously cannot modify a specific offer after it has submitted it to a contracting authority, unless an eAuction is used as a procurement format).

7.2.3 The 2004 status and vision of the Action Plan

7.2.3.1 2004 status

Unlike framework agreements, DPS were a new instrument at the European level in 2004, introduced by the new Directives. Thus, it is not surprising that only three countries had any experiences at all to report in 2004:

- Latvia noted that it had already updated its legal framework in 2004 to support DPS, but that it had not used them in practice;
- Austria reported that it was running a pilot project aiming to explore the possibility of using DPS;
- Only Italy reported actual use of a DPS in an operational environment, specifically for purchases under the European threshold. Described as “a market place of public administration based on the principles of dynamic purchasing systems”, the Lotto1 system was established as an open system, open to all economic operators (supplier side) and to all contracting authorities (buyer side), and as being entirely separate from existing framework agreements. It supported the use of eCatalogues, and required the use of electronic signatures. No usage data was available.

Thus, only a single Member State had operational field experience with DPS in 2004. With respect to future plans, 18 Member States noted that they were planning to introduce DPS, with France, Hungary and Poland noting that they had no such intentions, and Belgium, Finland, the Netherlands and Portugal indicating that they had not yet decided. The 2004 Impact Assessment noted that these differences in intentions could lead to market fragmentation, notably with economic operators in countries that would support DPS having more experience in advanced procurement mechanisms than their competitors in other Member States without DPS.

7.2.3.2 Vision of the Action Plan and indicators for success

Possibly due to the link between DPS and framework agreements, and due to the lack of experiences with DPS at the time, DPS are treated in the same (relatively cursory) way in the Action Plan as framework agreements: the Action Plan does not contain specific measures addressing DPS explicitly, and only mentions DPS on two occasions:

- Firstly, the Action Plan noted that the standard forms would need to be updated to permit the establishment and usage of DPS to be reported. This will be further discussed in the sections below.
- Secondly, as was already mentioned above, the Action Plan called for the Commission to launch a study on eCatalogues in DPS and electronic framework agreements.

Given that the Action Plan thus does not contain specific measures in relation to DPS, the issue of defining indicators for success is moot.

7.2.4 Current status and evolution

7.2.4.1 Implementation of DPS legislation

Firstly, we will examine which of the 32 examined countries (Member States, EEA countries and the candidate countries Croatia and Turkey) have implemented a legal framework for DPS. In the table below, the transposition status will be indicated as either:

- Transposed, i.e. a legal framework for DPS has been provided;
- Not transposed, i.e. a legal framework for DPS has not been provided, and no transposition plans are known;
- Transposition planned, i.e. a legal framework has not yet been provided, but plans to transpose the provisions exist;
- Unknown, i.e. it is unclear whether transposition has occurred.

Specific transposition modalities (such as literal copying of the provisions of the Directive, partial transposition or gold plating) and key examples will be commented further below.

Transposed	Not transposed	Transposition planned	Unknown
Austria Bulgaria Cyprus Czech Republic Denmark Estonia France Greece Hungary Ireland Italy Latvia Lithuania Malta The Netherlands Poland Portugal Romania Slovakia Slovenia Spain United Kingdom Croatia Iceland Liechtenstein Norway Turkey	Germany Sweden	Belgium[188] Finland[189][190] Luxembourg[191]	
Total: 27 countries (including 25 MS)	**Total: 2 countries (including 2 MS)**	**Total: 3 countries (including 3 MS)**	**Total: 0 countries (including 0 MS)**

National transposition of provisions in the Public Procurement Directives related to DPS

Thus, almost all examined countries appear to have made a decision to implement the relevant provisions of the Directives, with the sole exceptions being Germany and Sweden. However, contracting authorities in these countries can still establish an *ad hoc* framework to use DPS. Especially in Germany, this would not be an unusual approach, given that the legal framework for public procurement in Germany already relies largely on a mixture of formal legislation and standardised contractual clauses. None the less, the lack of a comprehensive and binding legal framework means that these systems may be less predictable and/or transparent to economic operators.

Matching this against the intentions announced in 2004, DPS support has been implemented at a significantly higher rate than expected, as only 18 Member States had announced at that time that they were planning to introduce DPS. France, Hungary and Poland noted that they had no such intentions, but have since implemented regulations none the less. Belgium, Finland, the Netherlands and Portugal indicated that they had not yet decided, and at this time a framework has been established in the latter two countries, but not in the former two. It is however possible that the statement that DPS would not be introduced should rather be taken to mean that they would not be used in practice (since the legal possibility does not necessarily translate to actual uptake); this issue will be examined further below.

Among the 27 countries that have transposed the provisions with respect to DPS, several transposition strategies can be identified. Below we will examine the main possibilities, which have been classified as:

- Direct transposition, i.e. a virtual copying of the relevant provisions of the Directives without notable national changes;

[188] Transposition is foreseen in the draft Act of 2006, but this Act hasn't entered into force yet in its entirety. Meanwhile, the provisions of the amended 1993 Act remain applicable, which do not foresee a legal framework for DPS.

[189] The main Act of 2007 contains the definition of DPS, but no substantive rules. These are to be determined in a specific regulation, which is under review at the time of writing (March 2010).

[190] The main Act of 2006 contains the definition of DPS, but no substantive rules. These are to be determined in a specific regulation, which has not been issued yet.

[191] The status of transposition for Luxembourg is debatable: the main Act (of June 2009) contains the definition of DPS, but no substantive rules. These are to be determined in a specific regulation, which has not been issued yet (the recent regulation of August 2009 does not yet contain specific rules for DPS).

- Gold plating, i.e. national transpositions which have tried to add value to the provisions of the Directives by going into more detail on certain points;
- Simplified transposition, i.e. national transpositions which only partially transpose the provisions of the Directives;
- Unknown, i.e. no details on the transposition strategy are known.

Interesting implementation choices will be examined in greater detail below, by looking at how national choices may diverge from the provisions of the Directive.

Direct transposition	Gold plating	Simplified transposition	Unknown
Denmark Ireland Italy Lithuania Malta The Netherlands Slovakia Slovenia United Kingdom Croatia Iceland Liechtenstein Norway	Austria Bulgaria Czech Republic France Latvia Poland Portugal Romania Spain Turkey	Estonia	Cyprus Greece Hungary
Total: 13 countries (including 9 MS)	**Total: 10 countries (including 9 MS)**	**Total: 1 country (including 1 MS)**	**Total: 3 countries (including 3 MS)**

National transposition approaches of provisions in the Public Procurement Directives related to DPS

Of the 24 countries with a known transposition strategy, a majority of 13 countries (54%) has chosen to make no (or no notable) changes to the terms of the Directives. In these cases, rewording or restructuring was frequently seen, in order to ensure that the phrasing of the new provisions would fit within the structure of existing eProcurement regulations, but little to no material changes in the legal framework were made in this case.

More interesting however is the observation that 10 out of 24 countries (42%) have opted for a gold plating strategy. Possibly, this is an indication of unclarities or ambiguities in the Directives that the Member States felt necessary to address. Below, we will examine the choices made in gold plating countries and the impact that this has had.

Only Estonia has elected for a simplified (partial) transposition of the Directives, as only a definition and term restriction are integrated in the Estonian act; other provisions have not been transposed. This situation is however temporary: secondary legislation is being prepared and will likely be enacted in the second quarter of 2010.

In Annex C to this report, we have included a comprehensive table describing the main tenets of the transposition for each of the 24 countries for which we have been able to determine the transposition strategy. Looking specifically at the ten gold plating countries in a bit more detail (namely Austria, Bulgaria, the Czech Republic, France, Latvia, Poland, Portugal, Romania, Spain and Turkey), gold plating has generally be relatively limited in scope, and has focused on a number of ambiguities in the Directives, most notably the following:

- **Clarifying the conceptual framework, notably the indicative tender and the bids submitted with a DPS:** as was already noted in the introduction above, there is some conceptual confusion with respect to the link between the DPS, indicative tenders and specific bids in response to contracts launched under a DPS. The general philosophy is that a DPS can be set up by a contracting authority, and that economic operators may join it by submitting indicative tenders. These indicative tenders indicate the terms under which the economic operators would be willing to offer their products or services, and they are not binding until they are submitted to the contracting authority in the context of a specific contract. This aspect is further emphasised in several countries, including specifically through the explicit definition of an indicative tender, which has occurred in three countries: Estonia, Latvia and the UK. It should be noted that neither Estonia nor the UK was marked as a 'gold plating country' in the table above, as this was the only noteworthy addition to the provisions of the Directive in the national laws. The definitions are similar in scope, but take a slightly different perspective:
    - Estonia: The indicative tender is defined as "the expression of will of the person for joining the dynamic purchasing system which complies with the technical description prepared by the contracting authority. The indicative tender is not the expression of will for awarding the public contract." Thus, a clear distinction is made between the indicative tender as the formality to join a DPS and the later submission of actual bids.
    - Latvian legislation describes the indicative tender as "a tender that characterises the range of goods offered by a tenderer in the dynamic purchasing system, but is not binding on the tenderer and a public service provider". Thus, the nonbinding nature is emphasised.
    - Finally, in the UK the definition is "a tender prepared by an economic operator seeking admission to a dynamic purchasing system which sets out the terms on which it would be prepared to enter into a contract with a contracting authority should that contracting authority propose to award a contract under the system". Again, the nonbinding tentative character of the indicative tender ("would be prepared to…") is emphasised.

  Each of these cases thus brings an important clarification to the exact meaning of this basic concept.
- **Clarifying the different stages of the DPS:** some countries have also expanded on the phasing of a DPS, and thus also address the scope and impact of the indicative tender indirectly. Key examples of this approach can be found in France and Portugal.
    - In France, the general structure of the DPS as described in the Directives is clarified, by stating that economic operators who have not yet submitted an indicative tender to the DPS may still submit one in response to a new contract under the DPS being announced (thereby joining the DPS and submitting an offer in a single act). The phrasing is substantially clearer than the Directives, which leave some ambiguity as to the exact meaning of the indicative tender.
    - Similarly, in Portugal, the process of using a DPS is split into several phases, specifically the set-up, simplified notification, and the judging of bids. Each of these phases is then dealt with separately through specific articles, leading to a more structured overview.
- **Delineating the procurements where DPS might be productively used:** the Directives already emphasised that DPS were mostly conceived as a tool "for making commonly used purchases, the characteristics of which, as generally available on the market, meet the requirements of the contracting authority". The meaning of this phrasing is however subject to interpretation. The reference to "purchases" suggests that DPS are intended principally for

supply contracts[192], although their application to services and works contracts is not conceptually impossible. Indeed, their use in relation to service and works contracts is also permitted under the Directives, as can be directly seen in the fact that individual contracts under a DPS must be notified to the Commission using standard notice forms (notice form nr. 9, as will be discussed further below), which explicitly allow contracting authorities to indicate that the contract relates to supplies, services or works.

At any rate, and as was shown in the table above, the Member States apply very different lines of reasoning to define appropriate use cases:

- In the Czech Republic, the law explicitly indicates that DPS can be used for purchases of goods, services and works. This was also the case in Spain and in the UK. Czech law also stipulates explicitly that DPS cannot be used to set up framework agreements, presumably to avoid complexities when mixing these two basic tools.
- In Estonia, the definition of the DPS contains no reference to 'commonly used purchases'. Again, this seems to imply that services and works contracts could also be covered.
- The definition of the DPS in Italy explicitly excludes any type of goods or services where specifications are defined by the contracting authority which cannot be assessed automatically by the DPS. Thus, the application field of the DPS appears to be a bit narrower, as automatic assessment (as in the case of eAuctions) appears to be a requirement.
- In the Polish act, DPS may only relate to generally available supplies or generally available services. Works however are not explicitly covered.
- In Portugal, the same limitation as with respect to eAuctions was integrated: DPS may only be used for purchase/rent contracts of movables, or for services contracts relating to generic services , i.e. to the extent that their technical characteristics are sufficiently standardised. Furthermore, DPS may only be used under a certain threshold established in article 20 of the Code, which varies depending on the type of contract and contracting authority.

Thus, it is clear that DPS are principally perceived as tools for supply contracts, and that a few countries have implemented specific regulatory restrictions in this respect to restrict them to this aspect.

- **Procedural and/or administrative requirements**: the basic provisions with respect to DPS are relatively simple and regulate only the key concept and processes behind their setup and use. In some countries additional procedural rules and/or administrative requirements have been added to clarify how DPS are to function in practice. Key examples of these requirements are:
  - **The deadlines, delays and processes for the evaluation of indicative tenders:** the Directives state that indicative tenders must be evaluated within 15 days. In some countries, additional procedural rules have been provided, such as:
    - **The definition of a specific period after the evaluation to communicate the evaluation decision to the economic operator that submitted an indicative tender** (e.g. a three day period after the evaluation in Bulgaria, or a two day period in Spain);
    - **Specific justification obligations with respect to the evaluation outcome:** the Austrian transposition has integrated additional requirements in this

[192] Based on the consideration that purchases are explicitly mentioned in the definition of 'Public supply contracts' in article 1 of both Directives, whereas it is not mentioned in the definitions of 'Public service contracts' or 'Public works contracts'. Thus, while one might colloquially refer to the purchase of services or works, this is not the terminology used by the Directives.

respect (decisions to reject an economic operator's participation in a DPS must be justified under certain circumstances). Similarly, in the Czech Republic admission or rejection decisions must be justified..

- **The obligation to install a commission to conduct the evaluation** (e.g. in Bulgaria, where this commission will evaluate and rank any received bids, or in France)**, or inversely the omission of any commission from this process** (e.g. in the Czech Republic, where a committee must normally be used in any open procurement, but not when using DPS; in this case the indicative tender is thus evaluated by the contracting authority itself).
- **Clarification with respect to the evaluation period of 15 days after the receipt of an indicative tender:** in France, this deadline can be extended if no new procurements can be initiated under the DPS *that are relevant to the economic operator(s) being evaluated*. The latter criterion (of relevance, indicated in italics) is a minor but clear improvement over the Directives, which specify a general ban on new procurements during the evaluation. This improvement was only identified in France. In Portugal, the law also noted that indicative tenders may be continuously modified as per the Directives, but added that a 15 day approval period applies to each modification as well (and not just to the original indicative offer).

o **Infrastructural choices:** certain Member States have provided for rules requiring the use of specific infrastructure or institutions to safeguard the reliability of the DPS. Key examples include:

- In Poland, any DPS must be notified to the Polish Public Procurements Office. Furthermore, the Polish act states that tenders submitted within a DPS must be signed using an advanced signature based on a qualified certificate, under penalty of nullity. The Polish act was the only transposition that contained a separate eSignature requirement for DPS.
- In Romania, DPS may only be organised when using the Romanian ESPP system (electronic system for public procurement) a public utility IT system aimed to support awarding procedures by electronic means. This ensures full control over the process as a whole.
- Similarly, in Turkey the use of the national Electronic Public Procurement Platform (EPPP) is made mandatory for DPS, which is to be operated by the Turkish Public Procurement Authority (PPA). The PPA is also empowered to determine the cases requiring contract arrangements, and the principles and rules regarding the contracts on procurements within the scope of dynamic purchasing systems.

Thus, the sensitivities implicitly recognised by the gold plating strategies seem to relate largely to defining the suitable scope of use of DPS, clarifying the concept and goals of the indicative tender, and structuring the processes and procedures when using DPS.

As far as the scope of DPS is concerned, the inherent focus of DPS on 'commonly used purchases' has lead to a logical emphasis on supply contracts. Most countries however do not exclude services and works contracts by definition from the scope of DPS, although some exceptions exist as noted above. It is also interesting to note that some countries have tried to clarify the 'commonly used' concept, notably by drawing on the possibility of drawing on standardised specifications. An example of this is seen e.g. in the Portuguese transposition which notes that goods or services can be procured via a DPS "to the extent that their technical characteristics are sufficiently standardised". A more extreme version of this trend can be found in the Italian transposition, which excludes any type of

goods or services where specifications are defined by the contracting authority which cannot be assessed by the DPS. The latter concept is more closely linked to an eAuction than a DPS, where such automated assessments are not required by the Directives.

The concept of the indicative tender and its role in the DPS appears to have been considered insufficiently clear in a number of Member States, as three of them have attempted to provide specific definitions (not included in the Directives). While slightly divergent, in each case the provisional and tentative character of the indicative tender is stressed, as a way of distinguishing it from a binding offer for a specific contract. This approach also addresses the challenge of reconciling two characteristics of the indicative offer: the fact that it can be continuously improved during the operating time of the DPS, and the fact that it can be submitted by a new economic operator in response to a specific contract under a DPS.

Finally, some countries (with France and Portugal being key examples) have also substantially rephrased the phases in the set-up and use of the DPS to clarify the exact structure of the process and the specific steps to go through.

7.2.4.2 Uptake in practice

Even if a significant number of countries have implemented sufficient legal provisions in relation to DPS, this does not necessarily correspond to actual usage in practice. Measuring this usage is challenging, since reliable statistics are rare. None the less, some valuable indicators exist.

A first avenue of analysis lies with the new Standard Forms for announcing invitations to tender (ITTs) and contract award notices (CANs). Two relevant forms are involved in the usage of a DPS: the initialisation of specific contracts under an existing DPS requires a notice using the standard form 9 (Simplified contract notice on a dynamic purchasing system)[193]. Furthermore, after a DPS has been established, a contract award notice (CAN, standard form 3[194]) or a CAN for utilities (standard form 6[195]) must be submitted, indicating that the DPS was indeed set up.

Looking at these forms as received over the period 2006-2008, the results appear incoherent. Looking at the forms n°9 ("Simplified contract notice on a dynamic purchasing system") published on TED, only 38 forms n°9 have been published in the EU (4 in 2006, 12 in 2007 and 22 in 2008), which is extremely low. However, examining the standard forms n°3 (Contract award notices) and n°6 (Contract award notices – utilities) for that same period, no less than 2.932 forms stated that a DPS was concluded over the period 2006-2008, among which 440 in 2006, 964 in 2007 and 1.528 in 2008. There appears to be a manifest disproportion between both numbers. When correlating these statistics to the individual Member States reporting their uptake, the result is as follows:

[193] See http://simap.europa.eu/docs/simap/pdf_jol/en/sf_009_en.pdf

[194] See http://simap.europa.eu/docs/simap/pdf_jol/en/sf_003_en.pdf

[195] See http://simap.europa.eu/docs/simap/pdf_jol/en/sf_006_en.pdf

	Forms 3 and 6	Form 9
Austria	31	0
Belgium	56	0
Bulgaria	15	0
Cyprus	16	0
Czech Republic	537	0
Germany	181	3
Denmark	37	7
Estonia	1	0
Spain	454	1
Finland	220	0
France	408	10
United Kingdom	217	7
Greece	231	0
Hungary	4	0
Ireland	84	1
Italy	227	3
Lithuania	14	0
Latvia	6	0
Netherlands	73	0
Poland	53	0
Portugal	16	1
Romania	4	0
Sweden	30	5
Slovenia	12	0
Slovakia	5	0

Establishment and usage of DPS in 2009 as reported by the Member States to OPOCE using forms 3, 6 and 9

Some of the data appears to be manifestly implausible: e.g. the Czech Republic's statistics indicate the conclusion of 537 DPS (highest number in the EU), but no actual contracts awarded under a DPS. In addition, as was noted in the legal and policy analysis above, the legal transposition status in the surveyed countries with respect to DPS was as follows:

Transposed	Not transposed	Transposition planned	Unknown
Austria Bulgaria Cyprus Czech Republic Denmark Estonia France Greece Hungary Ireland Italy Latvia Lithuania Malta The Netherlands Poland Portugal Romania Slovakia Slovenia Spain United Kingdom Croatia Iceland Liechtenstein Norway Turkey	Germany Sweden	Belgium[196] Finland[197][198] Luxembourg[199]	
Total: 27 countries (including 25 MS)	**Total: 2 countries (including 2 MS)**	**Total: 3 countries (including 3 MS)**	**Total: 0 countries (including 0 MS)**

National transposition status of provisions in the Public Procurement Directives related to DPS

[196] Transposition is foreseen in the draft Act of 2006, but this Act hasn't entered into force yet in its entirety. Meanwhile, the provisions of the amended 1993 Act remain applicable, which do not foresee a legal framework for DPS.

[197] The main Act of 2007 contains the definition of DPS, but no substantive rules. These are to be determined in a specific regulation, which is under review at the time of writing (March 2010).

[198] The main Act of 2006 contains the definition of DPS, but no substantive rules. These are to be determined in a specific regulation, which has not been issued yet.

[199] The status of transposition for Luxembourg is debatable: the main Act (of June 2009) contains the definition of DPS, but no substantive rules. These are to be determined in a specific regulation, which has not been issued yet (the recent regulation of August 2009 does not yet contain specific rules for DPS).

Even countries which do not (yet) have a formal legal framework for DPS (notably DE, SE, BE, FI) are reported as having submitted forms 3 and 6, and for some of them also form 9. It is therefore unlikely that the received forms are reliable information sources, and actual uptake figures should be substantially lower. Indeed, in a recent meeting of the eProcurement Working Group, a number of representatives voiced the comment that DPS were seldom used in practice, simply because the concept was too vaguely defined and not well understood by most contracting authorities. Even representatives from countries which had implemented a legal framework, including Austria, France, Poland, The Netherlands and Spain, noted that actual figures should be much lower.

Generally, while the data suggests that DPS are only rarely used, the relevant notice forms are misused at too a high rate to allow clear conclusions. Therefore, we will examine the country profiles collected in the course of this study, to determine if any countries identify systematic usage of DPS (as was the case with e.g. framework agreements), which might be incongruent with the statistical data above.

7.2.4.3 Practical uptake examples

Looking at the country profiles for confirmation of (non-)uptake, the following observations are notable:

- Only one of the surveyed countries (France) indicated that DPS are supported via a major eProcurement platform, namely the *Place de marché interministérielle*[200]. While this does not necessarily mean that there are no platforms available that support DPS in the other countries, at least it is a solid indicator that DPS is virtually never considered an important pillar to such platforms (in contrast to e.g. framework agreements). The only countries that indicate that efforts are underway to support DPS in their eProcurement platforms are Hungary, Portugal, Romania and Turkey. With the exception of Portugal, these countries have all opted in their legal frameworks to only allow the use of DPS if a specific central eProcurement platform is used. However, in these three cases, DPS was not yet implemented. Thus, apart from France, there do not appear to be any countries at this time in which DPS is a feature of a primary eProcurement platform.
- Even outside of the context of specific eProcurement platforms, none of the surveyed countries indicate that DPS are used to a notable extent. Again, this can be contrasted to the situation for framework agreements, where several countries indicated that they took an important role (both strategically and in terms of budget). In contrast, four countries noted explicitly that DPS were not used at all (Belgium and Finland (whose legal frameworks do not support the use of DPS yet), Cyprus, and Bulgaria, with the latter noting that 'This kind of public procurement procedure is in practice difficult to understand and apply'.

While not entirely conclusive, these specific profiles seem to confirm the trend illustrated by the analysis of notices: DPS have failed to find significant uptake in the surveyed countries. Contrary to framework agreements, they do not yet take an important strategic role in national procurement strategies, nor do they seem to account for a substantial part of the European eProcurement market.

[200] See www.marches-publics.gouv.fr

7.2.4.4 Conclusions

The inclusion of legal provisions for DPS in the Directives offers interesting new possibilities for contracting authorities to conduct easily accessible and fully electronic procurements. However, before this can be done, a number of issues need to be worked out which limit the actual usage of DPS, including:

- The relatively high complexity (and thus costs) of implementing fully electronic public procurements;
- The challenges in defining the specifications for 'commonly used purchases' in a way that is attractive for economic operators and sustainable over the duration of the DPS;
- The economic challenge in ensuring sufficient participation of economic operators (both in attracting indicative tenders, and in ensuring sufficient bids to specific procurement contracts;
- The time-restricted nature of a DPS, which may put it in competition with more permanent solutions (like eProcurement websites managed by central purchasing bodies, which may prove to be a more easily manageable and more stable alternative to DPS).

7.2.5 Remaining gaps/barriers

While the 2004 Action Plan does not contain many remarks and considerations directly related to DPS, some challenges can still be identified:

Possible gap / barrier	Applicable to this phase?	If yes, explain
Lack of available infrastructure	Yes	Only France indicates that DPS is an inherently supported feature of an eProcurement system; no other Member State seems to have infrastructure available to easily support this functionality.
Interoperability	No	No issues specific to DPS.
Legal uncertainty	No	/
Trustworthiness	No	/
Accessibility	No	/
Economic viability and use cases	Yes	Since the DPS is explicitly defined in the Directives as permitting only the use of electronic means, the establishment and use of a DPS is a very demanding process. It requires that all challenges related to eProcurements can be addressed by the contracting authority, including the electronic identification of the economic operators, submission of any required electronic evidences, electronic signing in a reliable and legally permissible way, etc. It emerges from the national reports that the Member States are generally unsure of how/when they should use DPS.
Transparency	Yes	While there is statistical data on DPS, a reality check on this data shows that the data is extremely implausible, as also confirmed by representatives of the Member States during meetings of the eProcurement Working Group. Our evaluation indicates that DPS are rarely used in practice, or at least that no Member State considers it to be a pillar of its eProcurement policy. None the less, more reliable data is desirable.
Market challenges	No	/
Distribution of benefits	No	/

Gaps and barriers with respect to DPS

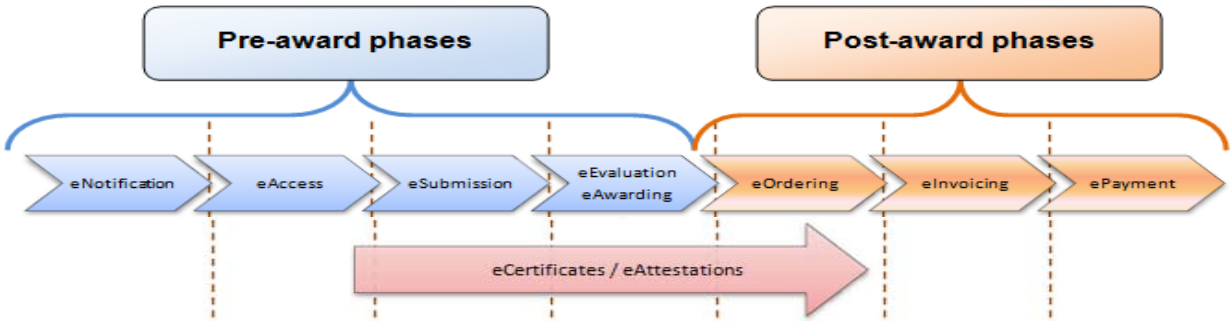
7.3 eAttestations / Business Documents

7.3.1 Definition

7.3.1.1 Conceptual description

Public procurement is traditionally a process that is dependent on the exchange of a large number of documents, both in the pre-award and post-award phases. At a minimum, the contracting authority must publish tender specifications, and the economic operator must submit an offer. After the conclusion of the procurement (typically involving the signing of a contract), the economic operator will likely need to send an invoice. Depending on the exact modalities of a public procurement, other document types may be involved: the invitation to tender may be coupled with technical annexes, the offer may be complemented or substituted by a product/service catalogue, evidentiary documents (certificates and attestations) may need to be provided to show that the economic operator is eligible to participate in a public procurement, letters of acceptance may need to be exchanged, etc. Thus, eDocuments can be a crucial part of public procurements.

In this section, we will be examining a specific sub-class of eDocuments, commonly referred to as eAttestations, eCertificates or electronic business documents. The general term refers to documentary evidence in an electronic form which is provided by the economic operator as an addition to its own bid, and which demonstrates compliance with certain requirements. These documents are thus most relevant in the phases where the economic operator shows its suitability to the contracting authority to perform a procurement, notably eSubmission, eEvaluation/eAwarding, and eOrdering:



eAttestations in an eProcurement process

In an electronic context, equivalents for such evidentiary document types must be found. As noted in the Action Plan: "*Standardising and restructuring business documents as well as more uniform tendering documents should help automating certain purchase routines and allow both sides to concentrate on the substance of the purchase. A typical example of red tape concerns the numerous certificates and business documents required. These are rarely available in electronic form. Additionally, they need to be usable and acceptable across borders.*"

From a technical perspective, this can present huge challenges: a document format must be used that is readable by any recipients, and for which the long term readability is also ensured. The structure of the content of the document itself may also be subject to specific requirements to ensure that

documents originating from different economic operators are easily and fairly comparable. Depending on national preferences, there may be a requirement for the document to be electronically signed or otherwise authenticated, which may cause entirely new issues (e.g. eSignature interoperability questions as described elsewhere in this report). In a cross border context, these problems can be particularly challenging to resolve, as local requirements, expectations and traditions with respect to eDocuments may differ substantially.

7.3.1.2 Provisions within the Public Procurement Directives

Within the Public Procurement Directives, eAttestations are dealt with on two fronts: firstly by defining a list of documents that contracting authorities may ask economic operators to provide, and secondly a series of modalities for providing these documents, including in an electronic context.

The first issue (which documents may contracting authorities ask for?) is aimed at assessing the eligibility and standing of candidates to participate in a given public procurement procedure. These are divided into two groups: documents typically required in relation to exclusion criteria, i.e. requirements determining which contractors must be excluded from consideration for the procurement (Article 45 of Directive 2004/18/EC) and selection criteria (i.e. requirements to be met by any service provider in order to be eligible for selection, Art 46 and following of Directive 2004/18/EC). Given the need for greater flexibility, these criteria have not been made binding in Directive 2004/17/EC (notably Article 54). Key examples of commonly required documents include:

Exclusion criteria:

- Evidence of absence of criminal convictions (Extracts of judicial records or equivalent documents)
- Evidence of non-bankruptcy and financial status (Declarations from commercial courts or equivalent documents)
- Evidence of compliance with fiscal obligations (Declarations from fiscal services or equivalent documents)
- Evidence of compliance with social security obligations (Declarations from social security services or equivalent documents)

Selection criteria:

- Evidence of economic and financial standing (Bank statements, turnover sheets, insurance statements or equivalent documents)
- Evidence of professional qualification (Extracts from professional registers or equivalent documents)
- Evidence of technical and/or professional ability (Diplomas, descriptions of goods and services or equivalent documents)
- Evidence of quality assurance (certification by auditing bodies of goods and services or equivalent documents)
- Evidence of environmental compliance (certification by auditing bodies of environmental practices or equivalent documents)

It is however crucial to note that the Directives do not *require* contracting authorities to ask for relevant documentary evidence on each of these points. Rather, the Directives take a more flexible approach by noting a number of document types which Member States may ask for and/or must accept as adequate evidence, notwithstanding the right for Member States to be more flexible in this respect. For instance, while Directive 2004/18/EC notes that certain types of criminal convictions must lead to exclusion, and that extracts from judicial records must be accepted as valid proof of non-conviction, Member States may also simply decide that they consider a simple statement of compliance as being sufficient.

In short, the Directives never require the use of specific attestations to show compliance with a specific requirement, either on paper or in an electronic format. This also means that there is a great margin for flexibility in organising specific procurements, which is especially important in eProcurements, as original electronic attestations may simply not be available.

As was noted above, the Directives also define a series of modalities for providing these documents, including in an electronic context. Firstly, it is important to note that the Directives recognise that not all Member States have implemented a homogeneous set of evidentiary documents (e.g. not all Member States make extracts of judicial records available for eProcurement, or their content may simply not be sufficient to show compliance with the Directives). To cover this possibility, in most cases a list of alternatives is also provided, which are declared to be legally equivalent. E.g. in a country which does not have appropriate extracts of judicial records, article 45 (3) of Directive 2004/18/EC notes that "they may be replaced by a declaration on oath or, in Member States where there is no provision for declarations on oath, by a solemn declaration made by the person concerned before a competent judicial or administrative authority, a notary or a competent professional or trade body, in the country of origin or in the country whence that person comes." This allows the provisions of the Directives to be applied universally, even in the absence of standardised official evidentiary documents.

Secondly, Directive 2004/18/EC allows Member States to establish so called "Official lists of approved economic operators and certification by bodies established under public or private law" (article 52 of that Directive). Essentially, these lists can act as pre-approval schemes: economic operators may decide to join such lists on a voluntary basis, submitting any evidences required by the scheme operator. Thereafter, in public procurements supporting this modality, they can submit a single evidentiary document showing that they are registered on an official list instead of a larger set of evidentiary documents. This simplifies administration for economic operators and contracting authorities, and thus reduces costs. A similar mechanism has been introduced under Directive 2004/17/EC in the form of rules for qualification systems (article 53 of that Directive).

Both of these modalities (alternatives to official documents and pre-approval schemes) are important to eProcurement as well, since they can serve to counteract one of the major problems for eProcurement: the absence of authentic electronic evidentiary documents (i.e. authentic eAttestations). If no authentic eAttestations exist, then eProcurements can only be organised if acceptable workarounds can be found, e.g. by replacing them with declarations of compliance from the tenderer, or by ensuring that a single eAttestation from an official list is available as an alternative. Other options are available as well, including the possibility permitted under article 42.5 (d) of Directive 2004/18/EC, which simply allows economic operators to submit, before expiry of the submission deadline, the original paper attestations if they do not exist in an electronic format. Obviously, this option is not very desirable, since it reduces the incentive to use eProcurement by adding a paper component to an otherwise electronic process, thus increasing the workload.

7.3.2 Main opportunities and challenges of using eProcurement for this tool

7.3.2.1 eProcurement opportunities

An important initial point to emphasise is that the need for eAttestations is determined to a large extent by the risk assessment performed at the national level with respect to the need for evidentiary documents to show compliance with public procurement requirements. It was already noted above that the Directives do not require formal evidences to be provided. This means that Member States are free to be as flexible or as formalistic as they consider to be appropriate when determining if formal evidences are needed, and what form they should take. One Member State may decide not to require any evidentiary documents, whereas another may require copies, and yet another will require original (possibly signed or stamped) documents. This choice will depend on the national legal framework (does the law require the production of documents?), the specific procurement (the financial value and risk related to the procurement), and local policy preferences and traditions (how (in)formal are procurements traditionally?). Thus, the need for eAttestations can vary from Member State to Member State and even from procurement to procurement.

None the less, the introduction of eAttestations (i.e. electronic versions of traditional paper attestations) offers a number of opportunities in eProcurement:

- because of their electronic format, it can be made possible to request and deliver them electronically. This massively reduces cost and effort on all sides.
- the introduction of eAttestations requires a modernisation of the national administrative infrastructure, offering the possibility of streamlining communications and administrative processes in general. E.g. where issuing processes of a specific attestation may have differed depending on the issuing office in the past, a single online portal where an eAttestation can be requested will ensure a harmonised and equal process for all economic operators. This reduces cost and improves the equity of the requirement.
- depending on the implementation choices (e.g. use of electronic signatures and/ or validation portals), determining the authenticity and validity of eAttestations can be made easier, quicker and more reliable. Again, this translates to lower costs and efforts, and also increases the reliability of public procurements by diminishing the risk of contestations.

Furthermore, and potentially much more importantly, it is virtually impossible to address the issue of eAttestations exclusively in an eProcurement context, since the same documents (judicial record extracts, tax declarations, social security attestations, …) tend to be used in all types of eGovernment services. Thus, any improvements implemented as a result of eProcurement actions will likely trickle through to other domains as well.

7.3.2.2 eProcurement challenges

The main challenges with respect to eAttestations specifically in the context of eProcurements were recently examined in the 2008 "Preliminary Study on the electronic provision of certificates and attestations usually required in public procurement procedures"[201]. Based on the overview provided in this study, the main challenges can be summarised as follows:

Early status of initiatives – unavailability of eAttestations: one of the main difficulties in finding appropriate solutions to the use of eAttestations (especially in a cross border context) is the fact that eProcurement applications have not yet stabilised in many countries. Most countries have not yet deployed authentic eAttestations for the use in their own applications. As this is the case, workarounds need to be developed to reduce the need for attestations in the traditional sense, e.g. through declarations of compliance from the economic operator, or by mimicking the functionality of attestations through alternative data exchange mechanisms which relieve tenderers of this administrative burden, rather than reshaping it. Electronic attestations as such (i.e. in the form of electronic documents issued directly by the competent administrations) are still fairly rare, and they remain largely unused in electronic procurements.

Multitude of approaches and information sources: different Member States are implementing different conceptual models behind current electronic attestation systems, including:

- Replacing electronic attestations by unilateral declarations of compliance from the economic operator (either provisionally or permanently);
- Using limited prequalification systems relying on trusted third parties (TTP) in the public or private sector;
- Exchanging information directly between the contracting authority and the source of the required information (if this source is controlled by another public sector entity); or
- The direct issuing of electronic certificates or attestations which have been signed with a PKI signature by the administrations themselves.

Examples of these approaches will be given below, when examining the current national status. The fundamental issue to be resolved with regard to electronic attestations is that there is no common ground yet between the approaches being taken in the Member States. This will obviously present significant challenges for the cross border use of eAttestations.

Disconnect between regulatory requirements and market reality: there is presently no commonly accepted solution for the cross border validation of eAttestations (when they exist). This puts eProcurement application owners in the awkward position of needing in principle to provide an answer to a problem that has not yet been resolved outside of the eGovernment sector.

eSignatures and electronic attestations: obviously, when the authenticity of eAttestations is ensured by the use of eSignatures, any interoperability issues discussed extensively in the eSignatures section elsewhere in this report also apply, further complicating the use of eAttestations, especially in a cross border context.

[201] See http://ec.europa.eu/internal_market/publicprocurement/eProcurement_en.htm

7.3.3 The 2004 status and vision of the Action Plan

7.3.3.1 2004 status

The 2004 Impact Assessment quoted above did not reference the (un)availability of eAttestations directly, and no statistical data is available with respect to this timeframe. In fact, this should not be surprising given the 2004 context:

- It was noted in the impact assessment (as already discussed above) that eProcurement systems in 2004 were relatively rare. Those that did exist tended to support only the one-way eProcurement phases (eNotification and eAccess), in which eAttestations are not relevant. eAttestations only become important in later phases (eSubmission, eEvaluation/eAwarding, …), and these were only very rarely supported in eProcurement applications in 2004. In practical terms, eAttestations were to a large extent still a 'below the radar' issue.
- Similarly, eSignatures are an important building block for the creation of authentic eAttestations. Here too, in 2004 the availability and use of eSignatures in practice was still limited, and certainly insufficient to support their generalised use in eAttestations for public procurement purposes.

These two elements can be considered as indicators that in 2004, eAttestations were a largely marginal phenomenon at best, for which clear approaches did not yet exist. This likelihood is corroborated by the fact that, as we shall see below, the aforementioned 2008 study also noted that eAttestations were still relatively rare in practice and virtually unused in eProcurements, with most Member States focusing on finding sufficiently secure workarounds for the need for eAttestations.

Globally, it seems fair to say that eAttestations were virtually inexistent in 2004.

7.3.3.2 Vision of the Action Plan and indicators for success

The Action Plan framed the issue of eAttestations in the broader context of increasing competitiveness of public procurement markets across the EU. Two overriding concerns were identified in the Action Plan's introduction to its proposed measures on eAttestations:

- Firstly, the issue of transparency and fairness. In the sections above we already noted that the Directives do not require specific evidences to be produced and that there was a great variety in possibilities, ranging from original documents (possibly translated and/or notarised), copies, sworn declarations, to mere statements of compliance. Apart from this variety of sources, contracting authorities in cross border procurements would be faced with the need to be able to validate a large number of documents that may be unfamiliar and even indecipherable to them. This could lead to de facto discriminations where participation by foreign economic operators might be more burdensome than for local ones, or to unmanageable situations where contracting authorities are required to validate documents they cannot reasonably understand.

- Secondly, the issues of efficiency and simplification. The Action Plan reiterated that "online procurement should require less effort than traditional procedures." eAttestations should be handled in the general context of simplifying procurements for economic operators and contracting authorities alike. This also implies that getting eAttestations and using them (including in a cross border context) should not be harder for eAttestations than for paper ones.

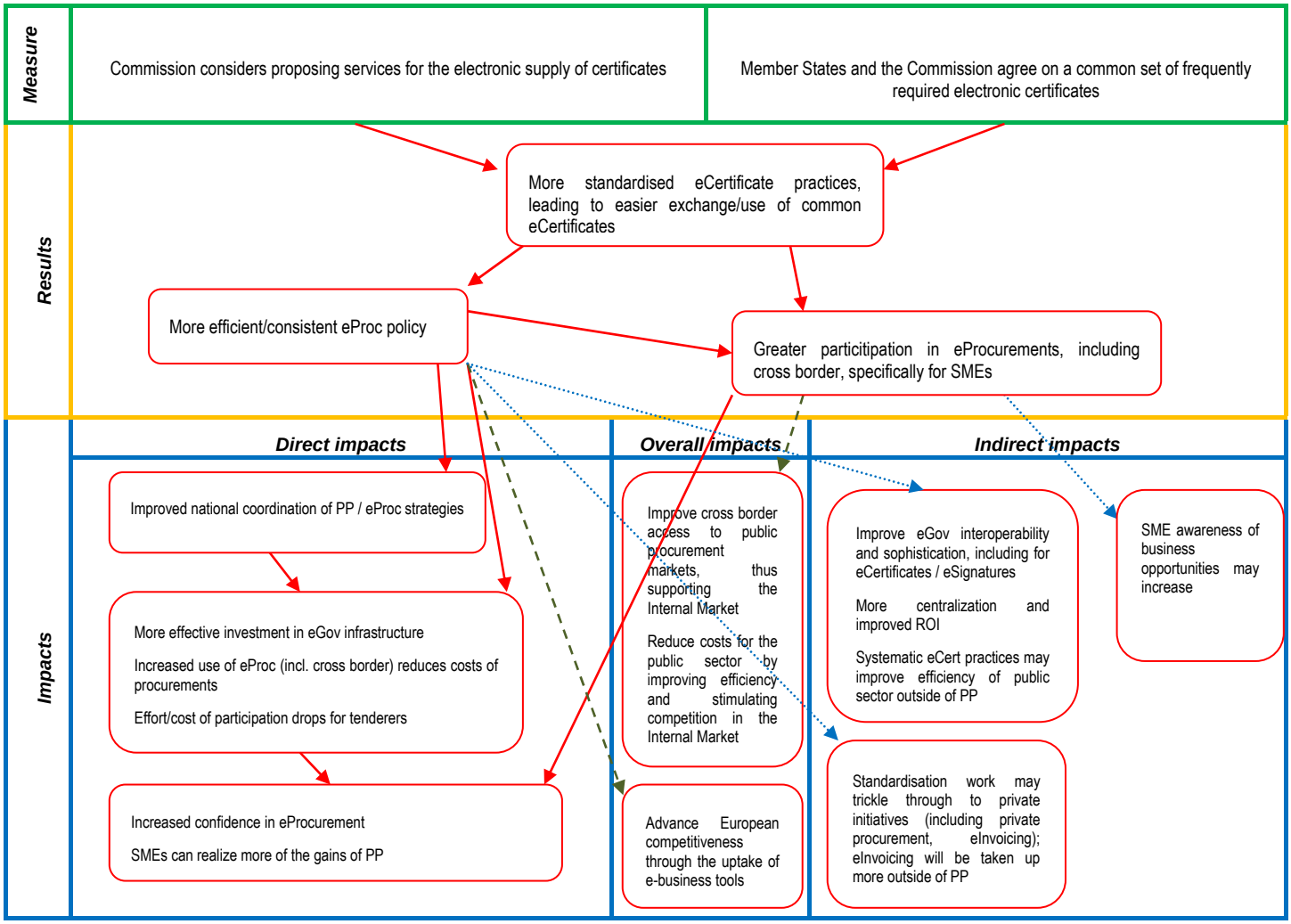
Measures with respect to eAttestations should therefore "help automating certain purchase routines and allow both sides to concentrate on the substance of the purchase", according to the Action Plan. However, as noted in the section above, the actual status of eAttestations was still at a very early stage and not well understood at that point. It would therefore have been unrealistic to plan for far reaching measures such as the EU wide standardisation of the main attestations/eAttestation required, especially given that this would have repercussions on other eGovernment activities as well. The Action Plan therefore opted for a softer touch approach, aiming to chart national attestation/eAttestation practices and encourage the Member States to reach a consensus on a common set of frequently required electronic certificates. If such a common set could indeed be defined, it would be easier for economic operators to compile the relevant set of attestations, and for contracting authorities to validate them, with the main prerequisite for success being the existence of adequate national infrastructure (i.e. the availability of eAttestations).

The following exact measures have been included in the Action Plans under the second objective ("Achieve greater efficiency in procurement, improve governance and competitiveness"), and specifically under the heading 'Increase competitiveness of public procurement markets across the EU':

Measure	*Targeted party*	*Nature of the measure*
Commission considers proposing services for the electronic supply of certificates	Commission	Completing the framework
Member States and the Commission agree on a common set of frequently required electronic certificates	Member States and Commission	Completing the framework

Measures in the Action Plan in relation to eAttestations

The expected impacts of this approach were defined in the intervention logic description above:



It should be noted that the Action Plan does not explicitly require Member States to introduce eAttestations. Rather, the emphasis is on ensuring that any eAttestations in existence can be used to optimal effect. Given the scope of the measures, the most appropriate key indicator of the Action Plan's impact on eAttestations therefore appears to be the extent to which eAttestations can be used in cross border scenarios, and to what extent this usability is based on any services proposed by the Commission (as envisaged by the first measure) or an agreement on a common set of electronic certificates. Collectively, both measures aim to improve cross border transparency: is the availability and use of eAttestations clear in cross border eProcurements?

The actual availability of eAttestations can be used as a secondary indicator of the Action Plan's impact, since the measures build on the assumption that eAttestations would need to be exchangeable, and therefore that their availability is important to eProcurement in the European public sector.

7.3.4 Current status and evolution - matching with the Action Plan vision

7.3.4.1 Actions undertaken

With respect to the first measure ('the Commission considers proposing services for the electronic supply of business information and certificates in public procurement for implementation under the IDABC programme'), a series of actions can be identified, including within the IDABC programme, which continue to evolve to the present day.

An important first step was taken via the aforementioned 2008 Feasibility study on the electronic provision of certificates & attestations most frequently required in public procurements (see http://ec.europa.eu/internal_market/publicprocurement/docs/eprocurement/ecertificates-study_en.pdf). The aforementioned study found that authentic electronic evidences were still altogether rare in the Member States, and that interoperability was almost non-existent, due inter alia to the eSignature interoperability challenges mentioned elsewhere in this report.

In addition to collecting information on the national status of the availability of the key attestations/eAttestations in eProcurements, the study also defined a series of conceptual scenarios to build interoperability between existing eAttestation systems, i.e. to ensure that electronic attestations from an economic operator established in one Member State could be presented to a contracting authority in a different Member State. Roadmaps were subsequently drafted to implement the most favoured interoperability scenarios. Finally, the study presented a number of recommendations for future actions to gradually improve the availability and usability of electronic attestations in public procurement procedures.

The identified interoperability scenarios in this study, based on approaches applied in practice within the Member States, were the following:

- Use of unilateral declarations of compliance from the economic operator. In this scenario, official attestations are replaced by a declaration from the economic operator attesting that it meets the requirements for the procurement;
- Using an electronic attestation package signed by a TTP; in this case, only the competence of the TTP needs to be verified, rather than each individual eAttestation.
- The decentralised issuance of electronic attestations by the originating administrations (typically electronically signed documents);
- Use of a single trusted storage point of electronic attestations, i.e. making secure web spaces available to economic operators, which they can then make accessible to contracting authorities during a procurement;
- The construction of federated networks to facilitate information exchange between authorised parties. In this scenario, rather than working with actual eAttestations, information is directly exchanged between the source (e.g. tax authorities in Member State A who need to confirm compliance with tax obligations) and the destination (e.g. the contracting authority that needs to assess tax compliance).

A number of these approaches were also identified as good practices in the opinion of the High Level Group of Independent Stakeholders on Administrative Burdens (colloquially known as the Stoiber

Group) on public procurement[202]. The Group provided notably the following recommendations with respect to eCertificates:

- It strongly suggested generalising the possibility offered in the public procurement directives that, in open procedures, only the winner of a tender should be asked to introduce all documents that are requested by the EU legislation. This would shift the overall administrative burden from the current 5 bidders on average to the sole winner, hence reducing administration burden by approximately 80%.
- It further suggested introducing mechanisms that would make it possible to ensure that any requested document only has to be submitted once during an agreed period. Such mechanisms should be introduced for all tenders in one and the same Member State. In a later stage, the reciprocal recognition of documents between Member States should enable this principle to be applied across the EU.
- It strongly recommended to the Member States that the contracting authorities and entities do not ask for information that they already possess, information to which they themselves have access to or which was provided to them in earlier procedures.
- It strongly recommended to the Member States that the contracting authorities and entities use where possible appropriate and binding self-declarations by tenderers.
- It strongly recommended that the Commission pursues its efforts to diffuse eProcurement and e-government, so that Member States can provide their certificates and business documents electronically as recommended in the eProcurement Action Plan.
- Finally, it encouraged the Commission and the MS to streamline and simplify the procedures and to review the usefulness and necessity of the documents that are required.

Irrespective of the scenario chosen, the 2008 study recommended that, as a baseline precondition to be met before any of these scenarios could be implemented, an online database of commonly used attestations should be created. This database would indicate the main characteristics of the most common attestation in each Member State, including their contents and their availability in electronic form. The contents of the database could initially be based on the information collected in the 2008 study, and could thereafter be kept up to date by national experts, to improve its completeness and accuracy.

To help address this issue, the Commission has initiated the eCERTIS Feasibility study ('eCertificates II'). The resulting searchable eCERTIS database containing information on such (e)Attestations is expected to become operational in early 2010. Thus, the first measure has certainly been executed, albeit with some delay compared to the 2005 deadline included in the Action Plan.

The second measure called for Member States and the Commission to agree on a common set of frequently required electronic certificates for use in eProcurement procedures, scheduled for 2005-2006. The aforementioned study and the eCERTIS database provided important inputs to this process. However, eCERTIS is not yet operational, and no consensus has been reached yet between the Member States and the Commission on a common set of eCertificates. The measure has therefore not yet been implemented.

[202] See http://ec.europa.eu/enterprise/policies/better-regulation/files/hlg_opinion_on_ppfinal_en.pdf

The reason for this is in the implied assumption behind this measure, namely that eAttestations would be available in the Member States, and that it would therefore be possible to arrive at a consensus on the most common ones to be used in eProcurement. As noted in the 2008 study and as will be further examined in the section below on the national status, this assumption proved to be incorrect: eAttestations were (and still are) relatively rare, and are largely unused in eProcurements today. In practice, Member States have focused on creating alternatives to the use of eAttestations, rather than on making eAttestations available. This development was not anticipated by the measure, which could therefore not be executed.

None the less, a step towards achieving this goal is being made in the context of the large scale eProcurement pilot project PEPPOL. The second work package of this pilot project is working on the development of a so-called Virtual Company Dossier. Essentially, the Virtual Company Dossier is a standardised package of electronic evidences that can thereafter be submitted to any European contracting authority, in a way that would allow the contracting authority to easily determine the completeness and validity of the Dossier. Of course, PEPPOL is only a pilot project covering a limited number of Member States, and the outcome of the project would thus need to be given a more stable form (if successful). None the less, the successful conclusion of the work within this work package would appear to provide an important input towards reaching the goals of this second measure as well. Austria, Italy, France, Norway, Belgium, Czech Republic, Greece and Sweden are involved in further pilot implementations.

7.3.4.2 Evolution at the national level

While no actual data is available for 2004, it was already noted above that it seemed unlikely that eAttestations would be available at an appreciable level at that point in time; thus, the baseline for comparison to determine the evolution since the adoption of the Action Plan is set virtually at zero. The most recent data available was collected in the aforementioned 2008 study, and will be examined below.

Based on the key articles of Directive 2004/18/EC (notably article 45 and following), this study drafted a list of 9 requirements that economic operators might need to meet in the context of a procurement, and examined for each of these what types of evidences were commonly used to show compliance with that requirement. In each case, it was examined whether paper or electronic evidences were available, and in the case of electronic evidences, whether or not they were electronically signed. Unsigned electronic originals could be used e.g. in cases where compliance with a specific requirement could be shown via a publicly accessible website (e.g. a commercial register). In that case, the information would be available in an unsigned electronic format, and would still be reliable due to the fact that the website draws its information directly from an authoritative source.

The following table provides an overview of the transmission support for the different types of evidences in the Member States, EEA Countries and Candidate Countries: P=Paper, S=Signed electronic original or U=Unsigned electronic original.

	absence of conviction for natural persons	absence of conviction for legal persons	non-bankruptcy and financial status	compliance with fiscal obligations	compliance with social security obligations	economic and financial standing	professional qualification	technical and/or professional ability	quality assurance & environmental compliance
Member States									
Austria	P+S	P+S	P+S	P+S	P+S	P+U	P+S	P	P
Belgium	P	P	P	P	P	P+U	P+U	P	P
Bulgaria	P	P	P+S	P+S	P+S	P	P	P	P
Cyprus	P	P	P	P	P	P	P	P	P
Czech Republic	P	P	P+U	P	P	P+U	P	P	P
Denmark	P+U	P+U	P+U	P+U	P+U	P+U	P+U	P+U	P+U
Estonia	P+S	P+S	P+S	P+S	P+S	P+U	P	P	P
Finland	P	P+U	P+U	P	P	P+U	P+U	P	P
France	P+S	P+S	P+S	P+S	P+S	P+S	S	P+S	P
Germany	P	P	P+U	P	P	P+U	P+U	P	P
Greece	P	P	P	P	P	P	P	P	P
Hungary	P	P	P+S	P+S	P+S	P+U	P	P	P
Ireland	P+U	P+U	P+U	P	P+U	P+U	P+U	P+U	P
Italy	P	P	P	P	P	P+U	P+S	P	P
Latvia	P	P	P	P	P	P	P	P	P
Lithuania	P	P	P	P+U	P+U	P+U	P	P	P
Luxembourg	P+U	P+U	P+U	P	P	P	P	P	P
Malta	P+U	P+U	P	P	P	P+U	P+U	P	P
Netherlands	P	P	P	P	P	P+U	P+U	P	P
Poland	P	P	P	P	P	P+S	P	P+S	P
Portugal	P+S	P+S	P+S	P+S	P+S	P+S	P+S	P+S	P+S
Romania	P	P	P	P	P	P	P	P	P

	absence of conviction for natural persons	absence of conviction for legal persons	non-bankruptcy and financial status	compliance with fiscal obligations	compliance with social security obligations	economic and financial standing	professional qualification	technical and/or professional ability	quality assurance & environmental compliance
Slovakia	P	P	P	P	P	P	P	P	P
Slovenia	P	P	P	P	P	P	P	P	P
Spain	P+U	P+U	P+U	P+U	P+U	P+U	P	P	P
Sweden	P	P	P	P+U	P	P+U	P	P	P
United Kingdom	P	P	P	P+U	P	P+U	P	P	P
EEA Countries									
Iceland	P	P	P	P	P	P+U	P+U	P	P+U
Liechtenstein	P	P	P	P	P	P+U	P	P	P
Norway	P	P	P	P	P	P	P	P	P
Candidate Countries									
Croatia	P	P+S	P	P	P	P+U	P	P	P
Turkey	P	P	P	P	P	P	P	P	P

National availability of key eAttestations

The trend is immediately obvious: while paper attestations are universally available, eAttestations are rare, especially when looking only at signed eAttestations. Summarising the trends:

- 8 countries do not signal any electronic documents (signed or unsigned) being commonly used for any requirement at all.
- Only 8 countries report the use of signed eAttestations for some requirements.
- Only Portugal claims that electronic versions are commonly used to show compliance with all requirements, based on feedback provided by its national representative in the eProcurement Expert Group.

It should be noted of course that the study refers only to attestations which are 'commonly' used in public procurements. For a few attestations, the country reports noted that an electronic attestation did exist, but that they were still at an experimental stage or that they were not used in public procurements to a significant extent. The conclusion is at any rate clear: eAttestations (and certainly electronically signed eAttestations) are very rarely used in public procurements in practice, being limited to very few countries.

Broadly speaking, five main groups of countries could be distinguished:

- Countries which have not yet established a consistent eAttestation strategy (15 out of 32 countries; 47%). Many of these countries simply do not yet have any eProcurement infrastructure in place that covers eSubmission/eAwarding/eOrdering, and therefore do not have an immediate need for eAttestations. However, there are also a few countries with a mature eProcurement infrastructure (covering eSubmission, etc.) that have not (yet) made eAttestations a significant part of their eProcurement strategy: eProcurement (including eSubmission) is possible, but eAttestations are avoided, by using one of the strategies discussed directly below.
- Countries which rely on declarations of compliance from the economic operator (10 out of 32 countries; 31%). Such declarations can either serve to postpone the submission of attestations until a winning bid has been chosen, or can replace it entirely. Some examples of this approach include:
    - The Netherlands, where the main approach is encapsulated in the Regulation for Works Procurement 2005, which allows contracting authorities to require a so-called 'own declaration with a public procedure' ('*eigenverklaring bij een openbare procedure*'). This is a standardized document in which the tenderer formally declares to be in compliance with the requirements for which Dutch public procurement laws require a certificate, and in which he agrees to provide the relevant certificate if the contracting authority asks for it[203]. In this way, the cost and effort can be reduced significantly for tenderers, and the problem of converting these certificates to an electronic form can also be scaled down: certificates are (at least until after the awarding of the tender) replaced by a formal declaration.
    - France, which relies on a series of standardised declarations originating from the tenderer, with the main example being the DC5 form (statement of the tenderer - *déclaration du candidat*). All of these templates are available on-line in RTF-format[204], and must besigned using a certificate from one of the CSPs accredited by the Ministry of State Reform[205].

  In some cases, the submission of an offer as such is considered an implicit declaration of compliance with all requirements, meaning that attestations are eliminated altogether, unless the contracting authority chooses to request them at a later date. The latter approach (assumed implicit declaration) was confirmed in Belgium via a ministerial circular letter issued on 14 April 2007[206], establishing the principle that a submission of an offer constitutes an implicit declaration on honour confirming compliance with the exclusion criteria of the Royal Decree of 8 January 1996.

[203] Template available via http://www.aanbestedingskalender.nl/download.aspx?id=785&ext=doc

[204] See http://www.marchespublicspme.com/formulaires-marches-publics.html

[205] See http://www.marchespublicspme.com/fiche-pratique-marches-publics-elecroniques.html

[206] See http://www.belgium.be/eportal/application?pageid=contentPage&docId=45838 (Dutch version) or http://www.belgium.be/eportal/application?pageid=contentPage&docId=45840 (French version)

- Several countries have also implemented a limited trusted third party (TTP) or prequalification system (8 out of 32 countries; 25%), wherein economic operators may register with a TTP prior to participating in a public procurement, providing certain commonly required evidentiary documents to the TTP. In this case, the economic operator submits a single confirmation of compliance issued by the TTP to the contracting authority, or simply authorises the contracting authority to obtain any required information from the TTP. Typical examples include:
    - The Austrian tender register "Auftragnehmerkataster Österreich-ANKÖ"[207]. To provide this special support in procurement proceedings for contracting authorities, tenderers and candidates, ANKÖ offers a "list of appropriate entrepreneurs" (Liste der geeigneten Unternehmer). Austrian and foreign tenderers can register with ANKÖ in order to get included in this list of appropriate entrepreneurs. To do so, the tenderers have to sign a special "Declaration of consent" (*Zustimmungserklärung*) and a special authorization[208] and by submitting the documents and certificates pertaining to selection criteria[209]. The documents must be delivered electronically. The documents delivered are saved by ANKÖ, thus contracting authorities are able to contact ANKÖ directly to obtain confirmation of compliance of the tenderer with Austrian procurement law. The tenderer enables this procedure by submitting his ANKÖ-membership number in his offer.
    - The Danish Declaration of Service (*Serviceattest*[210]). This document gives information about the tenderers' financial situation, possible convictions etc. The Danish Commerce and Companies Agency ("*Erhvervs- og Selskabsstyrelsen*[211]") coordinates the gathering of information from other Danish public authorities in connection with procurements. When the Danish Commerce and Companies Agency has gathered all relevant information, they issue a public Declaration of Service to the tenderer. The Declaration of Service is an electronic document which can be sent direct to the contracting authority. Among the public authorities the Danish Commerce and Companies Agency will contact is the Danish Labour Market Supplementary Pension, bankruptcy court ("*skifteretten*"), the crime register ("*Kriminalregistret*") and the Central Customs and Tax Administration ("*Told og Skat*"). The Declaration is only available to Danish entities; foreign entities must still provide their formal certificates and/or solemn statement.
- Systems where the contracting authority has to obtain the required information itself, if the source is another public sector controlled entity. This approach, consisting of a direct and protected transfer of information from one administration to the next can be found on a limited scale in 5 out of 32 countries (16%), including Belgium, Greece, Slovenia and the Netherlands. However, the current application of these systems is limited, both with regard to the information that administrations can obtain (which must be easily accessible to the contracting authority) and with regard to the beneficiaries (which are exclusively national tenderers). In Belgium e.g., evidences only have to be provided if they are not freely available to the contracting authority (which is the case for many administrative documents relating to Belgian economic operators).
- Finally, 4 out of 32 countries (12,5%) have reported that administrations can simply issue electronic certificates or attestations which have been signed with a PKI signature, with Portugal being the main example of this approach. However, in all countries which reported

[207] See http://www.ankoe.at

[208] Available via https://www.ankoe.at/ANBOT_INL.pdf

[209] Available via https://www.ankoe.at/downloads.asp

[210] See http://www.eogs.dk/sw28332.asp

[211] See http://www.eogs.dk/

this approach, the systems were largely in a pilot stage, and not yet commonly used in public procurements.

Since the latter category (electronic attestations issued directly by public administrations) did not (yet) occur in eProcurements in practice to an appreciable level, it is important to stress that at this time there are thus only three types of electronic attestations to be considered:

- Self-declaration forms, signed by the economic operator using the signature solution permitted by the eProcurement system (if signatures are required). However, it is debatable whether these should be considered eAttestations, since they offer no guarantee other than the candidate's assurance of compliance.
- Direct information exchange between administrations, i.e. the contracting authority will no longer require the economic operator to provide certain information, because it can access them directly from an authentic source. Again, it is debatable whether this should be considered an eAttestation: while the data transfer perfectly emulates the functionality of a traditional certificate, the concept is more akin to an explicit mandate given to the administration to make the inquiries that are required to determine compliance with certain tender specifications.
- Declarations of compliance from TTPs in a prequalification system, i.e. the contracting authority is assured by a TTP (which may be a public or private sector entity) that the tenderer meets certain requirements on the basis that the tenderer has undergone a prior registration with the TTP, during which certain evidentiary documents have been provided. However, this again usually does not take the form of an eAttestation provided to the tenderer by the TTP, but rather a mandate to the contracting authority to request this information from the TTP (a 'pull model'), or an instruction to the TTP to provide this information to the contracting authority (a 'push model').

Examining these approaches, one can only conclude that the main approach used by the surveyed countries to handle the problems related to attestations is to install electronic procedures that eliminate or reduce the need for attestations, either in a paper or electronic form. The use of new separate official eAttestations in public procurements on the other hand is virtually non-existent.

From an interoperability perspective, all of the three models described above – self declaration forms, direct information exchange and prequalification systems – are difficult to extend to foreign users:

- Declaration forms often require the economic operator to have access to a supported signature type, and require him to fully comprehend the declaration which he is signing.
- Direct information exchange presently only works on a national level. Information must be provided directly from local databases, and opening such databases to foreign contracting authorities is both legally and politically very sensitive, and presents substantial security and liability risk.
- Finally, prequalification systems are also frequently less accessible to foreign tenderers, because they offer the greatest benefit to tenderers who can easily register with the TTP and who frequently submit offers where the statement from the TTP is used. Both of these factors favour local tenderers over foreign tenderers.

Thus, reliance on these approaches shows substantial benefits, but at the current stage mostly to local tenderers, who see their administrative burden reduced significantly. For foreign tenderers however, it

is much more difficult or in some cases even impossible to use these systems, let alone to derive any proportionate benefit from them. Indeed, in practice, systems that rely on electronic attestations at this time are rarely accessible to foreign tenderers, with the sole exception being systems which rely on unilateral declarations in instances where the supported signature method is available to foreign bidders.

In conclusion, it is clear that eAttestations have not seen much take-up at the national level in eProcurements yet, and Member States have instead focused on adopting alternatives to their use in eProcurements, with declarations of compliance by the economic operators being a leading approach. As a result, the issue of cross border use of eAttestations for now appears to be moot. However, it is worth noting that at least in some Member States, such alternatives are seen as provisional, to be replaced when eAttestation infrastructure matures. Ongoing European efforts (including the aforementioned eCERTIS database and the PEPPOL VCD work) support this evolution.

7.3.4.3 Matching with the Action Plan

Above, we noted that the most appropriate key indicator of the Action Plan's impact on eAttestations would be the extent to which eAttestations can be used in cross border scenarios, and to what extent this usability is based on any services proposed by the Commission (as envisaged by the first measure) or an agreement on a common set of electronic certificates. The actual availability of eAttestations was proposed as a secondary indicator of the Action Plan's impact, since the measures build on the assumption that eAttestations would need to be exchangeable, and therefore that their availability is important to eProcurement in the European public sector.

The overview above shows that the impact of the Action Plan has so far been very limited, due to the fact that eAttestations have not been introduced and taken up in eProcurement by the Member States at the levels tacitly assumed by the Action Plan. While Commission initiatives (like eCERTIS) have improved the transparency of national attestation practices and the PEPPOL VCD work supports a gradual evolution towards a common attestation set, neither of these initiatives can compensate for the fact that Member States have not taken up eAttestations at an appreciable level, making their interoperability a moot point.

Thus, the current situation with respect to eAttestations does not match the outcome envisaged by the Action Plan on this point. However, it should also be recalled that the ultimate objective behind the eAttestations measures (the 'overall impact' in the intervention logic schemes above) was to accelerate the uptake of eProcurement and to make eProcurement as freely accessible a possible. Member States have provisionally opted to implement eProcurement without eAttestations as far as possible, mainly due to the unavailability of eAttestations and due to the interoperability challenges presented by their cross border use. Thus, while the provisional elimination of eAttestations at the national level may not correspond to the direct results envisaged by the Action Plan's measures for eAttestations, the alternatives chosen by the Member States can also result in the final outcome envisaged by the Action Plan as a whole, namely in making eProcurement accessible across borders.

However, this would require that the alternative models described above – self declaration forms, direct information exchange and prequalification systems – could be used by foreign economic operators as well. As was noted above, this is again rarely the case. In that respect, eAttestations (or perhaps more accurately in the present context: the need to provide certain electronic evidences to show compliance with specific participation requirements) remain challenging to this day, and the Action Plan has not been able to significantly impact this issue yet.

7.3.5 Remaining gaps/barriers

Prior to looking at the structured table of gaps and barriers, it is worth adding a cautionary note. The eAttestations issue can be examined from two different perspectives: a formal perspective (looking at the availability of authentic electronic documents submitted by the economic operator as an addition to its own bid, and which demonstrates compliance with certain requirements) and a functional perspective (looking at the need to provide certain electronic evidences to show compliance with specific participation requirements).

The Action Plan operated largely on the formal perspective, i.e. on the assumption that eAttestations would be created to replace paper attestations, and that these would be used in eProcurements. While this has not yet occurred at significant level, this was a reasonable assumption and may yet occur to some extent, as corroborated by the findings above that many Member States are experimenting with eAttestations or have expressed an intention to introduce them in the future. Under the formal perspective, the main remaining gap is that such eAttestations do not yet exist in appreciable numbers, making the interoperability question premature, even six years after the adoption of the Action Plan. If eAttestations are to be used in cross border eProcurements, they must first be introduced, and this is an action which must be undertaken at the national level, likely as a part of eGovernment modernisation in general. From a formal perspective, the gaps and barriers table looks as follows:

Possible gap / barrier	Applicable to this phase?	If yes, explain
Lack of available infrastructure	Yes	eAttestations are not systematically available, and are virtually never used in eProcurements.
Interoperability	Yes	When eAttestations are made available, it is difficult to validate them in cross border scenarios, due to different document and signature characteristics (and of course practical issues such as language barriers and semantic challenges, which also exist in a paper environment).
Legal uncertainty	Yes	Due to the aforementioned language barriers and semantic challenges, it is hard for receiving authorities to determine whether a foreign eAttestation actually matches the information requirements imposed under national laws.
Trustworthiness	Yes	As with paper attestations, it is hard for receiving authorities to determine whether an eAttestation is authentic (i.e. issued by a competent authority).
Accessibility	No	/
Economic viability and use cases	Yes	The introduction of eAttestations may be quite costly, especially in cases where the attestations are traditionally locally issued (e.g. by communes). Obviously, they may have clear applications and benefits outside of eProcurement, but the business case for eAttestations is hard to estimate.
Transparency	No	/
Market challenges	No	/
Distribution of benefits	No	/

Gaps and barriers with respect to eAttestations

However, one could also take a functional perspective, emphasising that eAttestations are not a goal but a means, and that alternative approaches could provide a more flexible and dynamic solution to addressing the evidentiary problems, at least in the shorter term. This is the approach that Member States have been forced to take, in the absence of usable eAttestations, via the use of self declaration forms, direct information exchange and prequalification systems. When approaching the problem from a functional perspective rather than a formal one, the main gap is therefore the lack of interoperability between these alternative approaches.

On that point, the Virtual Company Dossier under development within PEPPOL is certainly a promising development, albeit with some weaknesses[212] that can be identified for the overall concept. These weaknesses are mostly derived from the complexity of the domain and how the VCD solution reacts on this domain. One of the biggest weaknesses is probably the development of context specific data for the evidences within a VCD. The development of context specific data would ensure the automatic processing of electronic attestations without regard to linguistic barriers. The development of standards and context specific vocabularies is time consuming and requires long term involvement of user groups that will make use of these standards. The VCD contains several different kinds of evidences, and developing common standards for each one should be done through initiatives such as CEN BII, BRITE, XBRL or ECRIS.

Similarly, with respect to direct information exchange between attestation providers and contracting authorities, the provision of context specific data is a precondition. While direct information exchange would provide many opportunities with regard to increase the actuality of evidence, to lower the transaction costs of the parties involved and to reduce the time to create a VCD, such a direct exchange is very difficult to establish due to the large number of entities and attestation services to be interconnected, access policies have to be developed, legal uncertainties have to be resolved and political guidelines have to be considered. To address these problems, the VCD provides in particular in its highest stage of refinement a guideline on how to move forward in order to reach this ambitious aim. However, actually implementing direct data exchange will not be a major focus of PEPPOL as such.

Finally, the VCD concept is dependent on a number of services that rely on manual and semi-automated input. Thus the VCD system will be primary a tool for the economic operator to construct a VCD package instance in compliance with the requirements stated in particular call for tender which he can fill through additional inputs. The VCD will not enforce any development of electronic attestations at the national level as this is a clear national competence.

In conclusion, the remaining gaps are largely linked to the approach taken to eAttestations, and specifically whether one considers it a goal to replace paper attestations by eAttestations (in which case the main challenge is to introduce eAttestations at the national level) or whether they should be replaced by other processes (in which case a clear vision on how to support such processes is needed).

[212] Source: PEPPOL - Deliverable 2.1 « Functional and non-functional requirements specification for the VCD, including critical synthesis, comparison and assessment of national vs. pan-European needs."

7.4 eAuctions

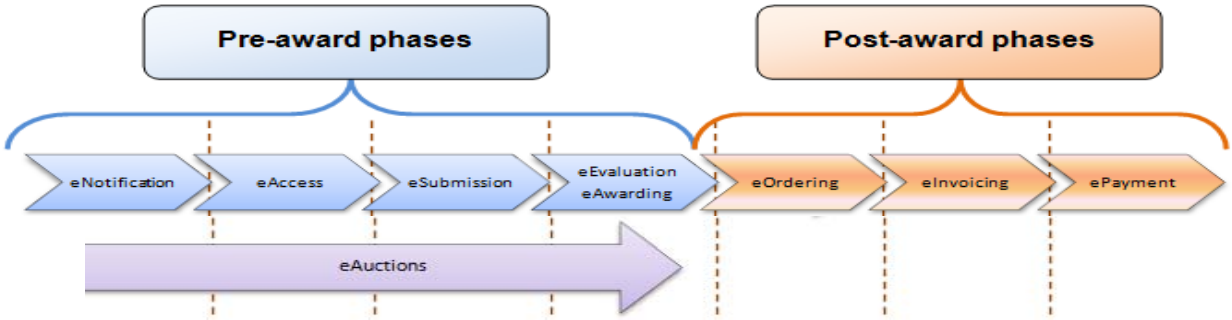
7.4.1 Definition and scope

7.4.1.1 Conceptual description

One of the more interesting procurement mechanisms enabled through the use of electronic means of communication are electronic auctions, defined in both Public Procurement Directives as 'a repetitive process involving an electronic device for the presentation of new prices, revised downwards, and/or new values concerning certain elements of tenders, which occurs after an initial full evaluation of the tenders, enabling them to be ranked using automatic evaluation methods' (article 1.7 of Directive 2004/18/EC and 1.6 of Directive 2004/17/EC).

Thus, through an electronic auction, economic operators have the possibility of updating their offers one or more times after the initial submission with respect to the price or to other criteria that can be automatically evaluated, in order to ensure that their offer is optimally placed to win the procurement contract. The dependence on automatic evaluation is the reason why the Directives exclude certain service contracts and certain works contracts having as their subject matter intellectual performances from the scope of electronic auctions, as such performances cannot reasonably be evaluated automatically.

eAuctions cover all pre-award phases of a public procurement, as shown schematically below:



eAuctions in an eProcurement process

Specifically, eAuctions will first be announced via an eNotification, after which the required documents will be made available via eAccess (much like any open eProcurement procedure). The main difference arises in the eSubmission phase, and in the eEvaluation/eAwarding phase. An open procedure will involve each participating economic operator to submit a single bid, after which the contracting authority will comparatively assess each received bid and selected the best one (as determined through the pre-established assessment criteria). In an eAuction, both of these phases are iterative: each economic operator will submit an initial offer, but will thereafter have the opportunity of further improving its bid to increase its chances of winning the contract. Thus, there will typically be

multiple eSubmissions as the offers are iteratively improved, and a series of interim evaluations of the received offers before the eAuction is closed and a final winning bid is selected. The process is thus more complicated than open procedures, with a very specific set of advantages and challenges, as will be discussed below.

7.4.1.2 Provisions within the Public Procurement Directives

The legal framework for eAuctions is largely contained in article 54, resp. 56 of Directives 2004/18/EC and 2004/17/EC, which provide certain basic rules. As with DPS, it should be noted that the transposition of these provisions is optional: Member States may choose not to support eAuctions specifically in their national transpositions.

The main rules found in the Directives (references below refer to Directive 2004/18/EC) relate to the following points:

Art. 54[1]	*eAuction possibility: transposition of eAuction provisions is optional*
Art. 54[2]	*eAuction modalities: only to be used in open, restricted or certain negotiated procedures; eAuctions are considered an award modality which can be used when the contract specifications can be established with precision. eAuctions may also be held on the reopening of competition among the parties to a framework agreement or under DPS.* *The electronic auction shall be based:* *- either solely on prices when the contract is awarded to the lowest price,* *- or on prices and/or on the new values of the features of the tenders indicated in the specification when the contract is awarded to the most economically advantageous tender.*
Art. 54[3]	*EAuction notice & specification. Usage of eAuctions must be indicated in the contract notice, and specifications must include:* *(a) the features, the values for which will be the subject of electronic auction* *(b) any limits on the values which may be submitted* *(c) the information which will be made available to tenderers and, where appropriate, when it will be made available* *(d) the relevant information concerning the electronic auction process;* *(e) the conditions of bidding and any minimum differences which will, where appropriate, be required when bidding* *(f) relevant information on the equipment used and the arrangements and technical specifications for connection*
Art. 54[4]	*EAuction set-up. Before proceeding with an electronic auction, contracting authorities shall make a full initial evaluation of the tenders in accordance with the award criterion/criteria set and with the weighting fixed for them.* *All tenderers who have submitted admissible tenders shall be invited simultaneously by electronic means to submit new prices and/or new values. The electronic auction may take place in a number of successive phases. The electronic auction may not start sooner than two working days after the date on which invitations are sent out.*
Art. 54[5]	*EAuctions for best economic offer. In this case, the invitation shall be accompanied by the outcome of a full evaluation of the relevant tenderer. The invitation shall also state the mathematical formula to be used in the electronic auction to determine automatic rerankings. Where variants are authorised, a separate formula shall be provided for each variant.*
Art. 54[6]	*EAuction running: contracting authorities must instantaneously communicate to all tenderers at least sufficient information to enable them to ascertain their relative rankings at any moment. They may also communicate other information concerning other prices or values submitted, provided that that is stated in the specifications. They may also at any time announce the number of participants in that phase of the auction. In no case, however, may they disclose the identities of the tenderers during any phase of an electronic auction.*
Art. 54[7]	*EAuction closing, which can occur in one of three manners:* *(a) in the invitation to take part in the auction they shall indicate the date and time fixed in advance;* *(b) no more new prices or new values are received which meet the requirements concerning minimum differences.* *(c) the number of phases fixed in the invitation has been completed; a timetable must be provided in the invitation.*
Art. 54[8]	*EAuction awarding. Contracting authorities may not have improper recourse to electronic auctions nor may they use them in such a way as to prevent, restrict or distort competition or to change the subject-matter of the contract.*

Summary of provisions in the Public Procurement Directives related to eAuctions

In the sections below, we will evaluate which countries have implemented an eAuctions regime in their public procurement laws, and to what extent any gold plating may have occurred.

7.4.2 Main opportunities and challenges of using eProcurement for this tool

7.4.2.1 eProcurement opportunities

The main potential appeal of eAuctions for contracting authorities lies in the fact that economic operators will be able to lower their prices or improve other aspects of their bid if they notice after the initial full evaluation that their initial offer is insufficient to win the contract. Thus, eAuctions provide the opportunity for economic operators to establish bids which are more attractive for the contracting authority. In essence, the iterative character of eAuctions allows competition in a specific procurement to be refined and intensified. As a result of economic operators changing their bids to improve their chances of winning, it can logically be expected that the winning bid would result in a better price, and/or in other more favourable modalities that could be evaluated automatically by the eAuctions system (e.g. same price, but longer warranty periods, lower delivery periods, etc).

In theory, eAuctions should provide the additional advantages of:

- Reducing the time and effort spent to conduct direct negotiations, since the assessment criteria will be defined in terms that can automatically be compared between the offers;
- Stimulating competition in the internal market, since economic operators will be more directly confronted with their competitors and their terms of service;
- Insuring a more transparent process, since economic operators will be made aware of their comparative ranking during the iterative bidding process (and thus of their progress throughout the procurement process).

7.4.2.2 eProcurement challenges

It should be noted however that these benefits can only be realised in an environment which is sufficiently competitive. This requires specifically that there are sufficient economic operators participating and willing to review/amend their bids in an eAuction, and that the eAuction system is sufficiently transparent for the economic operators to be able to assess whether and where their bids need to be improved. One could e.g. imagine an eAuction with three bidders, in which economic operator A is identified as the best candidate after the initial full evaluation. If the eAuction mechanism allows economic operator A to determine both the quality of his rivals' bids and that his rivals do not improve their bid, then the eAuction in fact establishes an opportunity for economic operator A to worsen his bid from the contracting authority's perspective, by increasing prices or otherwise changing modalities to ensure that the bid remains only marginally better than those of his competitors. Thus, depending on the transparency present in the system, in an insufficiently competitive environment eAuctions could theoretically result in worse bids from the contracting authority's perspective.

Depending on the implementation of the eAuction, participation may also imply that certain key information (such as the aforementioned examples of product price, warranties, delivery periods, etc)

is made available to direct competitors. As this information may be considered commercially sensitive, such transparency may discourage economic operators from participating in an eAuction. This risk can be diminished to a certain extent through careful implementation, e.g. by only revealing rankings within a specific auction to the participants (as required by the Directives), without disclosing the specific areas where a bid is superior or the magnitude of the difference.

Other challenges relate most notably to the following:

- *Defining suitable use cases*: firstly, the rules must define clearly which types of procurements can make use of eAuctions. The clear basic constraint (included in the Directives as well) is that "the contract specifications can be established with precision" (article 54 (2) of Directive 2004/18/EC), and more specifically that "the features, the values for which will be the subject of electronic auction, are quantifiable and can be expressed in figures or percentages" (article 54 (3a) of Directive 2004/18/EC). This is the basic requirement in order for an eAuction to function, as the bids must be susceptible to automatic evaluation and ranking. Thus, contracting authorities cannot apply the eAuction in cases where this is not possible. This can conceivably be done by categorically excluding some categories of public procurements, and e.g. only allowing eAuctions for supply contracts (at the exclusion of services and works contracts). Such an exclusion goes beyond the terms of the Directives, which only contain an exclusion for "certain service contracts and certain works contracts having as their subject-matter intellectual performances". However, it should be noted that this is an issue which cannot be fully resolved through regulations: it is clear that some services or even works contracts do not imply an appreciable intellectual component and could therefore conceivably rely on eAuctions, whereas certain supply contracts may have such a large diversity in the characteristics of the goods being purchased that comparable features cannot be consistently and logically defined. Thus, in most cases, it will remain the responsibility of the contracting authority to make the final determination whether an eAuction is a viable solution, and to deal with the potential consequences if this decision turns out to be in error.

- *Defining clear assessment criteria*: in order to rank bids, specific criteria have to be defined that can be applied consistently to all bids. In most cases this will likely not prove to be overly complex; however, in situations where a specific criterion is ambiguous or subject to local interpretations, complications may arise. Specifically, contracting authorities may receive bids which are not sufficiently comparable due to the fact that economic operators define the criteria slightly differently. When competing purely on price such differences are likely to be rare (although not entirely impossible, as one economic operator may communicate the price of a product as such, whereas another might be referring to e.g. total cost of ownership), but when choosing the economically most advantageous bid where other factors are considered, discussions may arise. This poses a dual risk: on the one side there is the possibility of an economic operator registering a complaint over his offer not being selected due to an ambiguous phrasing of the comparison criteria; and on the other hand contracting authorities may end up selecting a bid which was only found to be most favourable due to the fact that the participant chose a more restrictive interpretation of the comparison criteria. In summary, it is crucial that assessment criteria are clearly and unambiguously defined. From a cross border perspective, this is particularly important, as foreign bidders may not be familiar with specific meanings of assessment criteria in another country.

- *Defining clear eAuctions processes*: the Directives take a high level approach when describing the processes involved in an electronic auction, focusing largely on the conceptual steps to be taken, but without going into detail on specific implementation choices. This allows a relatively wide margin of interpretation when implementing specific eAuctions solutions. In principle, this

is a beneficial characteristic as it allows local eAuction implementation to be tailored to local preferences and needs; however, this freedom could also result in substantial practical divergences. Especially from a cross border perspective, care should be taken that the practical processes for participating in an eAuction are sufficiently accessible to ensure fair competition.

- *Ensuring sufficient transparency*: as was already noted above, the Directives are fairly summary when it comes to transparency towards the participants in an eAuction, noting principally that relative rankings should be revealed at each phase of the auction (so that participants know their relative positions), and that the identities of participants should not be revealed during the auction itself (article 54 (6) of Directive 2004/18/EC). The Directive thus contains no binding requirements on divulging the specific characteristics of the winning bid that would allow participants to determine by how much they would need to improve their bids in order to stand a chance at taking the best position. This approach has both advantages and disadvantages. The primary advantage of not revealing specific characteristics is obviously that bidders are unable to merely make the exact marginal changes needed to win a contract. This is an advantage, since otherwise eAuctions would likely only result in optimal bids after a large number of iterations (since each iteration only provides an incentive to do slightly better than the current leading bid), which might not be feasible or realistic for many procurements. On the other hand, it also carries the disadvantage that other participants may not be very inclined to update their bids if they only know that their own bids are inferior to the leader, without knowing on which points their bids are considered weaker or what the size of the difference with the leading bid is. In that case, after the initial bids, participants would rationally only be likely to submit an updated bid provided that they have reasons to suspect that the difference with the leading bid are sufficiently small to ensure that they can still be overcome. Otherwise, they will not submit an updated bid, and the potential advantage of an eAuction is lost. From a cross border perspective this problem may be worsened, as foreign participants in an eAuction are less likely to know the local market, and they may therefore be less likely to be able to estimate the relative advantages of the leading bid. If this is the case, they may also be less likely to provide a second and improved bid, as they will have greater difficulties in determining where improvements would be needed and where they should be made.

- *Avoiding negative impacts on price and/or quality*: a conceptual risk linked to the use of eAuctions is the fact that they aim to simplify the award process by working on predefined assessment criteria, which may not be able to reflect all relevant characteristics of the product or service. In other words, economic operators may tailor their goods or services to ensure that their bids score optimally, while cutting back on other important aspects that are not considered in the scoring mechanism. For instance, in an eAuction for supplies based only on price, prices can be more easily lowered by offering lower quality products. Thus, depending on the contracts where they are applied and the chosen assessment criteria, eAuctions present the risk of resulting in lower quality goods or service, and thus in safety or health concerns. Similarly, as was noted above, eAuctions are only likely to bring benefits if sufficient competition is ensured. In markets where there is a limited number of active economic operators, eAuctions may not result in comparable bids or in realistic competition, in which case benefits are unlikely to materialise.

From a technical perspective, the implementation of eAuctions does not seem to raise any specific additional problems other than the correct modelling of the functional requirements (the possibility of submitting a first offer which can thereafter be improved, automated assessment of key attributes, etc). Most of the complexity is situated here, rather than in the horizontal topics which are present in any eProcurement (like the secure transmission of data, the confidentiality and traceability of communication, the authentication and identification of participants...).

7.4.3 The 2004 status and vision of the Action Plan

7.4.3.1 2004 status

Like DPS, eAuctions were still a relatively new phenomenon in 2004, with seven Member States (Denmark, France, Italy, the Netherlands, Slovenia, Spain and the UK) claiming some operational experience, and three more (Austria, Hungary and Portugal) reporting that a pilot had been initiated. Only Denmark and Italy however made substantial use of eAuctions, with experiences in other countries being at a much smaller scale. Both of these systems were based on an "out-of-the-box" Oracle Exchange Server and shared certain technical characteristics. The only fields where the functionality did not fit with the provisions of the European Directives were the areas of interoperability, monitoring of logs, questions and answers as well as detection of tampering attempts, where further efforts would be needed.

With respect to future plans, 23 Member States (i.e. a substantial majority of 92%) noted that they were planning to introduce eAuctions, with only Belgium noting that it had no such intentions, and Finland indicating that the issue was not yet decided. As with DPS, the 2004 Impact Assessment noted that these differences in intentions could lead to market fragmentation, notably with economic operators in countries that would support eAuctions having more experience in advanced procurement mechanisms than their competitors in other Member States.

7.4.3.2 Vision of the Action Plan and indicators for success

As with DPS and framework agreements, the Action Plan does not contain specific measures addressing eAuctions explicitly, and only mentions them on two occasions:

- Firstly, the Action Plan noted that the standard forms would need to be updated to allow eAuctions to be reported.
- Secondly, the Action Plan signalled the concern of possible inappropriate use of electronic auctions which could cancel out the benefits from increased efficiency. Thus, it will need to be examined to which extent and in which cases eAuctions are used in practice.

Given that the Action Plan thus does not contain specific measures in relation to eAuctions, the issue of defining indicators for success is moot.

7.4.4 Current status and evolution

7.4.4.1 Implementation of eAuctions legislation

As with DPS above, we will first examine which of the 32 examined countries have implemented a legal framework for eAuctions. In the table below, the transposition status will be indicated as either:

- Transposed, i.e. a legal framework for eAuctions has been provided;
- Not transposed, i.e. a legal framework for eAuctions has not been provided, and no transposition plans are known;
- Transposition planned, i.e. a legal framework has not yet been provided, but plans to transpose the provisions exist;
- Unknown, i.e. it is unclear whether transposition has occurred.

Specific transposition modalities (such as literal copying of the provisions of the Directive, partial transposition or gold plating) and key examples will be commented further below.

Transposed	Not transposed	Transposition planned	Unknown
Austria Bulgaria Cyprus Czech Republic Denmark Estonia France Greece Hungary Ireland Italy Latvia Lithuania Malta The Netherlands Poland Portugal Romania Slovakia Slovenia Spain United Kingdom Croatia Iceland Norway Turkey	Germany Liechtenstein	Belgium[213] Finland[214] Luxembourg[215] Sweden[216]	
Total: 26 countries (including 22 MS)	**Total: 2 countries (including 1 MS)**	**Total: 4 countries (including 4 MS)**	**Total: 0 countries (including 0 MS)**

National transposition of provisions in the Public Procurement Directives related to eAuctions

Thus, the vast majority of countries (30 out of 32, 94%) have made a decision to implement the relevant provisions of the Directives, with the sole exceptions being Germany and Liechtenstein. In Germany, no transposition was foreseen as it was considered that further debate was required on implementation choices, and this issue was therefore left for further amendment at a later stage.

[213] Transposition is foreseen in the draft Act of 2006, but this Act hasn't entered into force yet in its entirety. Meanwhile, the provisions of the amended 1993 Act remain applicable, which do not foresee a legal framework for eAuctions.

[214] The main Act of 2007 contains the definition of eAuctions, but no substantive rules. These are to be determined in a specific regulation, which has not been issued yet.

[215] As in Finland, the main Act (of June 2009) contains the definition of eAuctions, but no substantive rules. These are to be determined in a specific regulation, which has not been issued yet (the recent regulation of August 2009 does not yet contain specific rules for eAuctions).

[216] No legal framework currently exists, but a legal proposal is currently under consideration by Parliament.

However, since eProcurement regulations in Germany depend heavily on a system of self-regulatory measures, there is nothing stopping contracting authorities from establishing an ad hoc framework to use eAuctions. In the case of Liechtenstein, it was noted that eProcurement in general was not considered to be a key political priority due to the size of the procurement budget and the geographic and demographic characteristics of the country, which would make it more difficult to justify substantial investments in more complex eProcurement modalities such as eAuctions.

This corresponds relatively closely with the situation identified in the 2004 Impact Assessment, where 23 out of 25 Member States (92%) noted that they were planning to introduce eAuctions. The two countries which had announced their reticence (Belgium and Finland) indeed have not yet introduced a legal framework, although legislative work is underway in both cases[217].

Among the 26 countries that have transposed the provisions with respect to eAuctions, several transposition strategies can be identified. Below we will examine the main possibilities, which have been classified as:

- Direct transposition, i.e. a virtual copying of the relevant provisions of the Directives without notable national changes;
- Gold plating, i.e. national transpositions which have tried to add value to the provisions of the Directives by going into more detail on certain points;
- Simplified transposition, i.e. national transpositions which only partially transpose the provisions of the Directives;
- Unknown, i.e. no details on the transposition strategy are known.

Interesting implementation choices will be examined in greater detail below, by looking at how national choices may diverge from the provisions of the Directive.

Direct transposition	Gold plating	Simplified transposition	Unknown
Denmark Ireland Italy Latvia Lithuania Malta The Netherlands Romania Slovakia Slovenia Spain United Kingdom Iceland Norway Turkey	Austria Czech Republic France Poland Portugal Croatia	Estonia	Bulgaria[218] Cyprus Greece Hungary[219]
Total: 15 countries (including 12 MS)	**Total: 6 countries (including 5 MS)**	**Total: 1 country (including 1 MS)**	**Total: 4 countries (including 4 MS)**

National approaches to the transposition of provisions in the Public Procurement Directives related to eAuctions

[217] Or more accurately: the updated legal framework in Belgium is awaiting entry into force, and new Finnish regulations are currently under consideration.

[218] The general act is known (http://rop3-app1.aop.bg:7778/portal/page?_pageid=173,1106253&_dad=portal&_schema=PORTAL); however, specific provisions with respect to eAuctions are included in separate Rules of Implementation.

[219] No specific details are known; however, the general Hungarian Act (http://www.kozbeszerzes.hu/static/uploaded/document/PPA_2009_dec_3.doc) specifies that contracting authorities may only use eAuctions when using negotiated procedures, provided that an open or a restricted procedure or the competitive dialogue has been unsuccessful (art. 130 (8)); or in the context of a framework agreement (art. 136D (6). Thus, it appears that eAuctions are considered somewhat as a fallback option for procurements. No specific details are known, as the exact procedures for eAuctions are stipulated in separate regulations (the Government decree no. 257/2007 (par. 17-26)), which are presently not available in a translated format.

Thus, a majority of 15 out of 26 countries (58%) have chosen to stay very faithful to the provisions of the Directives, neither adding nor removing any substantive provisions. While the provisions of the Directives are frequented reworded or restructured during the transposition, no material changes in the legal framework are made in this case. The most striking example of this is the Danish transposition, in which the Directives on public procurement are directly applicable since they are incorporated *telles quelles* by Government orders. The EU Directives are printed as an annex to the respective Government orders and constitute the actual legislation in the field of public procurement. As such, the Directives are directly applicable national law.

Six countries out of 26 (23%) have chosen to modify the provisions to some extent, e.g. by limiting the types of contracts where eAuctions could be used or by changing the communication modalities. Below we will examine the impact that this has had.

Estonia has elected for a simplified (partial) transposition of the Directives. As will be noted below, in this case Article 54 (4) to (8) of Directive 2004/18/EC and the corresponding provisions in Directive 2004/17/EC do not appear to have been transposed completely. There do not appear to be explicit provisions for the communication of formulas for the calculation of rankings, for the communication of relative positions of the economic operators during the tender, or for the closing possibilities of the tender. However, as with DPS, secondary legislation that will contain more detailed provisions in the field of eAuctions is expected to be enacted in the second quarter of 2010.

Finally, for four countries (Bulgaria, Cyprus, Greece and Hungary) insufficient data on transpositions strategies was available.

In Annex D to this report, we have included a comprehensive table describing the main tenets of the transposition for each of the 22 countries for which we have been able to determine the transposition strategy. Looking specifically at the six gold plating countries in a bit more detail (namely Austria, the Czech Republic, France, Poland, Portugal and Croatia), it is clear that gold plating has been limited in scope, and has aimed to deal specifically with the following aspects of eAuctions:

- **Delineating the procurements where eAuctions might be productively used:** being dependent on automated evaluation, there is an inherent limit to the types of procurements where eAuctions can be applied, as is also witnessed by the exclusion in the Directives of certain works and services contracts that involve intellectual performances (which cannot be reasonably assessed and ranked automatically). A few countries have defined further limits:
    - In France, eAuctions may only be used for the purchase of goods over the thresholds specified in article 26 (II) of the French Public Procurement Code (i.e. 133 000 EUR for State procurements, 206.000 EUR for procurements by the « *collectivités territoriales* » or by defense authorities). Thus, usage of eAuctions for lower cost purchases is excluded, as are all services and works contracts. eAuctions are thus seen as a modality for higher cost supply contracts.
    - Inversely, in Poland eAuctions can only be used for contracts *below* a threshold of 60.000 €; thus making eAuctions a modality for lower cost contracts. In addition, the act on public procurement makes a distinction between the terms „licytacja" and „aukcja"; both can be translated in English as an auction. However, the first case ("licytacja") concerns a self-reliant procedure to place orders for strictly defined goods and services; the second one is considered a modality of some classic procedures

(unlimited auctions, limited auctions, negotiations with publishing). This does not appear to have an impact in practice.

- In Portugal, Auctions may only be used for purchase/rent contracts of movables, or for services contracts. In addition, there are no provisions specifically for conducting auctions in multiple phases.
- It may also be noted that two countries (Iceland and Ireland) do not appear to have explicitly integrated the elimination of intellectual performances from the scope of eAuctions; however, in both cases this aspect appears to be reasonably covered by the clarification that auctions can only be used "if the contract specifications can be established with precision". For this reason, neither example was retained as a case of gold plating.

- **Clarifying communication flows during the auction**: in some countries, the provisions with respect to electronic auctions also add specific clauses on how communication should proceed. This includes:
  - **The obligation to immediately announce winners on the website of the eAuction** (Austria and Croatia)
  - **More extensive notice requirements:** in Croatia, required communication in the notice includes e.g. registration and identification requirements, the web site where the winner will be announced, any required guarantees, and any other relevant information. General notice obligations in the Directives thus appear to have been integrated into the specific eAuction provisions.
  - **The obligation to register/log all communications in the course of an eAuction** (seen in Austria and Croatia).
  - **The obligation to make certain information available after each phase during the eAuctions.** The Directives already require that relative rankings are made available as a minimum, but some countries have provided further transparency improvements. In Austria, the currently lowest price must also be made available when competing solely on price (thus providing an indication of the 'score-to-beat' in these procurements). The French Code allows two alternatives: either relative rankings may be made available, or the result of the leading bid. In the Czech Republic, the law refers to the right of economic operators to require the contracting entity to provide them with information about auction values submitted by other tenderers, if the contracting entity has allowed for such right in the tender requirements or in the invitation. Thus, this practice does not apply by default (and could be adopted by other countries as well); however, the inclusion of a specific reference in the general act seems to indicate a policy preference towards this possibility.

Thus, the sensitivities implicitly recognised by the gold plating strategies seem to relate largely to defining the suitable scope of use of eAuctions and to communication/transparency requirements.

With respect to the former, there is a larger focus on supply contracts than on services/works contracts, which is undoubtedly a result of the greater difficulty of defining many services/works contracts in terms of specific and well defined criteria that can be automatically evaluated and ranked. However, at least with respect to regulations, there appears to be no consensus on whether eAuctions are more suitable for larger or smaller procurement contracts, given the seemingly contrary positions taken in France and Poland.

With respect to the latter, some attention appears to have been directed notably towards the communication during the eAuctions, and specifically which information should be provided with

respect to the winning bid. While communication of relative rankings (as foreseen in the Directives) has been retained as mandatory in all countries except France (where rankings are one of two permitted options, the other being the result of the leading bid), communication of other aspects and most notably the price of the leading bid is not a standard practice, except in Austria, where this required in procurements based on lowest price only.

7.4.4.2 Uptake and impact in practice

Measuring the usage and impact of eAuctions in practice is challenging, since reliable statistics are rare. None the less, based on collected information (including notably the country profiles collected in the course of this study, the following overview can be provided:

No (significant) use reported	Infrequent use / trial use / regional use	Systematic/frequent use
Belgium Bulgaria Estonia Finland Germany Greece Latvia Lithuania Luxembourg Malta The Netherlands Portugal Romania Slovakia Slovenia Spain Sweden Croatia Iceland Liechtenstein Turkey	Austria Cyprus Czech Republic Hungary	Denmark France Ireland Italy Poland UK Norway
Total: 21 countries (including 17 MS)	**Total: 4 countries (including 4 MS)**	**Total: 7 countries (including 6 MS)**

National uptake of eAuctions

Compared to the 2004 Impact Assessment, there is clear progress, as the number of countries using eAuctions in a systematic/frequent way has risen from 2 to 7, with 4 more using them infrequently or regionally. Furthermore, for the non-users (who still constitute a sizable majority of 21/32 countries or roughly two thirds), it should be noted that eAuction systems or modules were reported to be under development in Belgium, Estonia, Finland, The Netherlands, Portugal, and Turkey; thus, eAuctions' uptake is likely to increase further in the future.

Among the countries that do use eAuctions, a number of interesting use cases can be identified, along with some data on good practices and cost impacts:

As noted above, Denmark and Italy already reported using eAuctions in 2004. This is still the case:

- in Denmark, the eProcurement platform known as DOIP (*Den Offentlige Indkøbsportal* – www.doip.dk, developed in collaboration with private sector parties) includes support for eAuctions. eAuctions are only open to economic operators who have concluded a framework agreement with DOIP. This is done as a protective measure, as this insures that no fictitious operator can lower the prices artificially.
- In Italy, a specific company (CONSIP) was established with the aim to act as IT consultant for the public administrations and support them in conducting procurement procedures. CONSIP develops and operates electronic public procurement solutions. The volume of Italian eProcurement transactions reached 3,22 billion EUR in 2008, corresponding to 2,5% of the total public spending. Half of this is transacted on the National eProcurement Platform "Acquisti in Rete" which is mandatory for central administrations. Growth rates are very high (+233% for the national platform from 2007). This platform offers all eProcurement services, including eAuctions.

France has implemented regulations supporting the use of eAuctions as early as 2001, and eAuctions are also supported and used in practice, including via the platform *Place de marché interministérielle*. A 2007 study of market survey agency SOFRES concerning the use of eAuctions in France gives a rather negative overview on their usage in public and private eProcurement[220], especially from the perspective of economic operators, while contracting authorities have a more positive view. Even if the initial purpose of eAuctions was attractive, the study noted that their use was very limited. In addition, the French experience in the domain raises several questions regarding their usage and extension. Briefly summarised, the study noted the following:

- Generally, there is a positive perception of eAuctions and a willingness to further develop the concept among most of the practising public buyers. This opinion is however not universally shared, as other buyers are rather sceptical on the use of eAuctions or have completely abandoned their usage.
- The lack of promotion, advertisement and training regarding eAuctions was noted as a problem in practice.
- There are generally only few sellers able to partake in most tenders. If the initial price is too low, it can happen that only one seller answers the tender, which completely defeats the mechanism of eAuctions.
- Some suppliers are reluctant to expose their prices, which is linked to the requirement of eAuctions being transparent.
- From the economic operators' perspective, they feel they are forced to adapt to the procedures initiated by the buyers, but they are quite massively opposed to the use of eAuctions. They consider that the cost savings on their side are relatively marginal or inexistent and plan to reduce or eliminate their participation in eAuctions. They would like to revert to a steady relation with their customer based on a partnership, being able to put forward their own advantages instead of reducing their services to the single dimension of price.
- There is a lack of consensus on the criteria that should be considered when deciding whether to use eAuctions or not.
- There is a close link between price and quality. Being forced to drop their prices excessively, suppliers will compensate their loss of benefits by reducing the overall quality of their services or by cutting their prices too far. This may be even more harmful for SMEs.

Globally, the French report is relatively negative towards eAuctions. Especially from the perspective of economic operators, eAuctions are considered a detrimental procurement modality.

Ireland and the United Kingdom are also users of eAuctions, with key sites (respectively http://www.etenders.gov.ie/ and http://www.buyingsolutions.gov.uk) supporting eAuctions and providing eAuctions user guides on their site, to facilitate their use in practice.

- The UK guide focuses on what eAuctions are, how they work, when to use, how it's being organised, information on the legal context, some further links and a glossary of specific terms. The UK portal even provides an eAuction Decision Tool[221] that helps contracting authorities in evaluating whether an eAuction is suitable for an intended procurement. The tool takes the form of a macro-enabled Microsoft Excel file where the user answers relatively

[220] See http://marchespublics.weka.fr/lettre-weka-marches-publics/dossier-dossier/la_dematerialisation_des_marches_publics__perception_et_perspectives-436

[221] See http://www.ogc.gov.uk/tools___services_eauction_decision_tools.asp

simple questions about the procurement and receives a final recommendation about the suitability of eAuctions for this particular procurement. The tool is a part of a recently launched centre for eAuctions, to provide assistance and advice to contracting authorities who wish to use eAuctions which is certainly a good practice. In addition, the OGC notes that cost savings through the use of eAuctions are not uncommonly in the range of 20-25%, especially "when used with requirements that have clearly defined specifications and where there is a vibrant market" [222].

- The Irish guide mainly focuses on the description of the interface, and is less detailed. This is because the Irish eTenders website does not directly support the running of eAuctions (although developing this functionality is on the agenda). Currently, eAuctions can take place in Ireland through facilitation by private service providers. A list of known service providers is made available on the eTenders site for this purpose.

The decentralised approach seen in Ireland is also taken up to a lesser extent in other countries. In Poland, the Public Procurement Office (PPO) runs the Electronic Auctions Platform which is a non-mandatory eProcurement tool prepared for conducting both electronic biddings (https://licytacje.uzp.gov.pl) and electronic auctions (https://aukcje.uzp.gov.pl); but there are also a number of private sector service suppliers who offer eAuctions systems for use by contracting authorities. Case studies from one such service supplier report savings of 20-32%; however, the data refers to a limited number of auctions and may carry a certain selection bias.

In Cyprus, the possibility of using eAuctions in practice was introduced via the CyePS portal site (http://www.eprocurement.gov.cy). Recognised as a Good Practice in the framework of the 4th European eGovernment Awards 2009, it provides advanced functionality for all procurement phases, and supports the use of eAuctions, used as an extension to the eAwarding module. Cost savings are expected to be at around 5% (in addition to transactional savings of 40-70%); however, so far no eAuctions have been organized through this platform yet.

7.4.4.3 TED statistical analysis

Finally, some degree of quantitative analysis is possible via the standard form 3 (the contract award notice, CAN), which requires contracting authorities to indicate whether the contract was awarded via an eAuction. Based on the years 2006, 2007 and 2008, 1707 CANs have been taken into account (350 in 2006, 570 in 2007 and 787 in 2008). An interesting option for eAuctions is the ability to calculate approximate cost savings, based on comparing the estimated value of the contract when announced by the contracting authority to the actual value of the awarded contract as indicated in the CAN. The result is not strictly speaking a cost saving (in the sense of a lower price being obtained because of the use of eAuctions), as it can also simply be an indication of the contracting authority's overestimation of a contract's value, or even of the fact that the estimated budget estimated by the contracting authority will typically be higher than the authority's real expectation of the contract's ultimate outcome.

In more practical terms: if a contracting authority expects to pay e.g. 1.000 EUR for a specific good or service, it will likely announce an estimated budget equal to or higher than 1.000 EUR; otherwise, the logically expected outcome is not to receive an offer. Thus, an inherent flaw in this methodology for calculating cost savings must be recognised in advance: if a contracting authority announces a estimated budget for an eAuction of 1.100 EUR and the result is a winning bid of 1.000 EUR, then the

[222] See http://www.ogc.gov.uk/tools___services_eauction_decision_tools_4799.asp

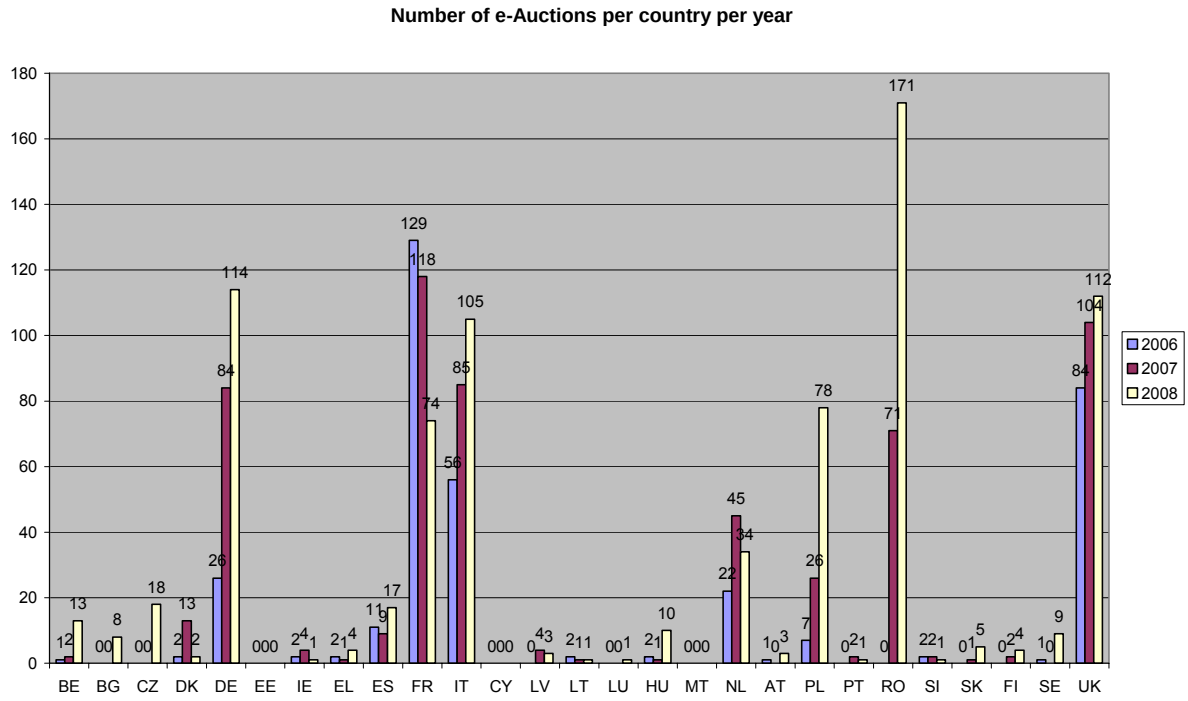
outcome is not necessarily a savings of 100 EUR. The 100 EUR difference can also be explained by a lack of market awareness of the contracting authority (i.e. the authority does not know that the market price is really 1.000 EUR rather than 1.100 EUR), or by the authority's need to have the contract filled urgently (i.e. the contracting authority knows that the market price is 1.000 EUR, but allows for a higher budget estimate to ensure that offers will be submitted). There is no way to distinguish between these two alternative explanations and an actual cost saving scenario.

However, given that eAuctions can by definition only be used in contracts where the contracting authority can define exact judging criteria which allow bids to be ranked using automatic evaluation methods, it can be reasonably assumed that contracts under an eAuction will be predominantly used in cases where the authority is sufficiently familiar with the market. This increases the likelihood of discrepancies between the estimated value and the final outcome being a cost saving.

Looking at the aforementioned 1.707 CANs, they represent a total of 5.919 lots (960 in 2006, 1970 in 2007 and 2988 in 2008), of which 1.566 have been used in the calculation of savings (56 in 2006, 418 in 2007 and 1092 in 2008). The CANs for which either the estimated values and/or final values were missing, and those for which the result of the savings calculation was bigger than 50% or lower than -50% have been excluded as they can reasonably be seen as 'abnormal'. In addition, the financial services sector has been excluded as a whole, as it appears that the CANs are not filled in properly. For instance for loans, authorities only mention the interest rates as final values of the contract instead of the full final price at which the contract has been awarded. The purchase of electricity has also been excluded as a whole, as authorities often publish as final value of contracts the price per units of energy (kWh) instead of the price for a total volume of energy.

It was observed that the notification rules for eAuctions are not always followed as established by the Directives. In most cases, the contracting authorities did not mention as required in the CN that they would use eAuctions, but only stated that an eAuction has been used in the CAN. One can reasonably expect that the same situation might be seen the other way round (i.e. that some CN mention the future use of an eAuction, but the CAN would not confirm that).

The table below indicates the number of reported eAuctions per Member State:



Graphical overview of the evolution of reported eAuction use at the national level between 2006-2008

The average number of CANs indicating the use of eAuctions published by contracting authorities in a given Member State is 21. Based on this average number, four groups of countries can be identified:

- The "big five" (Germany, France, the United Kingdom, Italy and Romania) which have published on average at least 75 CANs per year where the use of eAuctions is mentioned.
- The Member States above the EU average (the Netherlands, Poland)
- The Member States below the EU average (Austria, Belgium, Bulgaria, the Czech Republic, Denmark, Spain, Finland, Greece, Hungary, Ireland, Latvia, Lithuania, Luxembourg, Portugal, Sweden, Slovenia, Slovakia)
- The Member States which did not report the use of any eAuction at all over the three years (Cyprus, Estonia and Malta)

As with the DPS, it is possible to compare the table above to the legal transposition analysis to get a quick 'credibility test' of the numbers above. In the section describing the legal framework, the following transposition status was reported:

Transposed	Not transposed	Transposition planned	Unknown
Austria Bulgaria Cyprus Czech Republic Denmark Estonia France Greece Hungary Ireland Italy Latvia Lithuania Malta The Netherlands Poland Portugal Romania Slovakia Slovenia Spain United Kingdom Croatia Iceland Norway Turkey	Germany Liechtenstein	Belgium[223] Finland[224] Luxembourg[225] Sweden[226]	
Total: 26 countries (including 22 MS)	**Total: 2 countries (including 1 MS)**	**Total: 4 countries (including 4 MS)**	**Total: 0 countries (including 0 MS)**

National transposition of provisions in the Public Procurement Directives related to eAuctions

Again, there is a mismatch for some countries, with all Member States that have not (yet) transposed the eAuctions provisions into their national frameworks (BE, DE, FI, LU and SE) none the less being indicated as having used eAuctions[227]. It thus seems that eAuctions are misreported via the CANs to a notable extent.

With respect to cost savings (insofar as this term is accurate on the basis of the comments above), two figures have been calculated for each year: savings incurred after the use of an eAuction by notice

[223] Transposition is foreseen in the draft Act of 2006, but this Act hasn't entered into force yet in its entirety. Meanwhile, the provisions of the amended 1993 Act remain applicable, which do not foresee a legal framework for eAuctions.

[224] The main Act of 2007 contains the definition of eAuctions, but no substantive rules. These are to be determined in a specific regulation, which has not been issued yet.

[225] As in Finland, the main Act (of June 2009) contains the definition of eAuctions, but no substantive rules. These are to be determined in a specific regulation, which has not been issued yet (the recent regulation of August 2009 does not yet contain specific rules for eAuctions).

[226] No legal framework currently exists, but a legal proposal is currently under consideration by Parliament.

[227] For Germany, this is not necessarily incorrect, since ad hoc frameworks could be used, as explained in the legal section.

(i.e. per procurement procedure) and savings by lots (i.e. lots considered individually as if they were separate contracts). The savings are the difference between estimated price and final price for the contract awarded.

	2006	2007	2008
Savings by notice	10,53%	10,45%	10,59%
Savings by lots	10,58%	11,60%	10,59%

Calculated savings by notice and by lot related to eAuctions over 2006-2008

The results look remarkably consistent, both over the years and between categories, and are rather substantial at about 11%. However, as noted above, part of this difference may not be due to actual savings, but due to accidental or intentional misestimates of the contract value by the contracting authority.

With regard to use cases, it is possible to determine the types of contracts where eAuctions are most commonly used based on the CPV codes published in the CANs. This results in the following overview:

	2006		2007		2008	
Goods	198	55%	404	62,73%	619	68,70%
Works	48	13,33%	70	10,87%	103	11,43%
Services	114	31,67%	170	26,40%	179	19,87%
Total	360	100%	644	100%	901	100%

Calculated savings by use case related to eAuctions over 2006-2008

As expected, eAuctions are mostly used for supplies contracts, which is logical due to the need of being able to define exact judging criteria which allow bids to be ranked using automatic evaluation methods, which is more likely to be the case for goods than for works or services. In all categories, a continuous increase in the number of auctions used can be observed. This increase is highest for supplies, taking 2006 figures as the baseline (68%).

7.4.4.4 Conclusions

Globally, the overview above allows a few notable conclusions to be drawn:

- eAuction support and availability has grown since 2004, with several countries now using it more systematically. Furthermore, among non-using countries there is a significant interest in adopting eAuctions in their public procurement systems as well; thus, it is likely that growth will continue in the next few years.
- While exact statistical data is rare, the available information suggests that eAuctions can indeed realise significant cost savings, with figures of 10-20% being commonly quoted. In that

respect, eAuctions seem to be achieving their goal of increasing competition and cutting costs, which explains why they are relatively popular with contracting authorities and policy makers.

- However, no equivalent advantage seems to exist at the economic operator's side. Here, the use of eAuctions implies additional effort and shrinking profit margins, which reduces the appeal of public procurements (as witnessed by the SOFRES report above). In the long term, this can also become a negative element for eAuctions in general: as participation drops, prices may begin to rise again. Furthermore, the SOFRES report also noted that the automated assessment lead economic operators to focus strongly on the predefined relevant indicators (typically price), while neglecting other aspects (e.g. quality of products or services). Thus, eAuctions may have negative longer term side effects.
- Finally, as was shown by the UK example, it is crucial to determine precisely in which markets eAuctions make sense to avoid the negative side effects noted above. eAuctions can only prove their worth in markets which have sufficient competition, and which are dynamic and straightforward enough to use an automated assessment mechanism without harming quality.

7.4.5 Remaining gaps/barriers

eAuctions are still at a relatively early stage of maturity in most countries, and most countries are still struggling with the aforementioned issues, notably:

Possible gap / barrier	Applicable to this phase?	If yes, explain
Lack of available infrastructure	Yes	While the legal framework for eAuctions has been adopted relatively widely, this is not the case with the required infrastructure, which is not yet available in all countries.
Interoperability	No	No barriers specific to eAuctions
Legal uncertainty	No	/
Trustworthiness	No	/
Accessibility	No	/
Economic viability and use cases	Yes	eAuctions can only be productively used in procurements where it is possible to define clear assessment criteria that can serve as a basis of comparison between bids, and in markets where the auction is reasonably likely to result in multiple bids that can compete on equal terms. In a cross border context, this can become particularly challenging due to the risk of assessment criteria being misinterpreted.
Transparency	No	/
Market challenges	No	/
Distribution of benefits	Yes	Some experiences (see e.g. the French example above) show that benefits may be lacking from the side of the economic operators, who reject the system mainly because of the frustration generated by the reduction of their relation with the customer to the pricing dimension. There are thus benefits for the contracting authority, but less so for the economic operators, which may harm uptake in the longer term.

Gaps and barriers with respect to eAuctions

7.5 eCatalogues

7.5.1 Definition and scope

7.5.1.1 Conceptual description

eCatalogues take a somewhat different place in the eProcurement process than the aforementioned tools. While the tools described above are either different modalities of procuring (framework agreements, DPS, eAuctions) or necessary components of any eProcurement (eDocuments), eCatalogues are an optional instrument which can serve to unlock further economic and operational benefits in an eProcurement.

Simply stated, eCatalogues are electronic documents established by suppliers which describe products and prices in a structured manner. From a technical perspective, they can take virtually any form, ranging from general text documents (e.g. in PDF or MS Word) or spreadsheets that can be consulted by any human reader, to highly standardised XML formats which can also be automatically processed in a more systematic and useful manner in certain eProcurement systems.

7.5.1.2 Provisions within the Public Procurement Directives

Given this broad definition, eCatalogues can potentially play a supporting role in any eProcurement. However (and more importantly), according to the EU public procurement Directives (recital 12 of Directive 2004/18/EC and recital 20 of Directive 2004/17/EC), they may constitute a tender in their own right, specifically where competition has been reopened under a framework agreement or where a DPS is being used. In these cases, the eCatalogues are either transmitted to or uploaded on the contracting authority's website, or made available to the contracting authority on the suppliers' website. According to the Directives, techniques such as eCatalogues should help to increase competition and streamline public procurement and purchasing, especially in terms of time and money-saving (see below for further comments about this issue). In order to achieve these goals, their use by the contracting authorities of the Member States shall comply with the rules set forth in the Directives and to three basic principles, i.e.:

- Principle of equal treatment;
- Principle of non-discrimination;
- Principle of transparency.

In other words, in order to ensure that eCatalogues can be accepted as valid tenders, both contracting authorities and economic operators must comply with the general and specific legal and functional requirements of the Directives, which reflect the abovementioned three principles. However, whilst the Directives state that tenders submitted electronically may take the form of an electronic catalogue, they do not further define the notion of an eCatalogue itself. In other words, the Directives do not define the concept or requirements for eCatalogues, but merely specify where and why they should be particularly useful to Member States.

An attempt to provide a definition and a better description of eCatalogues has been done by a 2007 Study commissioned by the European Commission on "Electronic Catalogues in Electronic Public Procurement"[228]. Starting from the basic principle that "eCatalogues constitute electronic documents which may form tenders", the Study identified two possible ways to interpret and use electronic catalogues:

- eCatalogues as electronic documents that are created by economic operators and can be used in reply to a given call for competition with a description of the offered products and prices – this descriptions is based on the paradigm that eCatalogues are primarily tools for submitting tenders for calls for competition;

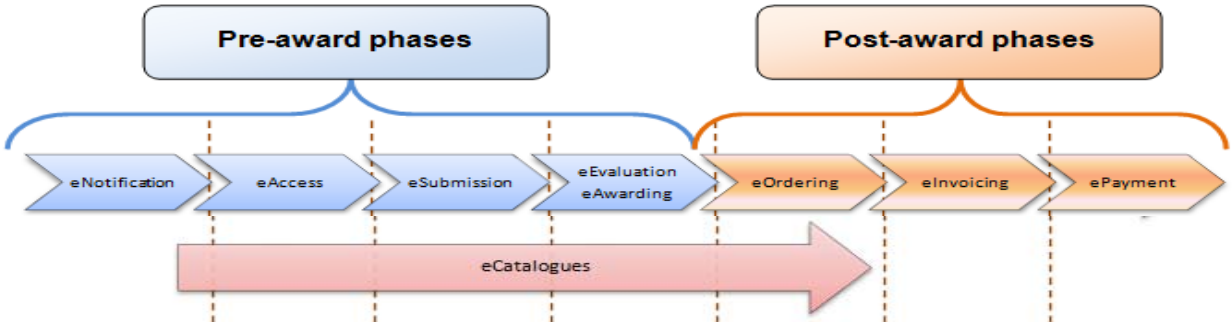
- eCatalogues as "computer systems, capable of storing products and prices of suppliers, based on which public entities can place orders", provided the respect of the principles stated in the EU Directives.

The differences between the two concepts are significant: while the former considers an eCatalogue as document to become a tender or part of a tender, the latter defines it as an ICT system of a contracting authority (e.g. a supply management system in which available goods are continuously registered) that allows economic operators/suppliers to submit eCatalogue prospectuses in the framework of the context of a call for competition.

A definition of eCatalogue has been attempted also in the framework of the project PEPPOL (see below for further information about the project), that analysed this issue in its report on "Functional, technical, legal and organisational specifications for the development of Building Blocks Software enabling cross border use of eCatalogues"[229]. The basic definition of electronic catalogue proposed here is "the electronic representation of a Catalogue document, and the Catalogue is an aggregate of descriptions of items". A more comprehensive definition of an eCatalogue is provided further on: "the electronic document, in which aggregate descriptions of items are included, defined according to CEN/BII standard document called eCatalogue for the format, and including standardised identification of items and descriptions of their attributes". This definition clearly refers to the work performed so far in the field of standardisation, and therefore emphasizes the importance of using standardised formats to ensure that eCatalogues can be systematically used. This issue will be considered in greater detail below.

[228] See the "Electronic Catalogues in Electronic Public Procurement" study from September 2007 available online at http://ec.europa.eu/internal_market/publicprocurement/eProcurement_en.htm

[229] Available at http://www.peppol.eu/work_in_progress/wp3%20-%20eCatalogue/results/functional-technical-legal-and-organisational-specifications-for-the-development-of-building-blocks-software-enabling-cross-border-use-of-ecatalogues/view; p. 29



eCatalogues in an eProcurement process

Electronic catalogues have the particular feature of being used in both the pre-award and post-award phases of eProcurement, as indicated in the graphic above: if their use is permitted, this is typically already indicated in the tender announcement (eNotification), with details on permitted standards indicated in the tender documentation (eAccess). Thereafter, use of the eCatalogue in the eSubmission phase can be done in several ways, including by simply sending an eCatalogue document to the contracting authority or by making it available to the contracting authority (e.g. via the tenderer's website or by allowing access to a more sophisticated ERM (Electronic Resource Management) system. The eCatalogue can then be evaluated manually or automatically (eEvaluation), after which contracts can be awarded (eAwarding) or orders can be placed (eOrdering). In practice, eCatalogues traditionally are mainly useful in the ordering phase, within the context of a framework agreement or DPS, as pointed out, *inter alia*, by the 2004 Impact Assessment and the Directives themselves. Given the fact that processing orders by paper means (letter and fax) is slow and error prone (and therefore time and resource intensive), and that eProcurement systems may manage the ordering process more effectively, eCatalogues can help streamline this process.

7.5.2 Main opportunities and challenges of using eProcurement for this tool

7.5.2.1 eProcurement opportunities

In general terms, as noted above, eCatalogues are intended to streamline public procurement processes, mainly the eSubmission - eEvaluation/eAwarding – eOrdering phases, particularly in the following ways:

- With respect to eSubmission: the systematic use of eCatalogues means that information on products or services can be presented more homogeneously. This reduces preparation time, particularly since an eCatalogue can be used multiple times (i.e. an entirely new offer does not need to be developed; it is sufficient to update the relevant parts of the eCatalogue. This will facilitate the participation of more economic operators (especially small and medium-sized enterprises) in the public procurement process. This will increase the competition in the market of public procurement, and reduce prices or improve the quality of goods or services.

- With respect to eEvaluation/eAwarding, the use of common eCatalogue formats means that tenders can be evaluated automatically (if the eCatalogue formats are machine processable), or at a minimum that all received eCatalogues are easily comparable. This will improve the efficiency of the evaluation and awarding process, and will reduce disputes between tenderers. Both of these effects will result in cost savings.

- Finally, the use of eCatalogues is a precondition towards optimising eOrdering. If eCatalogues are used systematically, contracting authorities will have a clear way of assessing which goods and services are available and under which conditions, and procurements can be organised with a minimum of effort, both on the side of the contracting authority and of the tenderer.

It is clear that the opportunities linked to the adoption of eCatalogues by purchasing authorities and/or central purchasing bodies can be substantial, although some major challenges must be also be addressed.

7.5.2.2 eProcurement challenges

The main challenge for the productive use of eCatalogues is to develop and support interoperable eCatalogue formats, which should ideally be common to public procurements across the EU, so that any economic operator can utilise the same eCatalogue information towards any contracting authority. In the absence of such common formats, the benefit of eCatalogues largely evaporates, as economic operators would still need to create new eCatalogues for each procurement they participate in, or contracting authorities would need to be able to process a multitude of eCatalogue formats. Thus, significant standardisation work is needed, notably in the following areas:

- A common eCatalogue standard at the EU level is needed, covering both the format and content of the catalogue; multilingualism of this standardisation work is also important to ensure cross border usability (especially for SMEs, to whom translations may pose a larger barrier);

- To permit their use, eCatalogues may need to be signed in the same way as any other type of tender. This means that interoperable signatures are needed. This will be examined elsewhere in the relevant section of this report.

Other challenges relate more to operational aspects:

- Economic operators will need to commit to maintenance and updating of their eCatalogues, which will likely require changes in their internal organisations and training. Similarly, at the contracting authorities' side, a greater familiarity with this tool will also be needed.

- There may be a lack of suitable commercial off-the-shelf eMarketplace software with intuitive user interfaces;

- Both economic operators and contracting authorities may need to overcome institutional inertia (i.e. an unwillingness to explore new options in favour of maintaining old habits) to build up experience and confidence. Fear of costs and efforts to create and maintain eCatalogues may lead to a "wait and see" position;

- Best practices need to be identified and disseminated, again both towards economic operators and to contracting authorities.

Standardisation of data models and exchange formats are necessary to ensure the interoperability of data and systems. However, the adoption of standards must also guarantee the principles of transparency, equal treatment and non discrimination and deal with habits, needs and cultural differences between countries. The 2004 Impact Assessment pointed out in this regard that, taking into account the specific requirements set forth by the Directives, it may be difficult to establish which requirements should be used in relation to the tenderers' eCatalogues, and in what circumstances the tenderer can use its own electronic catalogue. Furthermore, if eCatalogues are used differently in the Member States, this might cause problems also for the contracting authorities when they have to assess whether the tenders met the required electronic standards. This would likely have a negative effect on the use of eCatalogues, and thus the expected benefits linked to the adoption of these tools may be limited or may not happen at all.

7.5.3 The 2004 status and vision of the Action Plan

7.5.3.1 2004 status

The 2004 Impact Assessment noted that public authorities in 14 out of 25 Member States had at least some experiences with electronic catalogues, although to a different extent, ranging from basic experiments and pilot projects up to a more mature experience. To be more precise, the situation in 2004 can be summarised as follows:

- Three countries were conducting pilot schemes: Austria, Ireland and Portugal;

- Eleven countries were using eCatalogues in their procurement practices: Belgium (adopted by the central federal purchasing body), Denmark, Finland, France (adopted by the Ministry of Defence), Germany (used by the Procurement Office of the Federal Ministry of the Interior), Hungary (used to some extent to gather information), Italy (where the government central purchasing body used – and still uses – quality e-purchasing models such as eCatalogues), Luxembourg (used by the central purchasing agency "*Service central des imprimés de l'Etat*"), Spain (used by both central and regional public authorities), Sweden (used for purchases of goods) and UK (used for ordering goods and services);

- The other Member States did not have any experience with eCatalogues: Cyprus, Czech Republic, Estonia, Greece, Latvia (where eCatalogues where used only by private companies), Lithuania, Malta, Netherlands, Slovakia, Slovenia and Poland.

Only four countries however (Denmark, Germany, Italy and United Kingdom) described their experiences with eCatalogues as being 'in depth'. In the sections below, we will assess to what extent this situation has changed in the last six years.

7.5.3.2 Vision of the Action Plan and indicators for success

The Action Plan identified eCatalogues as "a major issue" in the field of eProcurement. In particular, the Action Plan stresses the importance of eCatalogues for ensuring the involvement in the procurement process of SMEs, since "current applications make it possible for enterprises to present their products and services to contracting entities at reasonable cost, time and effort."

In other words, eCatalogues are perceived as an enabler for SMEs since they would allow them to participate in public procurements to a greater extent than they traditionally do. The reasoning of the Commission is based on the assumption that the participation of more operators in the procurement process (notably of more SMEs) shall pave the way to enhanced competition and, as a consequence, to the possibility to reduce the prices and increase the overall efficiency and quality of the system.

However, the Action Plan also stressed the existence of several barriers to the use of eCatalogues, including notably the lack of uniform specifications and standards. It proposed a specific measure to address this challenge:

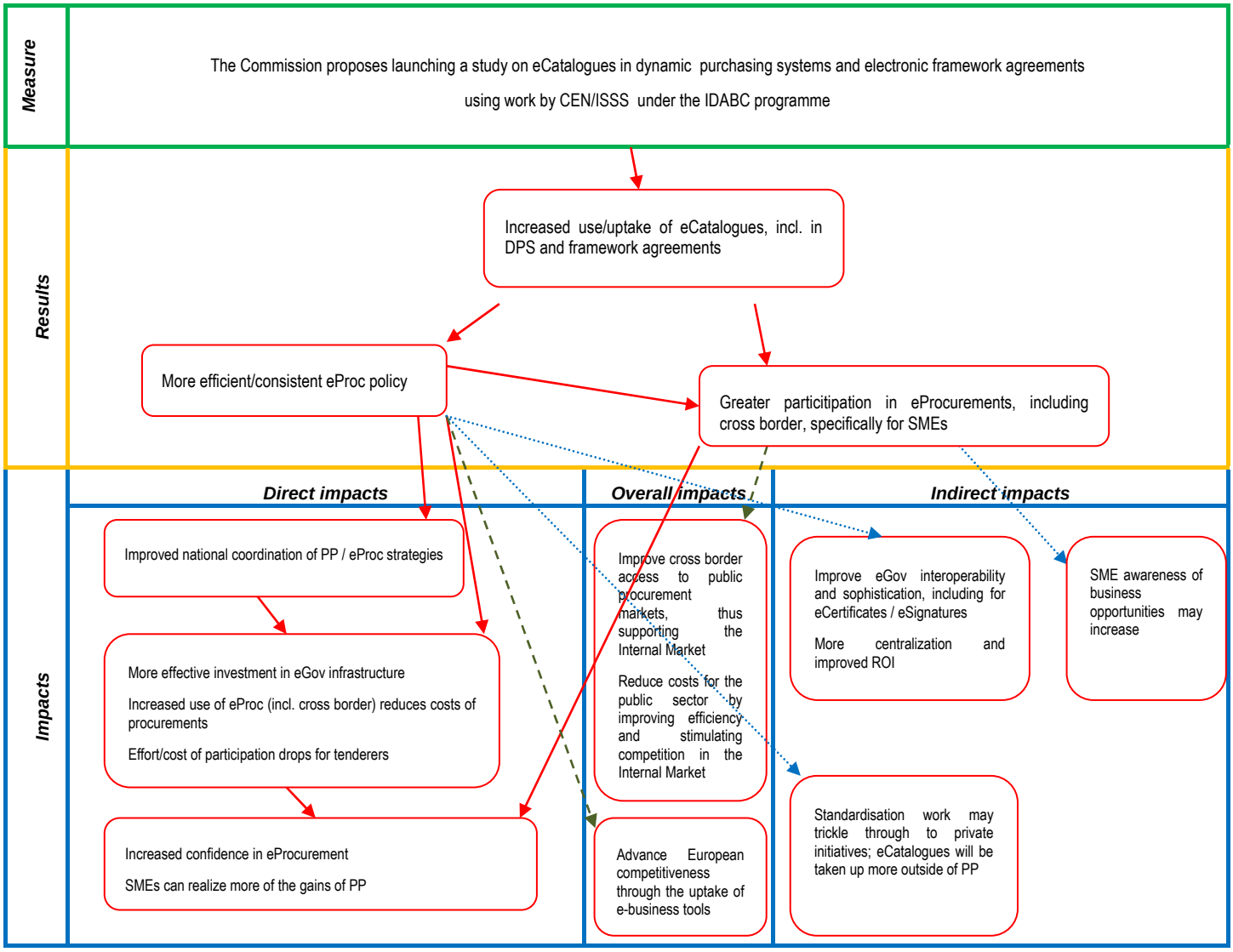
Measure	Targeted party	Nature of the measure
Commission proposes launching a study on eCatalogues using work by CEN/ISSS	Commission	Completing the framework

Measures in the Action Plan related to eCatalogues

The Study was intended to chart and build on standardisation work that was already underway within the framework of standardisation activities within CEN/ISSS (specifically the Workshop eCAT 'Multilingual eCataloguing and eClassification in eBusiness'[230]). However, the goal was not to conduct standardisation work as such, as will be discussed below, but rather to study the use of eCatalogues in DPS and framework agreements.

The expected impacts of this approach were described in the intervention logic description above:

[230] See http://www.cen.eu/CEN/sectors/sectors/isss/activity/Pages/wsecat_epps.aspx



Thus, the main indicator for success would be an increased uptake of eCatalogues in practice, with secondary indicators being the progression of eCatalogue standardisation work, and the impact on SME participation. In the sections below, we will explore to what extent this has taken place.

7.5.4 Current status and evolution

7.5.4.1 Actions undertaken

The measure called for a study on eCatalogues in the framework of DPS and framework agreements, which was indeed conducted in 2007 through the aforementioned study ("Electronic Catalogues in Electronic Public Procurement"), analysing the state of play, standardisation activities and the legal and functional requirements for eCatalogues to be used for tender submission. Apart from the Executive Summary, the study consists of three volumes: (I) State of Play; (II) Standardisation Initiatives; (III) Functional Requirements Report.

The starting point of the Study is the need to reach an agreement on minimal requirements and standards in order "to remedy the risk of ICT applications on the market not meeting the requirements of the public sector and of barriers to the Internal Market, and increase both public buyers' and businesses' trust in the new electronic procedures, systems and tools."

The main conclusions reached in the Study can be summarised as follows:

- eCatalogues (interpreted as tools suitable to be adopted as valid offers in a public procurement scenario) should be used in, and be interoperable with, those adopted in standards e-commerce environments; i.e. eCatalogues should be considered as a horizontal topic, rather than an eProcurement specific one. This philosophy is also evident in the CEN/ISSS standardisation work mentioned above, as the Workshop eCAT looks at 'Multilingual eCataloguing and eClassification in eBusiness', rather than 'in eProcurement'.

- the current implementations of eCatalogues in EU Member States tend to overlook the use of electronic catalogues as e-documents/tenders. Rather, they focus on the implementation of ICT eProcurement systems aimed to store products/prices with the aim to enable eOrdering and eInvoicing. This runs contrary to the goals of the Directives, which emphatically mentioned the former as a key approach for progress. This issue will be explained further in the sections below.

- the automated processing of eCatalogues is possible only when eCatalogues are created and exchanged in a standardised manner, i.e. when they are interoperable and re-usable for several purposes;

- the use of eCatalogue standards would allow eCatalogue prospectuses to be created, exchanged and managed in a standardised manner, presenting opportunities to seize efficiency gains by automated (or semi-automated) processing;

- standardisation efforts with respect to eCatalogues relate to two main areas:

    - standardisation of processes/messages, i.e. the format of eCatalogues. The Study indicates that there were two particularly promising standards which could form a suitable solution for the interoperable exchange of eCatalogue data. These standards are UBL 2.0 and c-Catalogue, which define processes and messages for the exchange of business documents based on eCatalogues, making use of XML. UBL is an official OASIS standard, while c-Catalogue is a standard initially defined by CEN/ISSS and currently under further development by UN/CEFACT. These standards are however converging; a process which is anticipated to offer one, unique standard for conducting business electronically through eCatalogues. Furthermore, both standards (UBL 2.0 and c-Catalogue) are primarily focused on post-awarding phases of eProcurement (i.e.

eOrdering and eInvoicing), although their specifications can be applied also to pre-awarding phases (preferably with extensions/customisations);

- standardisation of content, i.e. (i) content related to product/service description, and (ii) content covering information aspects included in a prospectus and not related to product/service description. According to the Study the best approach for standardising content of the latter kind is the use of product description and classification schemes. However, there are interoperability problems due to the existence of many product descriptions and classification schemes (aimed to offer the ability to accurately categorise and describe products and services contained in eCatalogues using standardised product hierarchies and sets of attributes), such as CPV (the European standard embraced and mandated by the Directives with respect to eNotices), UNSPSC, eCl@ss, GPC, NCS and eOTD.

Since the 2007 Study that the Action Plan required as a measure, several other relevant initiatives have been undertaken. The ongoing PEPPOL pilot project (Pan European Public Procurement OnLine – www.peppol.eu) is of course a key example of this, as it also recognised the importance of eCatalogues by defining a separate work package[231] dedicated to this topic.

The efforts undertaken in this work package try to provide a pilot response to most of the recommendations from the 2007 study, while however taking a different approach. The 2007 study proposed a strategy in two phases where the buyer-defined eCatalogues would first be replaced by supplier-defined ones, and then the suppliers would be required to structure their tenders based on widespread industry standards. The strategy followed by PEPPOL is to concentrate on the second phase by investigating what is necessary to structure catalogues according to widespread industry standards, irrespective of whether they are going to be used for tender submission or in the post-award phase. This approach taken by PEPPOL addresses the problem that there is relatively little incentive for buyers (contracting authorities) to adapt their systems to accommodate any practices adopted by the bidders (economic operators).

In particular, PEPPOL is currently analysing (i) how it could be possible for any company in the European Union to easily, securely and seamlessly create, validate and send an electronic catalogue as part of a procurement tender issued by any European contracting authority and (ii) how any company that has been awarded a tender by any European contracting authority can easily, securely and seamlessly create, validate and send an electronic catalogue of the offered goods or services, by:

- Investigating, analysing and assessing the existing studies and initiatives as well as legal frameworks at European and national levels which may have any relevance for eCatalogues;

- Identifying the typical issues linked to the use of eCatalogues especially in the framework of cross border public eProcurement;

- Identifying the most suitable solutions and providing tools or building blocks to facilitate the interoperability and the exchange of structured information between the IT systems of the actors involved.

[231] See http://www.peppol.eu/Work_packages/wp3%20-%20eCatalogue

PEPPOL has also identified a set of actions that need to be undertaken in order to encourage a larger use of eCatalogue in eProcurement. Specifically, contracting authorities need a tool to create eCatalogue templates based on standard formats and standard descriptions of the catalogue items, to create the business rules out of the template and to manage the receipt of eCatalogues. On the other side, economic operators need a tool supporting the creation of eCatalogues according to a given template and an easy way to submit them. In order to take into account the current situation, mainly the diversity of existing standards, tools for converting formats, matching contents and validating quality of contents are also needed. All of these actions are currently being examined in the PEPPOL project.

7.5.4.2 Evolution at the national level

Overview of the evolution at the national level

The section above showed that in 2004, 14 out of (then) 25 Member States (56%) had some eCatalogue experiences, with however only 4 of those (Denmark, Germany, Italy and United Kingdom) claiming any in-depth experience.

On the basis of the country profiles collected in the course of this evaluation, this seems to have evaluated in a positive sense: 19 countries have been identified as having eCatalogue systems implemented and used, including 18 of the 27 Member States (67%). As in 2004 however, actual uptake obviously differs substantially. In addition, very often usage of electronic catalogues is restricted to the post-awarding phase, to ensure that eOrdering through eCatalogues is supported in the national eProcurement platform. More specifically, we can say that:

- Eighteen Member States use eCatalogues in one or more of their eProcurement systems: Austria, Belgium, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Hungary, Ireland, Lithuania, Italy, Poland, Portugal, Romania, Spain, Sweden, and the United Kingdom. Thus, nine EU Member States do not use eCatalogues: Bulgaria, Estonia, Greece, Latvia, Luxembourg, Malta, The Netherlands, Slovakia and Slovenia;

- One EEA country uses eCatalogues in its eProcurement system and eCatalogues are supported in national platform(s), namely Norway.

A detailed overview per country on the availability and usage of eCatalogues can be found in Annex E to this report.

Looking for good practice cases, a few countries stand out as extensive or systematic users, particularly:

- ***Austria***: eOrdering through eCatalogues is supported in the platform of the Federal Procurement Agency (BBG) e-Shop (i.e. the electronic ordering system of BBG; see http://www.bbg.gv.at/kunden/elektronisch-einkaufen/e-shop/). BBG sets up eCatalogues as a part of its framework agreements, meaning that they are used primarily in the post awarding phase. eProcurement initiatives in Austria strongly promote the role of SMEs as stakeholders, including through the promotion of eCatalogues. The platform e-Shop provides a platform to create and approve eCatalogues and supports SMEs, who are often not aware of these technologies.

- ***Cyprus***: eOrdering through eCatalogues is supported in the platform of the national eProcurement system, e-PS (see https://www.eprocurement.gov.cy/ceproc/home.do). From

the technical point of view, eCatalogue in Cyprus is an autonomous eProcurement application that offers via internet to public officers and companies a multilingual platform. It is based on open source building blocks and is composed of two components of an electronic purchase process: the electronic catalogue and electronic ordering. The platform offers possibilities to manage some contractual activities relating to electronic catalogues, such as the electronic order. It offers contracting authorities a collaborative eProcurement environment for consulting catalogues and placing purchase orders. Moreover there is the possibility to follow up the order status and to create a page view of acceptance. One crucial best practice is the tutorials made available via the site, including flash video presentations on preparing and uploading eCatalogues (see https://www.eprocurement.gov.cy/ceproc/definition/walkthroughs.index.do). Thus, awareness and knowledge dissemination take a crucial position.

- ***Denmark***: eOrdering through eCatalogues is supported in the procurement platforms of SKI (the National Procurement Company) and DOIP (Public Procurement Portal). The importance of eCatalogues is pivotal in the Danish procurement panorama: in general terms SKI negotiates framework agreements with suppliers, and the contracts allow eCatalogues to be used in the post awarding phase. Furthermore, SKI developed an eCatalogue viewer known as Netkatalog (www.netkatalog.dk). An important element of the services of SKI is the transformation of the result of the procurement process into an electronic catalogue of goods. The eCatalogues are primarily XML files that make the framework contracts accessible on different eProcurement platforms used by public purchasers. After being catalogued at SKI the information hits the electronic marketplace. The eCatalogues can be viewed by SKI customers at www.netkatalog.dk (username and password are needed). In other words, www.netkatalog.dk can be considered a shopping centre for catalogues (but not for actual goods or services).

- ***Germany***: several platforms in Germany support the use of eCatalogues, including notably eVergabe and KdB. The Federal Government's eProcurement platforms (www.kdb.bund.de and www.evergabe-online.de) enable authorities to publish and notify call for tenders electronically, and bidders to submit offers completely and bindingly over the Internet. The e-Vergabe platform should be considered as the main platform as it covers the pre-awarding phase. Kdb is the main platform on Federal level for the post awarding phase, which also comprises electronic catalogues enabling public bodies to procure goods and services electronically from a series of pre-concluded framework contracts and without the need for (more expensive) calls for tender. This special part of the programme was realised by implementing a Federal eGovernment Shop (Kaufhaus des Bundes - KdB).

- ***Italy***: eOrdering through eCatalogues is supported in the main national eProcurement platform '*Acquisti in rete*' (http://www.acquistinretepa.it/). Within the framework of this system suppliers are responsible for the creation of eCatalogues, based on predefined eCatalogue spreadsheet templates. eCatalogues take the form of MS Office Excel spreadsheets which are digitally signed. Tools are provided to suppliers to check the quality of the content. The upload platform will perform additional quality checks. Furthermore, eCatalogues are also available in the framework of several regional eProcurement systems such as CSI Piemonte in the region Piedmont (where eCatalogues are set up in two contexts, Electronic Framework contracts and CSI Electronic Market) and Intercent ER in the region Emilia-Romagna (where eCatalogues are set up in the same contexts as in Piedmont). Thus, eCatalogues are taken up to a significant extent in Italy.

- ***Lithuania***: eOrdering through eCatalogues is not supported in the national central public procurement information system platform, but a dedicated platform for eCatalogues exists (www.cpo.lt) as from 2007. This platform centralizes the administration of public procurements and helps to conduct public procurement in electronic format in full without a single paper document. Qualified signature certificates are used in these procedures. Thanks to this platform, state public institutions can buy office stationary, computer equipment, fuel, mobile

telecommunications and other products via eCatalogue. The sellers of these products who have signed a framework agreement with CPMA (Central Project Management Agency) are allowed to put their product specifications in the eCatalogue and the state public institutions can place their orders for products specified in eCatalogue online. The eCatalogue system is conceived to eliminate the need of complex public purchase procedures for commonly purchased products, decrease the time and cost needed to complete the purchase, cut prices and increase public procurement transparency.

- ***Portugal***: eOrdering through eCatalogues is supported in the main national eProcurement platform (ANCP, the national agency for public purchases; www.ancp.gov.pt). In particular, eCatalogues are used by ANCP to make goods and services that are object of a framework agreement available for "call-off" purposes (i.e. to enter into specific purchasing contracts under a framework agreement). Awarding entities are granted access to these catalogues so that they can prepare (e.g. to choose the required goods lots and services) the call for tenders of the call offs. The whole call-off procedure is then concluded in the electronic platform of ANCP.

- ***Spain***: eOrdering through eCatalogues is supported in the main national platform of public procurement (CONECTA, http://catalogopatrimonio.meh.es/). The use of electronic catalogues is widely spread at both national and regional level. As regards the platform adopted at national central level, from the technical point of view buyers access eCatalogues through CONECTA, through use of xml with possibility to attach doc (.pdf, MsOffice); the eCatalogues are generated by PROTEO application (web based, .net, J2EE, management workflow system, web service for external application integration, document storage). The content of the eCatalogues consists of company data, general attributes and specific technical features.

- ***Sweden***: eOrdering through eCatalogues is supported in various platforms for eProcurement and in general terms eCatalogues are used mainly for post-award processes. From the technical perspective, many agencies in Sweden use the UNSPSC product classification scheme. There is now a Swedish translation of the UNSPSC scheme, in line with the translations made in other Nordic countries.

- ***UK***: eOrdering through eCatalogues is supported in the platform of the public sector's national procurement portal of OGC Buying Solutions see http://www.buyingsolutions.gov.uk/products/; eCatalogues in this platform are under the form of spreadsheets), and electronic catalogues are widely used in the framework of British public procurement.

With respect to volume, Denmark, Germany, Italy and United Kingdom still appear to be European leaders, as in 2004; however, other countries are investing more and more in this area. When considering the examples above, it is clear that most applications of eCatalogues still relate to the post-award phase, and notably involve the use of eCatalogues in the contexts of framework agreements, specifically framework agreements concluded with centralised purchasing bodies. Use in pre-award phases is substantially rarer, although several interesting use cases are emerging in this area as well (see notably the examples of Cyprus and Denmark).

Key standards supported at the national level

The following table provides an overview of the standards used by some of the countries having an eCatalogue system, to the extent that this information was available.

Country	*eCatalogues standards*
Belgium	Very similar to UBL 2.0 (create catalogue, update catalogue item specification, update catalogue pricing), deletion is not possible.
Denmark	The UNSPSC is the most widely adopted standard for the classification of catalogue products and services in Denmark. An official translation of the UNSPSC standard codes has been implemented. Denmark uses OIOUBL (subset of UBL 2.0 library) for the establishment of the business process for the description of Catalogue products and services (Items), as well as for the creation and management of a supplier catalogue.
Germany	German federal authorities use mainly the BMEcat catalogue-exchange standard and the eCl@ss Classification scheme.
Lithuania	Processes very similar to UN/CEFACT (new catalogue publication, update catalogue).
Norway	Suppliers currently submit their eCatalogues in the form of spreadsheet files. Same approach as UK and Sweden in the implementation of their business process model and messaging framework for eOrdering and eInvoicing, through the use of UBL 2.0.
Romania	Vaguely similar to UN/CEFACT (new catalogue publication, punch out).
Spain	GS1, CCI, and UBL are the alternative standards used in Spain for the implementation of eCatalogues. Spain has performed a gap analysis between the OASIS/UBL and UN/CEFACT/c-Catalogues initiatives.
Sweden	Swedish translation of the UNSPSC scheme.
UK	OGC Buying Solutions aims to make UBL the standard for all electronic business in the UK. Development of S-cat and G-Cat eCatalogue initiatives (only eOrdering from framework contracts).

Overview of standards supported at the national level

7.5.4.3 Standardisation efforts

Standardisation is one of most relevant pillars to ensure that eCatalogues may be widely used and can develop all their potential (as described above). Standardisation work is currently ongoing within the CEN ('*Comité Européen de Normalisation*') BII Workshop ('Information Systems and Business Interoperability Interfaces for public procurement'[232], as was already commented within the section on eOrdering above) and the Workshop on 'Multilingual eCataloguing and eClassification in eBusiness' (WS/eCAT[233]).

In past years (notably between 2004-2006), the WS/eCAT workshop has already produced a number of highly relevant deliverables, in the form of six CEN Workshop Agreements:

- CWA 15045:2004 - Multilingual catalogue strategies for eCommerce and eBusiness
- CWA 15294:2005 - ePDC project - Dictionary of Terminology for Product Classification and Description
- CWA 15295:2005 - ePDC project - Description of References and Data Models for Classification
- CWA 15556-1:2006 - Gen-ePDC project - Product Description and Classification - New Property Library
- CWA 15556-2:2006 - Gen-ePDC project - Product Description and Classification - Product Classes with sets of Properties.
- CWA 15556-3:2006 - Gen-ePDC project - Product Description and Classification - Results of development in harmonisation and product classification and in multilingual electronic catalogues and their respective data modeling.

This should provide a good basis for product classification efforts in the next few years, notably via two projects[234]:

- ePPS (electronic Public Procurement Server) deals with guidelines for the design, implementation and operation of a product property server. A pilot test case will be run in a specific set of industry sectors (heating, ventilation, air conditioning, sanitary-ware etc.) before being extended to other industries.

- CC3P (eCatalogue Classification in Public and Private Procurement) analyses the CPV (Common Procurement Vocabulary) and classification systems used in the private sector (notably UNSPSC, GPC and eCl@ss). The CC3P project will propose harmonisation, mapping methodologies, recommendation on their use in electronic catalogues and areas of improvement in the CPV, keeping into account the contributions of the other three ontologies[235].

Within the PEPPOL project (that cooperates with the abovementioned BII Workshop and the WS/eCAT Workshop), ongoing eCatalogue work will also support the use of CPV as a hub classification, in addition to other classification systems. In particular, PEPPOL bases its analysis on the assumption that the absence of a common eCatalogue standard is a critical impeding factor at the

[232] See http://www.cen.eu/CEN/Sectors/Sectors/ISSS/Activity/Pages/Ws_BII.aspx

[233] See http://www.cen.eu/CEN/sectors/sectors/isss/activity/Pages/wsecat_epps.aspx

[234] See http://www.cen.eu/cen/Sectors/Sectors/ISSS/Activity/Documents/WSeCATBPv17clean1.pdf

[235] See http://www.cen.eu/cen/Sectors/Sectors/ISSS/Activity/Documents/WSeCATCC3PToRsv4.pdf

European level, both with respect to eCatalogue formats and with respect to contents. These standards, in particular, should guarantee:

- o interoperability and integration to eProcurement systems of different countries;
- o vendor neutrality in catalogue formats.

As the CPV is already the mandatory basis for eNotifications in Europe, it is logical that efforts are largely focused on ensuring that it is also optimally usable for eCatalogues as well. However, in this area it currently faces competition from primarily the three different standards mentioned above (UNSPSC, GPC and eCl@ss), which impedes interoperability. Future alignment with other classification systems, and the extension of the CPV to a more detailed level, is thus seen as desirable to enhance its usability for eCatalogue systems.

Finally, some good practices can already be identified today in some European States:

- eCatalogue verification tool (Norway): in Norway, a tool is made available to suppliers that can automatically verify the correct formatting of eCatalogue prospectuses to be submitted. It also provides indicators on the content quality of prospectuses, for instance their search-ability, and relevance to the competition. This specialised tool enables suppliers to verify the quality of their prospectuses, both in terms of format and content, prior to their submission. This contributes to automating the verification process, improving supplier confidence.

- Re-utilisation of eCatalogues (Norway): suppliers should be able to re-use their eCatalogue prospectuses to submit tenders in multiple competitions originating from different contracting authorities. Even in the current environment, without the use of common standards, such a re-utilisation is possible. In Norway, an eCatalogue prospectus is built on two different files: the Product File and the Price File. The supplier sets up a universal Product File (including all relevant information about the offered product(s)) and multiple Price Files (referencing the Product File) where prices for specific competitions/authorities are included. This facilitates the effective management of eCatalogue prospectuses by suppliers and minimises their manual work.

- Restriction of access to supplier details (Latvia): buyers in the Latvian eCatalogue system can access products and prices of submitted prospectuses, but not supplier details. Such information (e.g. name, address, VAT number, etc.) is disclosed only after the placing of an order (i.e. first an order for a product is placed and then the buyer is made aware of the supplier of that product). This contributes to ensuring that orders are placed in a non-discriminatory way.

7.5.4.4 Conclusions

The main conclusions about the current situation in eCatalogue use can be summarised as follow:

- eCatalogue usage has increased since 2004, which is in line with the ambitions of the Action Plan. However, with respect to uptake, the same four Member States appear to be leading. None the less, interest is increasing in other countries as well, as seen in the more recent systems implemented in Cyprus (as commented above), but also in e.g. Belgium, Malta, Poland, and Romania, which were not yet active in this field in 2004.

- Most applications of eCatalogues still relate to the post-award phase, and notably involve the use of eCatalogues in the contexts of framework agreements, specifically framework

agreements concluded with centralised purchasing bodies. Use in pre-award phases is substantially rarer. This observation seems to be aligned with the work performed by standardisation bodies (OASIS, UN/CEFACT, CEN/ISSS) whose primary concern (UBL 1.0) was focused on the standardisation of processes and messages during the post-awarding phase (eOrdering and eInvoicing). The version 2.0 of UBL shows greater consideration for other actions like catalogue request, update and delete.

- Only in a few cases are there fully automated tools to support eCatalogue management processes. Management of eCatalogue contents and formats is generally done offline and is a manual process. When tools exist, they are mostly based on the manipulation of Excel spreadsheets and Excel spreadsheet templates. More advanced approaches are however beginning to emerge (as seen e.g. in Cyprus), which will hopefully lead to further professionalization.

- There is no widespread use of standards like UBL (Universal Business Language from OASIS) or UN/CEFACT XML Schemes. Some countries have partly implemented these standards (mainly UBL) or are using similar standards (e.g. OIOUBL). Sometimes, a standard is used for the catalogue creation and update and another standard is used for pricing and deletion.

7.5.4.5 Matching with the Action Plan

The Action Plan's ambitions with respect to eCatalogues were phrased in a relatively modest manner, calling only for the organisation of a study on the use of eCatalogues in DPS and framework agreements. None the less, the reticence to go further (e.g. by calling directly for more standardisation work) was understandable: as noted above, the standardisation issues are a horizontal matter, which should not be handled only in an eProcurement context. As the Commission was aware of ongoing CEN/ISSS standardisation work, recommending other measures would likely have been ineffective.

Looking at the evolution of eCatalogues since the adoption of the Action Plan, it is clear that the trends are all positive: standardisation work has progressed, and more Member States are taking an interest in using eCatalogues in eProcurement. However, the balance is not entirely positive. While standards may have progressed, issues still remain (notably the refining of the CPV and aligning it with competing ontologies), and they are not uniformly adopted at the national level. Furthermore, the use of eCatalogues is still largely oriented towards post-award phases, particularly in the context of framework agreements. This means that a part of the potential of eCatalogues (notably as a tendering instrument) is lost. Finally, actual uptake of eCatalogues does not appear to have evolved as substantially as might be expected, since it is still the same group of countries that has adopted eCatalogues to the same extent.

In the sections above, we noted that the main indicator for success would be an increased uptake of eCatalogues in practice, with secondary indicators being the progression of eCatalogue standardisation work, and the impact on SME participation. All of these show progress, but with clear gaps to be filled:

- eCatalogue uptake has increased, but not to the extent that might have been expected;
- eCatalogue standardisation has seen significant improvement, but issues remain and adoption is spotty;

- while a few countries have been able to promote eCatalogues as tools to promote the participation of SMEs (see notably the Italian example), the fact that eCatalogues are still mainly used in post-award phases means that cannot have a strong impact on overcoming the first barrier for SMEs, which is to come out of the pre-award phase as a winning bidder.

The current situation can be evaluated as showing significant progress compared to 2004, but with clear gaps still existing.

7.5.5 Remaining gaps/barriers

It is recognised that the adoption of eCatalogues can offer a major boost to the effective and efficient use of eProcurement systems. However, the widespread use of electronic catalogues in public procurement is not favoured by the current practices in the Member States, which result in the following overview of gaps and barriers:

Possible gap / barrier	Applicable to this phase?	If yes, explain
Lack of available infrastructure	Yes	While a few Member States have taken up eCatalogues, this is certainly not yet universally the case.
Interoperability	Yes	eCatalogues are generally based on national (implementations of) standards, making it impossible to reuse them across borders.
Legal uncertainty	No	/
Trustworthiness	No	/
Accessibility	Yes	Due to the use of differing (implementations of) standards in each country, economic operators will commonly need to adapt their practices when tendering in a different Member State.
Economic viability and use cases	Yes	The fact that such diversity in implementations of eCatalogues still exists also weakens their business case. E.g. one of the major benefits of eCatalogues should be the possibility of re-using them for multiple procurements. Cross-border re-use is however not possible in the absence of a common approach. In addition, current implementations in Member States tend to overlook the use of eCatalogues as quoted in the recitals to the Directives, noting that electronic catalogues may constitute tenders or parts of them, and rather focus on the implementation of ICT eProcurement systems capable of storing products and prices, to enable eOrdering and eInvoicing. All of this means that much of the investments in eCatalogues are not providing an optimal return.
Transparency	Yes	There is little information on the extent to which eCatalogues are being used.
Market challenges	No	/
Distribution of benefits	No	/

Gaps and barriers with respect to eCatalogues

7.6 eSignatures and eID

7.6.1 Definition and scope

7.6.1.1 Conceptual description

One of the crucial challenges in using electronic means in public procurements is ensuring the authenticity and integrity of the exchanged information. The question of authenticity is linked primarily to the source of the information: to what extent is it certain that specific information originates from a specific identified entity? E.g. can a submitted offer be linked back reliably to a specific economic operator, or can specific evidentiary documents be linked to the entity that issued them? The question of integrity on the other hand relates to the assurance that the information has not been changed in any way during the communications process, i.e. the information received is the same as the information sent.

The notions of electronic identity (eID) and electronic signatures (eSignatures) are thus instrumental to eProcurement. It should be noted however that the concept of electronic identity has not been formally defined or regulated at the European level. For the purposes of this analysis, eID can be generally understood as a subset of attributes in electronic form allowing the unique identification of a specific entity. In contrast, eSignatures are defined and regulated at the European level via the eSignatures Directive[236], which describes them as "data in electronic form which are attached to or logically associated with other electronic data and which serve as a method of authentication". Thus, eSignatures have the benefit of a clearer European policy and regulatory framework.

It is important to recognise that several tiers of electronic signatures exist. The basic concept of an electronic signature (as defined above) is very broad, and can apply to any type of data used as a method of authentication, including e.g. contact data added to an e-mail, a scanned image of a hand written signature, or a username/password based system. Obviously, the reliability of these electronic signatures can vary greatly, depending on the modalities of their use.

These basic types of signatures are sometimes also referred to as 'simple signatures', to distinguish them from the second tier of signatures defined in the eSignatures Directive, the so-called advanced electronic signature. The advanced electronic signature is defined in the Directive as "an electronic signature which meets the following requirements:

(a) it is uniquely linked to the signatory;

(b) it is capable of identifying the signatory;

(c) it is created using means that the signatory can maintain under his sole control; and

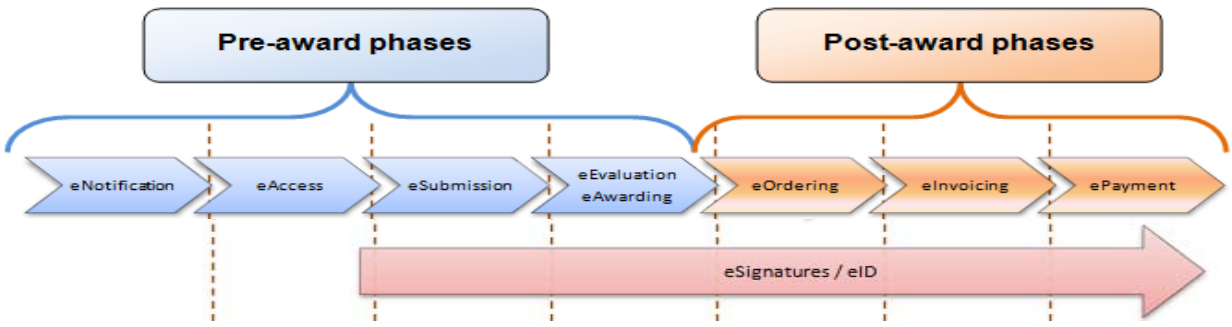
(d) it is linked to the data to which it relates in such a manner that any subsequent change of the data is detectable."

[236] Directive 1999/93/EC of the European Parliament and of the Council of 13 December 1999 on a Community framework for electronic signatures.

In the current state of the art, advanced electronic signatures are implemented using Public Key Infrastructure (PKI) technology, in which a signature be created through a cryptographic function, based on a signature certificate. The certificate identifies the signatory, and can be controlled by the holder through the use of unique PIN codes. Signature certificates are often (but not always) stored on material carriers such as USB sticks or smart cards. Depending on the implementation choices, advanced electronic signatures can be more secure than simple signatures, due to the fact that they are usually implemented as a two factor authentication mechanism (requiring something that the signatory owns, namely the certificate, as well as something that he knows, namely the PIN code), whereas simple signatures are typically one factor authentication mechanisms (relying usually only on something that the signatory knows, e.g. a username/password). In addition, an advanced electronic signature by definition allows the detection of changes to an electronically signed file, which is not necessarily the case with simple signatures. For these reasons, advanced electronic signatures are frequently perceived as being more secure than simple signatures, and therefore more suitable for higher risk applications, such as eProcurement.

Finally as a third tier of electronic signatures, article 5 §1 of the eSignatures Directive introduces the notion of an advanced electronic signature based on a qualified certificate and created using a secure signature creation device (frequently designated as a 'qualified signature'). Essentially, the qualified signature can be thought of as an advanced electronic signature meeting additional quality requirements to enhance its reliability. Through the eSignatures Directive, a qualified signature is granted legal effect identical to a handwritten signature, whereas other electronic signatures only benefit from a non-discrimination principle, i.e. they may not be denied legal effectiveness simply because it is in electronic form, not based on a qualified certificate, not based upon a qualified certificate issued by an accredited certification service provider, or not created using a so called secure signature-creation device.

Both eID and eSignatures can play an important role in supporting several phases of eProcurement, as was also shown in the summary graph above:



eID/eCatalogues in an eProcurement process

In practical terms, electronic signatures can be used in a variety of ways, depending on the modalities used in the eProcurement system:

- A very basic example would be the mere sending of an e-mail containing an offer to the contracting authority, with basic authentication data attached to the e-mail (e.g. an electronic calling card), which would serve as a simple signature;
- A more advanced approach would rely on the user signing an offer by uploading it to an eProcurement website after logging on with his username and password. The metadata attached to the offer during the sending could be considered as a basic signature. This is e.g. the approach taken in the Irish eTenders platform[237].
- When using advanced electronic signatures (including qualified electronic signatures), there are also a number of conceivable variations. For instance:
    - The tenderer could prepare the tender along with the necessary documentation on his local system, which is thereafter signed using signature software installed locally (e.g. using MS Word or Adobe PDF Writer). The resulting documents are thereafter electronically signed, and can be sent to the contracting authority in any supported way (e.g. via e-mail, ftp, uploading it to a specific website, mailing a CD-ROM containing the signed offer, etc). E.g. the Estonian Digidoc software supports this possibility[238].
    - Alternatively (and much more commonly in practice), the contracting authority could require the use of an eProcurement website which incorporates an electronic signing module. In this case, the module is loaded when the tenderer uses the site. The tenderer will typically need to upload the tender along with any documentations, after which the site will require him to follow a specific signing process (typically involving the selection of a signature certificate, followed by the request to enter the PIN code to confirm that the signatory is indeed who he claims to be). This approach is used e.g. in the French *Place de Marché Interministérielle,* which uses a specific Java applet for signing purposes. This applet is also made accessible separately (i.e. outside of the procurement platform).[239]
    - Finally, it may also be the case that the tenderer can prepare his tender entirely online, e.g. by filling out the characteristics of his supplies/services in an eCatalogue preparation module. In this case, no upload of a tender document will be required, and the signature will be placed in the same way as in the example above: a signature module integrated into the website will be loaded, followed by the request to select a certificate and enter the appropriate PIN code. This approach can e.g. be used in the Cypriot eProcurement platform[240].

With the exception of the eNotification and eAccess phases, eSignatures and eID are thus of significant importance for all phases in which data authentication is necessary. They are less relevant for eNotification and eAccess due to the one-way nature of these phases: in principle, there will not be any objection against making public procurement opportunities and documentation available without imposing any further barriers, i.e. without requiring the use of eIDs or eSignatures. This does not imply that eIDs and eSignatures cannot be used in these phases; e.g. automatic notifications of tendering opportunities might be linked to the creation of an online profile (an eID) on a public procurement website. However, in general terms, eIDs and eSignatures are not required in these phases.

[237] See http://www.etenders.gov.ie/, and specifically http://www.etenders.gov.ie/guides/Guide_Download.aspx?id=1061

[238] See http://www.sk.ee/pages.php/02030501

[239] See the java signing applet available at https://www.marches-publics.gouv.fr/index.php5?page=commun.SignDocument&callFrom=entreprise

[240] See the demonstration video at https://www.eprocurement.gov.cy/ceproc/walkthrough/en/EO_12.htm

This is however different for all of the subsequent phases (eSubmission, eEvaluation/eAwarding, eOrdering, eInvoicing and ePayment). In each of these, it is crucial to be able to link specific information to its source and to validate its integrity with sufficient reliability.

7.6.1.2 Provisions within the Public Procurement Directives

The Public Procurement Directives only explicitly address tendering (pre-award phases), as does the Action Plan. According to these documents, awarding entities may decide that communication and exchange of information with economic operators shall be performed exclusively by electronic means or by a combination of electronic means and paper. Articles 42 and 48 of Directives 2004/18/EC, respectively 2004/17/EC provide specific rules with respect to electronic communication, including the requirement for such means to guarantee data integrity and confidentiality. Secure communication channels (such as provided by TLS/SSL) and/or advanced electronic signatures may be used to this effect. Traceability of processes must be guaranteed by storing the original version of all documents along with records of all exchanges carried out. Signatures may play a role to support traceability/non-repudiation.

It should be noted that the Directives thus do not require the use of specific electronic signatures, and do not reference eIDs at all. In practice, with respect to eProcurement the emphasis lies strongly on electronic signatures, partially due to the fact that there is a European (and thus also national) legal framework to build on, and partially due to the fact that advanced electronic signatures are defined as requiring (among other points) the ability to be uniquely linked to the signatory and to identify that signatory. Thus, the use of advanced electronic signatures implies the possibility of identification.

In that respect, it is thus understandable that recital 37 to Directive 2004/18/EC notes that the ‘use of electronic signatures, in particular advanced electronic signatures, should, as far as possible, be encouraged’. However, usage of such signatures is not required, and the Directives’ main emphasis is on ensuring that the integrity of data and the confidentiality of tenders and requests to participate are preserved, and that the means of communication are generally available and thus do not restrict economic operators' access to the tendering procedure.

As a result, contracting authorities are free (subject to national regulations) to choose the appropriate means of communication, including electronic signatures. National legislation may establish mandatory requirements for use of signatures, which all contracting authorities must adhere to, or may allow them to independently choose the level of signatures required for the particular case at hand.

In summary, while the use of advanced electronic signatures is thus not mandatory, the Directives do actively encourage their use as a measure likely to improve the security and confidentiality of the tendering process. It’s important to note however that the Public Procurement Directives allow signature requirements to be set at a lower level than qualified signatures, if this is considered acceptable and more desirable from a policy perspective. In the sections below, we will examine the main considerations when making this decision.

7.6.2 Main opportunities and challenges of using eProcurement for this tool

7.6.2.1 eProcurement opportunities

The main driver behind eSignatures as a tool to support public procurement is their capability of ensuring data integrity (as required by the aforementioned articles 42 and 48 of the Directives) and of supporting authenticity (linking a signed document to a specific signatory). This is specifically the case when using advanced signatures, defined in the eSignatures Directive as an electronic signature that meets the following requirements:

- it is uniquely linked to the signatory;
- it is capable of identifying the signatory;
- it is created using means that the signatory can maintain under his sole control;
- it is linked to the data to which it relates in such a manner that any subsequent change in the data is detectable.

In the current state of the art, advanced electronic signatures are implemented via so-called PKI technology, in which messages can be signed using private keys (held uniquely by the signatory), and signatures can be verified using a public key. These keys are linked to the signatory via a signature certificate (a summary electronic file containing key identification information with respect to the signatory), which is issued and signed by a third party (a certification service provider or CSP) to guarantee its authenticity. The trustworthiness of end users' signatures results from the fact that the CSP which issued the signature certificate is trusted by the relying party who is attempting to verify the signatures. In this way, advanced electronic signatures offer the possibility of securing electronic communications and of providing a framework for trustworthiness.

At the European level, the opportunity for the productive use of electronic signatures is further improved through the aforementioned concept of qualified signatures (or in the eSignatures Directive's terms: an advanced electronic signature based on a qualified certificate and created using a secure signature creation device). These qualified signatures are legally equated to traditional hand written signatures, and can thus be used to eliminate any doubts as to the legal value of the signature.

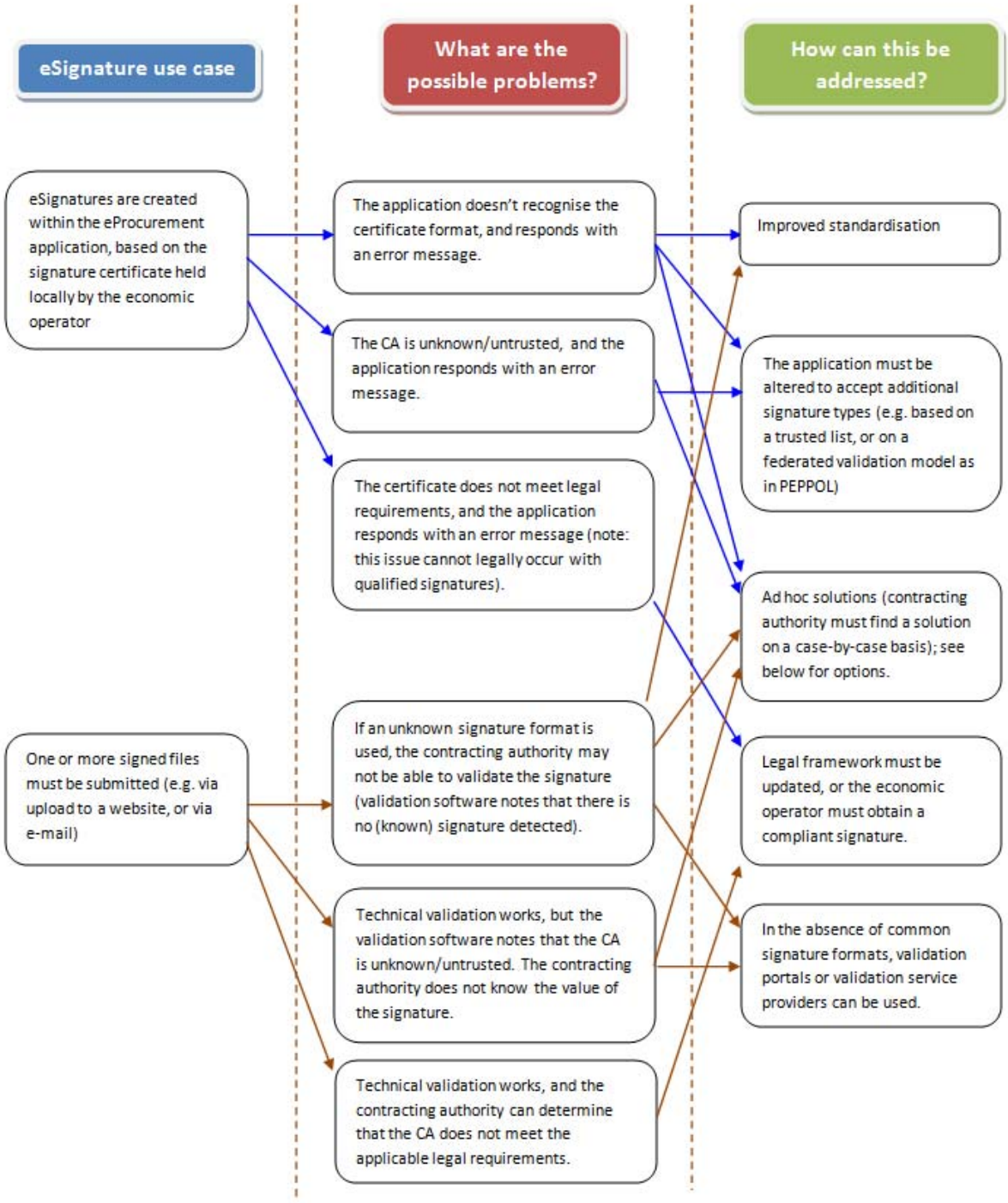
Thus electronic signatures offer the possibility of ensuring the integrity and authenticity of electronic communications, and generally improve the reliability and trustworthiness of any electronic communications process. Specifically with respect to eProcurement, this is of course a significant benefit.

7.6.2.2 eProcurement challenges

As stated in "The Guidelines to Common Specifications for Cross Border use of Public eProcurement"[241], the lack of interoperability between the different national schemes for electronically signing tender documents is the single most important blocking factor to cross border eProcurement.

[241] ICT Policy Support Programme (PSP), Guidelines to Common Specifications for Cross-border Use of Public Procurement, April 2007, http://ec.europa.eu/information_society/activities/ict_psp/documents/guidelines_common_specs_eproc.pdf

From a practical perspective, the possible issues that may arise in the cross border use of eSignatures are summarised in the table below:



Overview of possible use cases, issues and resolution approaches with respect to eSignatures

It should be noted that hybrids between the two major use cases above are also possible, namely cases where a signature is created in the application (as in the first use case), but where it must be validated later on by the contracting authority (as in the second); or inversely cases where a signature

is created locally outside of an application (use case 2), but then must be uploaded into an application that will validate it (use case 1). The categorisation of problems however remains applicable.

Generally, this overview shows that there are four major[242] categories of challenges to be overcome:

- Firstly, it is possible that only a small set of CAs is supported by a specific eProcurement application. In that case, an economic operator would only be able to use that application if he can obtain a signature certificate from one of the supported CAs. If this CA is established in another country, then this may be practically unrealistic, especially in cases where certificates are only issued after identification in person.
- Secondly, technical interoperability problems can present themselves: the signature format or the signature certificate profile is not recognised by the contracting authority. In this case, the contracting authority cannot determine if the signature is technically valid.
- Thirdly, it is possible that technical validation is possible, but the CA issuing the signature certificate is unknown to the contracting authority. In that case, the contracting authority will know that the signature is technically valid, but not whether it should place any trust in it.
- Finally, legislation may require the use of a specific signature type (e.g. a signature based on a qualified certificate or a qualified signature), while the used signature is of a lower level. This issue cannot present itself when using qualified signatures, as this signature type is legally equivalent across the EU.

Available solutions and workarounds vary from problem to problem, as indicated in the table. Apart from longer term solutions (standardisation work or regulatory changes), provisional workarounds are also possible. Ad hoc approaches may be workable on a smaller scale: these include any action which is not entirely automated, but which requires the contracting authority (or the entity in charge of the validation of bids) to take action on a case by case basis. Possible examples include attempting to validate signatures which do not comply with local practices (e.g. by contacting technical experts if needed), examining whether an unknown CA is indeed trustworthy by assessing its reputation in the market, or quite simply by contacting the economic operator directly, and providing an alternative solution (e.g. provisionally submitting an electronically signed version, with an authentic paper version as a back-up solution). In the sections below, we will assess to what extent such approaches are used in the market.

The main challenge with respect to eSignatures is choosing an appropriate solution to ensure data integrity/authentication which can be applied in a cross border context, i.e. without creating interoperability barriers, especially for foreign economic operators, or finding a workaround to such barriers. For more details on these barriers, we refer to the “Preliminary study on mutual recognition of eSignatures for eGovernment applications”[243], last updated in December 2009.

[242] Other issues can also present themselves, such as the incompatibility between eSignature middleware and the eProcurement application. In this case, the economic operator will not be able to use the application, since it will incorrectly note that there is no usable signing software on the economic operator’s system. Through the increased integration of signing applets into eProcurement applications, this problem can be expected to diminish over time. Other issues might relate to the question of whether a claimed qualified signature was created using a valid secure signature creation device; however, this discussion has thus far not presented itself, as far as known.

[243] Update of the IDABC Preliminary Study on mutual recognition of eSignatures for eGovernment applications; see http://ec.europa.eu/idabc/en/document/6485

7.6.3 The 2004 status and vision of the Action Plan

7.6.3.1 2004 status

The 2004 Impact Assessment quoted above noted that in 2004, 15 out of 25 Member States declared that advanced electronic signatures had been introduced (although this didn't necessarily mean that they were used in eProcurement). Of the remaining 10 Member States, 7 declared their intention of introducing such signatures. Actual signature usage was very limited, with only Austria reporting significant uptake. 9 Member States reported that advanced electronic signatures would become mandatory for eProcurement, 8 reported that they would not, and the remainder hadn't decided on this issue yet. All Member States acknowledged the interoperability challenges in the cross border use of such signatures, and further action by the European Commission to help settle this issue was invited. More detailed analysis of the situation around this timeframe can also be found in the 2003 study on "The legal and market aspects of electronic signatures"[244].

Thus, the 2004 eSignatures landscape can best be described as fragmented and somewhat uncertain: while there was a growing interest in eSignatures and their application in eProcurement, the availability of national infrastructure was actually still quite limited. More importantly, it was clear that the introduction of advanced electronic signatures in eProcurement applications would be a mixed blessing if interoperability challenges were not addressed. If the interoperability questions would be left unanswered, then eSignatures might have a beneficial effect on security and trustworthiness of tendering procedures at the national level, but at a cost of severely hampering cross border procurement, which would have been the antithesis of the Action Plan's objectives. Action to address this point would clearly be needed.

7.6.3.2 Vision of the Action Plan and indicators for success

As noted above, articles 42 and 48 of Directives 2004/18/EC respectively 2004/17/EC allow the Member States the option to require that electronic tenders be accompanied by an advanced electronic signature in conformity with article 5, §1 of Directive 1999/93/EC (i.e. up to a qualified signature level). The Action Plan identified two main risks if Member States were to choose to require the use of a specific advanced signature:

- that a low penetration of advanced digital signatures at the national level would prevent local procurement processes from running smoothly and successfully.
- that the general interoperability problems related to the use of advanced electronic signatures would become a barrier to cross border electronic public procurement.

Indeed, the low general penetration of the advanced electronic signature might cause problems if the contracting authorities require the use of such signatures, as there is a risk that businesses will choose not to obtain the advanced digital signature, and simply not participate in an electronic call for tender requiring an advanced digital signature. Certainly, if interoperability barriers would not be addressed

[244] See http://ec.europa.eu/information_society/eeurope/2005/all_about/security/electronic_sig_report.pdf

effectively, it would be possible that particularly foreign businesses (from other Member States than the contracting authority) would find it so burdensome to obtain a supported electronic signature that it would decide instead not to participate in the public call for tender at all.

The Action Plan recognised very explicitly however, that eSignature interoperability was a horizontal issue, i.e. that it was not specific to eProcurement. It acknowledged the existing initiatives already undertaken in other eGovernment contexts, specifically the Bridge/Gateway CA Pilot[245] within the IDA Programme, as a way of efficiently establishing trust between contracting authorities and CSPs established in other Member States. However, the Action Plan also noted that such initiatives would be unlikely to provide conclusive solutions by 2006, and therefore aspired for Member States and the Commission to "work together on an operational project to rapidly find a solution based on the mutual recognition principle. At this stage, the Commission would favour a solution to test and promote solutions enabling cross-border use of qualified signatures. Any solution identified should be easy to generalise also in other fields of activity."

In summary, the Action plan noted that a horizontal approach (not restricted to eProcurement alone) was necessary, and favoured to work initially on interoperability of qualified signatures.

This perspective is reflected in the relevant measures in the Action Plan, which are both grouped under the first objective (Ensure a well functioning Internal Market in electronic public procurement), and specifically under the heading 'Remove / prevent barriers in carrying public procurement procedures electronically':

Measure	*Targeted party*	*Nature of the measure*
Commission proposes an action under the IDABC programme to help Member States coordinate implementing the use of advanced qualified signatures	Commission	Support in implementation
Member States apply, if required by national law, interoperable qualified electronic signatures	Member States	Statement of principle

Measures in the Action Plan related to the interoperability of eSignatures

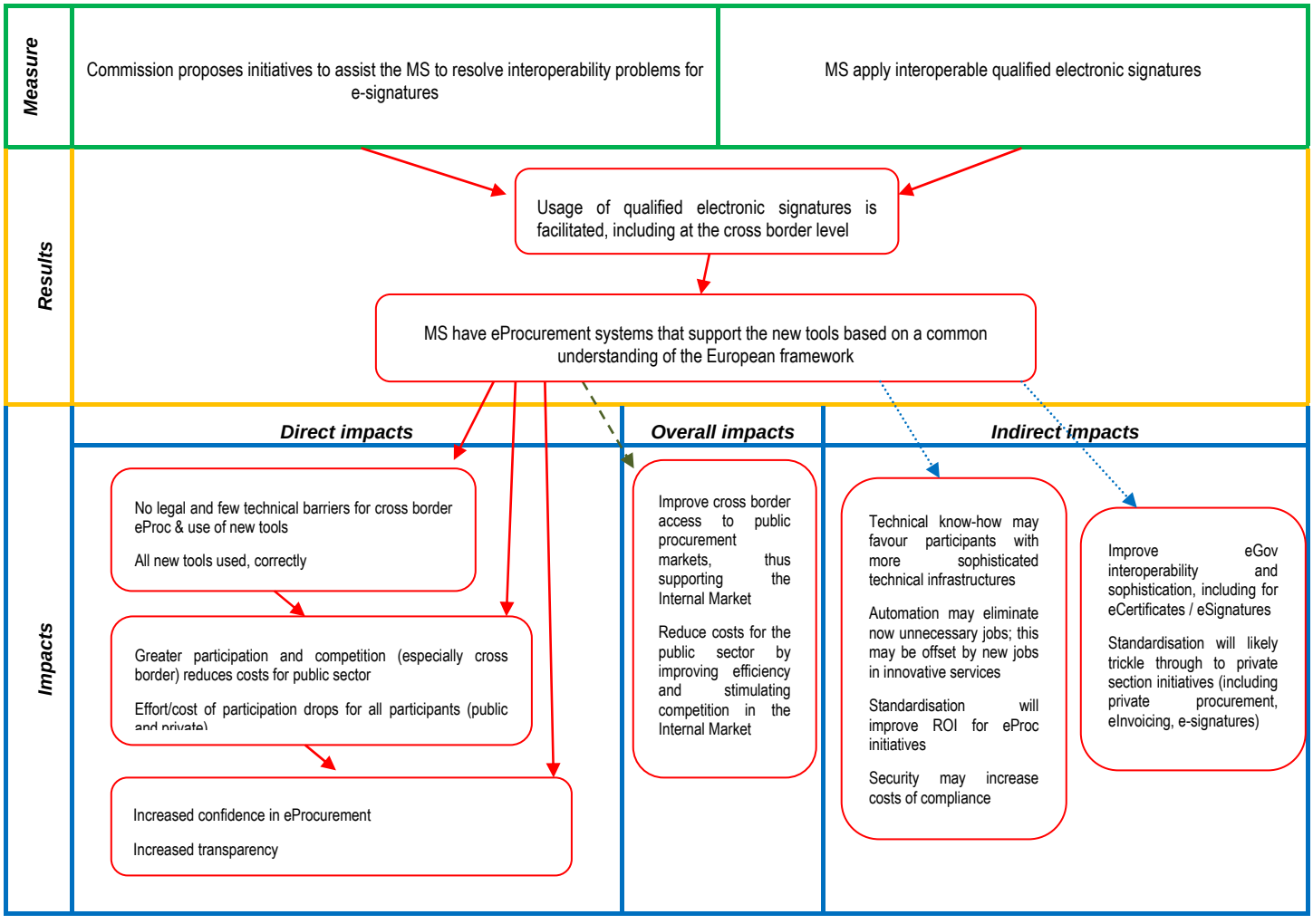
Looking at both measures, it can be noted that only the first measure is tangible, aiming to help Member States to implement qualified signature applications (if they desire to do this). The second measure was qualified as a 'statement of principle' in the table above. It called for Member States to apply interoperable qualified signatures, if required by national law. Concretely, this specific measure therefore is more of a reminder of two basic principles under the Public Procurement Directives and the eSignatures Directive: the right for Member States to require the use of qualified signatures in eProcurements, and the obligation to recognise all qualified signatures as legally equal, irrespective of their origin. In that respect, the second measure does not really imply any concrete obligation for any party, but can instead be seen as an expression of the policy emphasis on qualified signatures under the Action Plan.

While the reason for this emphasis on qualified signatures is not explicitly stated in the Action Plan, it is none the less clear when examining the specific characteristics of qualified signatures. Firstly, only

[245] See http://ec.europa.eu/idabc/en/document/3235

qualified signatures benefit from a clear legal value that applies uniformly throughout all Member States, namely their equivalence to hand written signatures. Secondly, only qualified signatures benefit from a homogeneous trust framework throughout all Member States: any CSP issuing qualified signature certificates to the public is subject to mandatory supervision at the national level, and all such signatures are in principle based on equivalent building blocks (namely advanced signatures created using qualified certificates and secure signature creation devices). Thus, only for qualified signatures is there a reasonable possibility of reliably determining the trustworthiness at a cross border level.

This explains why qualified signatures were seen as the most favourable signature option: they were not only the most secure and legally unambiguous signature type, but also the one with the greatest interoperability potential. The expected impacts of this approach were defined in the intervention logic description above:



On the basis of this graphic, several key indicators of the Action Plan's impact on eSignatures can be defined. Firstly, there is the obvious question of the actual execution of the measures, and notably whether the Commission has indeed proposed an action under the IDABC programme to help

Member States coordinate implementing the use of advanced qualified signatures to resolve interoperability problems. However, there are more relevant indicators:

- Firstly, to what extent have Member States embraced electronic signatures in their public procurement regulations? To what extent are qualified signatures required?
- Secondly, to what extent have Member States implemented eProcurement applications using advanced electronic signatures, and qualified signatures in particular?

Both of these questions are crucial to assess whether or not the Member States have placed the same emphasis on qualified signatures as the Action Plan did. An exact answer to these questions is thus necessary to determine whether the priority of the Action Plan was correctly chosen (insofar as this can be fairly assessed with the benefit of hindsight), and if not, what the major barriers have been.

Finally, since the preference for qualified signatures was at least partially influenced by the desire to eliminate interoperability barriers, we will need to examine which of the eProcurement applications using advanced/qualified electronic signatures are accessible using signature solutions from other Member States. This is necessary to assess to what extent eSignatures have created or reduced barriers for cross border public procurement, as this is one of the major drivers behind the Action Plan.

7.6.4 Current status and evolution - matching with the Action Plan vision

7.6.4.1 Actions undertaken

With respect to the first measure ('the Commission proposes an action under the IDABC programme to help Member States coordinate implementing the use of advanced qualified signatures to resolve interoperability problems'), several relevant actions can indeed be identified, including within the IDABC programme. Noted examples include:

- the IDABC programme 2005-2010, which contained an entry on the implementation of the Action Plan. The IDABC programme is the main source of funding for technical interoperability studies;
- the IDABC eProcurement Expert Group, which was run jointly by IDABC/MARKT C1, and has met 2-3 times per year.

Within this framework, the IDABC also launched and completed several relevant studies aiming to examine eSignature interoperability problems and to propose specific solutions, including via the 2007 and 2009 Preliminary study on mutual recognition of eSignatures for eGovernment applications (see http://ec.europa.eu/idabc/en/document/6485), with the 2009 edition examining specifically the issue of eSignature interoperability in an eProcurement context, and the ongoing European Federated Validation Service (http://ec.europa.eu/idabc/en/document/7764), which explores the possibility of a more comprehensive solution to eSignature validation, including through revision of the existing regulatory/standardisation/trust framework.

Other relevant initiatives have been launched outside of the IDABC context (but in continuous interaction with IDABC work), including the 2007 Study on the standardisation aspects of eSignatures[246], the CROBIES study aiming to implement quick wins to improve eSignature interoperability (ongoing; not yet published), and of course the large scale eProcurement pilot PEPPOL[247], which includes a specific measure on eSignature interoperability[248].

With respect to qualified signatures as targeted specifically by the Action Plan, the most influential initiative is the CROBIES project. This project examined a number of measures that could be taken at the European level to improve the interoperability of notably signatures based on qualified certificates, including the establishment of national trusted lists of supervised CSPs (to be coordinated at the EU level), standardisation efforts in relation to certificate profiles, SSCD profiles and signature formats, and the establishment of supervision criteria.

One of the outcomes has been a Commission Decision[249] requiring Member States to put in place homogeneous trusted lists of qualified CAs, made available in a common format. In this way, it will become easier for relying parties to assess whether or not a specific certificate is indeed qualified, by checking whether the issuing CA is included on the trusted list of its country of establishment. In more practical terms, the trusted list will allow relying parties to determine whether a signature can be considered a qualified signature. While intended specifically for the context of the Services Directive, this list will obviously be equally usable in other contexts as well, including eProcurement. Under the aforementioned Decision, Member States were required to make their lists of supervised CSPs available as of 28 December 2009. While not all Member States have been able to fully comply with this deadline, it is none the less clear that these lists will become an important trust enabler in the following years, which should permit further progress to be made with respect to eSignature interoperability. However, this will not have the same impact on signatures which are not based on qualified certificates.

A second initiative also exists which may prove to impact this second category as well, which is the PEPPOL large scale pilot[250]. This pilot also includes a work package examining eSignature interoperability challenges specifically in the eProcurement context[251], and is looking into implementing a decentralised signature validation solution. The validation model piloted by PEPPOL mainly allows relying parties (i.e. the contracting authorities in a public procurement) to choose one of two options:

- In some cases, validation of a signature certificate (termed 'eIDs' within the PEPPOL project) may be sufficient for the purposes of the relying party, e.g. because any other element of the signature validation can be addressed by the contracting authority itself. In this case, PEPPOL principally relies on XKMS responders, which can operate in a federated network. The result is a statement on the validity and quality of the signature certificate.
- In other cases, further guarantees may be required, and a signed document as a whole will need to be validated. In this case, it is considered to use an implementation of the OASIS-DSS interface; however, there is no commitment on this aspect as of yet.

[246] See: http://ec.europa.eu/information_society/policy/esignature/docs/standardisation/report_esign_standard.pdf

[247] See http://www.peppol.eu/

[248] See http://www.peppol.eu/work_in_progress/wp-1-esignature

[249] Commission Decision 2009/767/EC setting out measures facilitating the use of procedures by electronic means through the 'points of single contact' under Directive 2006/123/EC on services in the internal market

[250] See http://www.peppol.eu/

[251] See specifically http://www.peppol.eu/deliverables/wp-1

Both cases could be implemented in a number of ways, including local software solutions for signature verification and verification as a service, e.g. from a trusted VA (validation authority). PEPPOL will explore both options. However, it should be noted that while comprehensive, PEPPOL is a pilot initiative, and actual impact of the PEPPOL results will depend on further follow-up initiatives at the national and possibly transnational level, specifically to implement a permanent governance model to replace the temporary governance by the PEPPOL consortium during the pilot stage.

The second measure ('Member States apply, if required by national law, interoperable qualified electronic signatures') has to be assessed at the national level, and will therefore be examined below, along with the actual operational impact in practice of the aforementioned measures.

7.6.4.2 Evolution at the national level

As noted above, to get a comprehensive overview of the eSignature status in practice, we need to assess both the regulatory landscape and the technical infrastructure in place in the Member States.

Firstly, with respect to the national legislation on eSignatures, a comprehensive table with an overview of national implementation choices has been provided in Annex G. Summarising these, a distinction must be made between Member States that *require* the use of an electronic signature (i.e. that mandate this use, irrespective of the preference of the contracting authority), and Member States that allow contracting authorities to require the use of an electronic signature (without imposing any specific requirements). The status as described in Annex G can be briefly summarised as follows:

eSignature is always required				Contracting authority may require the use of an eSignature				No signature requirement
eSignature	Advanced eSignature	*Advanced based on qualified certificate*	Qualified signature	eSignature	Advanced eSignature	*Advanced based on qualified certificate*	Qualified signature	
Germany[252] *Latvia*[253] *L'stein* *Luxemb.*	*Croatia* *France*[254] *Lithuania* *Slovakia*[255]	*Bulgaria*[256] *Czech Republic*[257] *Poland*	*Austria*[258] *Belgium* *Italy*[259] *Portugal*	*Denmark*[260] *Estonia*[261] *Ireland*[262] *United*	*Iceland* *Malta* *The Netherl.*		*Cyprus*	

[252] Electronic signatures are mandatory, and must follow the requirements specified by the contracting authority, or use qualified signatures. Before 2009, only qualified signatures were permitted, but this rule was altered to improve flexibility and thus interoperability.

[253] An electronic signature in accordance with the Electronic Documents Law must be used. This law defines both the electronic signature and the qualified signature, but not an advanced electronic signature.

[254] Electronic offers must be signed using a certificate meeting the requirements established through a ministerial decree. This Decree of 26 August 2006 refers to a limited list of supported certificates which meet the requirements of the security reference framework used in France for electronic signatures used in public sector applications. This list is published here: http://www.entreprises.minefi.gouv.fr/certificats/.

[255] Tenders must be signed using an electronic signature in accordance with the electronic signatures act. However, this law only defines an e-signature based on asymmetric cryptography ('digital signature') and does not define a technologically neutral e-signature (as the Signature Directive does via the 'electronic signature' concept.) Therefore, de facto the minimum type of e-signature is the advanced e-signature

[256] A so called 'universal signature' must be used. This is a type of advanced electronic signature which is supported by a qualified certificate issued by a registered Certification Service Provider (i.e. registered in Bulgaria).

		Slovenia	*Spain Greece*	*Kingdom*	*Norway Romania Sweden*			*Finland Hungary*
4 countries (including 3 MS)	**4 countries (including 3 MS)**	**4 countries (including 4 MS)**	**6 countries (including 6 MS)**	**4 countries (including 4 MS)**	**6 countries (including 4 MS)**	**0 countries (including 0 MS)**	**1 country (including 1 MS)**	**2 country (including 2 MS)**

eSignature requirements at the national level

Thus, of the 31 countries for which the eSignatures status is known[263], 13 do not explicitly require the use of electronic signatures (the categories "may require eSignature" and "no signature requirement" in the table above). These are the countries which have thus left the largest amount of flexibility in their legal regimes, and it is therefore not surprising that these include all Nordic countries (both Member States and non-Member States, i.e. Denmark, Iceland, Finland, Norway and Sweden) and the common law countries UK and Ireland. The vast majority of these (10 of the 12) fall into two categories: those that allow contracting authorities to require the use of eSignatures in general (4 countries, with the typical phrasing being that electronic signatures in accordance with the eSignatures Directive or the national transposition may be required), and those that allow contracting authorities to require the use of an advanced signature (6 countries). In both cases, the margin of appreciation left to contracting authorities is almost absolute: given that no signature requirement is ever mandated, even simple username/password mechanisms can be used for eProcurement systems; and since qualified signatures are also advanced signatures (which meet the additional criteria of being based on a qualified certificate and created using a secure signature creation device), it can be reasonably argued that even these signature types can be mandated in all of these countries. Thus, contracting authorities are virtually unrestricted by the legal framework with respect to electronic signatures.

In 18 other countries, the use of electronic signatures is required in some form. Several interesting patterns and observations can be made:

- The largest group (6 countries) has made the use of qualified signatures mandatory. All of these are Member States, and all of these are a part of the EU-15. It is also interesting that 5 of these 6 countries have deployed eID cards supporting the use of qualified signatures (Austria, Belgium, Italy, Portugal and Spain)[264]; thus, there is a clear correlation between the demand for higher legal certainty and the maturity of the available local infrastructure. It should also be noted however that other countries with an eID card have retained their

[257] The contracting authority may also require that an electronic mark based on a qualified system certificate is used; the latter option is a type of signature under Czech law which can be considered as an electronic signature created directly by/on behalf of a legal entity, and which meets specific requirements defined under Czech law.

[258] The law refers to a 'secure signature' (*Sichere elektronische Signatur*), corresponding to a qualified signature. The term 'secure signature' was removed from the Austrian eSignatures Act and replaced by the term 'qualified signature' in 2009.

[259] Only digital signatures as defined and regulated by Legislative Decree 7 March 2005 No 82 are permitted. This is a special type of qualified electronic signature with extra requirements (art.77.6(c)).

[260] Due to the transposition *telle quelle*, there is no binding signature requirement under Danish law, although contracting authorities may impose specific signature requirements for specific procurements.

[261] If electronic signatures are used, they must comply with the provisions of the eSignatures Directive.

[262] If electronic signatures are used, they must comply with the provisions of the eSignatures Directive.

[263] The status of electronic signature requirements in Turkey is unknown.

[264] Source: IDABC 2009 Study on eID interoperability for PEGS; see http://ec.europa.eu/idabc/en/document/6484

tradition of legal flexibility, including notably Estonia and Finland. Thus, there is no complete overlap between eID countries and countries where qualified signatures are a requirement.

- The second largest group (5 countries, including 4 Member States), require the use of an electronic signature, but not necessarily an advanced or qualified signature. It is interesting to note that Germany is included in this group. Until 2008, Germany also required the use of qualified electronic signatures; however, this rule was loosened from the beginning of 2009 to improve flexibility and interoperability. Given that the electronic signature is an extremely broadly defined concept, in practical terms this requirement is relatively easy to meet: legally, the only requirement is that the offer is signed using "data in electronic form which are attached to or logically associated with other electronic data and which serve as a method of authentication" (the definition of an electronic signature under the eSignatures Directive). Thus, any mechanism that uses separate electronic data as a way of authenticating a bid by being attached to or logically associated with it would meet this requirement.
- Three countries require the use of an advanced electronic signature, including two Member States. France falls within this group, however, an extensive reference framework for security has been defined in France, and only signature certificates meeting the requirements of this reference framework may be used in eProcurements. Thus, the signatures are subject to much higher requirements than an advanced signature as such.
- Finally, four countries require the use of advanced signatures based on qualified certificates. It should be noted however that Bulgarian law requires that a so called 'universal signature' is used. As noted above, this is a type of advanced electronic signature which is supported by a qualified certificate issued by a registered Certification Service Provider (i.e. registered in Bulgaria).

It is clear from the overview above that the clean-cut distinction between the different signature requirements is not always easy to apply, due to the existence of additional requirements in a number of countries above, as was seen in Bulgaria, France, and Italy, and through the reliance on concepts that may not have a clean equivalent in other countries, such as the notion of an electronic mark in the Czech Republic, the requirement to use certified mail in Italy, and to apply timestamps in Slovakia. The interoperability impacts of such requirements will be analysed further below.

The overview above would suggest that legal interoperability barriers only exist in a few Member States, and even in those cases actual barriers depend largely on the method of implementation (e.g. the Slovakian requirement of a timestamp might constitute a barrier if the economic operator is required to apply a timestamp to his bid; but if it is instead interpreted to mean that the eProcurement infrastructure itself must timestamp the bid (which is currently indeed the accepted interpretation in Slovakia), then it is merely an interesting clarification with no negative interoperability impact at all). However, it should be noted that practical realities may be quite different from the legal framework. Even if the laws merely state that qualified signatures must be used, this may not mean that any offer signed by an economic operator with a local qualified signature will automatically be accepted. This depends on the actual implementation of the appropriate infrastructure, which must allow a contracting authority to determine reliably whether an electronic signature is indeed qualified. In the absence of such infrastructure, the absence of legal barriers per se is not very meaningful.

For these practical realities (technical implementation and available infrastructure), we can refer to the recent IDABC Preliminary Study on Mutual Recognition of eSignatures[265]. In this study, 19 eProcurement applications were reported in total, 15 of which were presently operational, three were

[265] Update of the IDABC Preliminary Study on mutual recognition of eSignatures for eGovernment applications; see http://ec.europa.eu/idabc/en/document/6485

in pilot stage and one in the planning stages. Obviously, there are many more eProcurement applications available in practice, but this study focused only on eProcurement applications with an eSignatures component. Thus, applications which merely allow prospective tenderers to register and search for procurement opportunities were not included in these statistics. An overview of the relevant applications and their signature characteristics is again included in Annex G.

Summarising the general trends, and looking exclusively at the 15 operational applications, there was some diversity to be found:

- Six solutions relied on qualified signatures (Austria, Italy, Lithuania, Poland, Portugal and Romania)
- Two required advanced signatures based on qualified certificates (Czech Republic and France)
- Six required advanced signatures: Denmark, Germany, Norway, Slovakia, Spain and Sweden;
- One (Ireland) required a simple signature only.

More interesting than the reported signature type of the supported signatures is the accessibility of the application to tenderers in other countries. In the 2007 edition of the Preliminary Study on Mutual Recognition of eSignatures, the response to this question was universally negative: eSubmission applications were only accessible provided that the tenderer obtained local credentials. This situation changed to a small extent in the past two years:

- For a majority of the applications (10 out of 15), the application is only accessible when using local credentials. This is the case in the Czech Republic, France, Germany, Italy, Lithuania, Poland, Portugal, Romania, Spain and Sweden.
- Two countries have a small list of foreign solutions which are also supported. This was the case in Austria, where the use of a signature validation component allowed the eSubmission application to also accept signatures created using an eID card from Belgium, Italy, and Slovenia; and in Norway, where the eSubmission platform could be extended to support electronic signatures supported by the private BBS Validation Authority.
- Finally, three countries have no restriction in place: Ireland, Denmark and Slovakia. In the Irish case, the application uses a simple online registration system that does not use any PKI components and therefore has no interoperability issues to be dealt with. In the Danish and Slovakian case, registration results in the recipient receiving an advanced signature certificate via e-mail that complies with national requirements, which he can use to sign the offer. These are all examples of a case where local credentials are still needed, and where there is thus strictly no interoperability, but where the need for interoperability has been avoided by introducing a sufficiently flexible user registration system. The Netherlands is similarly experimenting with a system that has not become fully operational yet, in which service providers would be able to register via the website, and would then become capable of signing bids using two-factor authentication via SMS (after verification of the registration by the Ministry of Economic Affairs).

Thus, there is some improvement to be found with respect to interoperability, as validation systems have entered into usage in Austria and Norway. These can be considered a form of workaround as mentioned in the introduction: in each case, the solution can be extended to integrate support for foreign eSignature solutions which meet the nationally applicable requirements.

It should be duly acknowledged that Spain already used (and still uses) a validation platform two years ago and can thus be considered a pioneer of this approach; however, the Spanish @firma solution incorporates only Spanish CSPs at this time[266], and therefore currently only serves a national interoperability function. On 22 September 2009, the Ministries of the Presidency of Portugal and Spain were reported to have signed a bilateral agreement to set-up cross border validation services in relation to the national eID cards and other qualified certificates issued in both countries, under the legal umbrella of the eSignature Directive[267]. This is of course a very positive development, given the theoretical possibility of extending this approach to other countries. Finally, it should be noted that Sweden is currently also planning to integrate support for Norwegian and Finnish eIDs.

Summarising the situation with respect to eSignatures:

- Out of the 27 Member States, 13 have a legal requirement to use advanced electronic signatures, 6 of which require qualified signatures, i.e. slightly less than a quarter of Member States. None the less, no other regulatory strategy with respect to electronic signatures is more popular.
- In practice (looking at eProcurement applications), eSignature interoperability is still very limited. While some progress has been made in the last few years, most applications still only support local credentials, with ad hoc exceptions and workarounds being identified in Austria and Norway.

Thus, while qualified signatures have increased in popularity, this has not resulted in significant interoperability benefits. To the contrary, eSignatures remain a significant interoperability barrier, and a real challenge to cross border public procurement.

7.6.4.3 Matching with the Action Plan

Above, we noted two preliminary evaluation questions:

- to what extent have Member States embraced electronic signatures in their public procurement regulations? To what extent are qualified signatures legally required?
- to what extent have Member States implemented eProcurement applications using advanced electronic signatures, and qualified signatures in particular?

The overview above noted that:

[266] The Portuguese national eID card is already integrated in the @firma preproduction environment and ready to be transferred to the production environment.

[267] The agreement reportedly defines a collaborative framework that will allow for the establishment of cross border validation services needed for the mutual incorporation of qualified certificates in eGovernment applications in both Member States. Both countries agree to provide a predefined Service Level Agreement on validation services and make the appropriate technical integration of the national validation services.

- 18 Member States have a regulatory requirement for the use of electronic signatures, and 6 of these required a qualified signature. 10 Member States allow electronic signatures to be required by the contracting authority if desired. Two (Finland and Hungary) have no signature requirement at all.
- 14 Member States had implemented an eProcurement platform requiring an advanced signature, and six of these required qualified signatures.

Thus, qualified signatures have indeed taken up a significant role in the legal and infrastructural framework for eProcurement, but uptake is certainly not universal. Certain Member States have not made qualified signatures (or advanced signatures) a part of their eProcurement approach, nor do they have any plans of doing so. In that respect, the Action Plan's expectations with respect to qualified signature uptake in the Member States may have been overly optimistic.

The more crucial evaluation question however is whether the eProcurement applications using advanced/qualified electronic signatures are accessible using signature solutions from other Member States, to assess to what extent eSignatures have created or reduced barriers for cross border public procurement. In that respect, the current outlook is nuanced. Looking at the 15 eProcurement platforms identified above:

- It was noted that 10 out of 15 applications required local signature solutions. Thus, in a vast majority of cases, advanced electronic signatures were a barrier to cross border public procurement.
- One country (Ireland) did not use advanced signatures at all, and relied on a simple username/password combination after online registration (much like most consumer oriented e-commerce sites). In this case, signature interoperability barriers are of course avoided.
- However, this should not be taken to mean that advanced signatures cannot be used in cross border eProcurements at all:
    - In Denmark and Slovakia, registration results in the recipient receiving an advanced signature certificate via e-mail that complies with national requirements, which he can use to sign the offer. Local credentials are thus still needed, but the need for interoperability is avoided by introducing a sufficiently flexible user registration system.
    - More importantly from an interoperability perspective, Austria and Norway each established a small list of foreign solutions which are also supported. These are example cases of real interoperability. In both cases, it was signalled that the recently created national lists of supervised CSPs would be used as an input to expand these systems. Since these lists focus primarily on CSPs issuing qualified signature certificates to the public, it does appear to be likely that interoperability of qualified signature solutions is likely to increase in the future.

One can only conclude that the expectation of the Action Plan that interoperability challenges could be overcome for qualified signatures has not yet become a reality. In practice, most eProcurement applications which are accessible to foreign economic operators have achieved this objective by using purely local credentials, and by implementing flexible registration systems to issue such credentials to foreign economic operators, with the minor aforementioned examples of Austria and Norway as exceptions to this rule. As could be expected, this flexible approach results in less security, but increases user friendliness and accessibility.

Acceptance of foreign eSignature solutions is thus still largely at an experimental stage, and operational platforms rely mainly on locally known signature types. Thus, the beneficial impact of the Action Plan in this area in practice has thus far remained limited. However, it was also flagged above that there are clear prospects for progress in 2010, specifically with respect to qualified signatures, with the Services Directive providing new policy impetus in this area. The establishment of trusted lists of CSPs issuing qualified certificates to the public is one key achievement that has to be mentioned, and further work is underway to rationalize the eSignature standardisation work, which can again be expected to have a beneficial impact on eSignature interoperability, especially at the qualified level.

In conclusion, while the measures of the Action Plan with respect to (particularly) qualified electronic signatures have not resulted in the elimination of interoperability barriers, it seems that its expectations and assumptions were premature for the specified time period, rather than mistargeted. Under the influence of the actions within the context of the Services Directive, interoperability of qualified signatures is likely to improve significantly in 2010 and 2011. However, prospects for the cross border interoperability of other types of electronic signatures remain weak at best within this timeframe, and thus the prevalence and importance of locally issued credentials is likely to remain significant in the medium term.

7.6.5 Remaining gaps/barriers

Through the past initiatives at the European level to chart eSignature interoperability problems (including all of the studies identified above), the existing situation, challenges and possible solution models are now well understood, and they can be summarised as follows:

Possible gap / barrier	Applicable to this phase?	If yes, explain
Lack of available infrastructure	Yes	While electronic signatures are available in all Member States, the overview above shows that only qualified signatures are acceptable in public procurements in some Member States. Such signatures are however not yet universally being offered.
Interoperability	Yes	eSignature use from a cross border perspective is hampered by a number of technical interoperability challenges, including diverging certificate profiles, signature formats, and the ability to recognize SSCDs.
Legal uncertainty	No	/
Trustworthiness	Yes	The reliability of electronic signatures in cross border transactions can only be determined for qualified signatures and (to a lesser extent) for advanced signatures based on qualified certificates. For other types of signatures, contracting authorities receiving a signed bid will have a hard time determining trustworthiness. From a practical perspective, even the trustworthiness of qualified signatures will be hard to determine for contracting authorities without sufficient technical know-how.
Accessibility	Yes	Due to the use of different technologies and signature types, it will be challenging for economic operators to determine whether the signature type they use will meet national legal requirements in cross border procurements. From a strictly legal perspective, this issue cannot exist for qualified signatures, which should be uniformly accepted in all Member States. In addition, the way in which eSignatures are integrated into eProcurement solutions vary widely (e.g. integrated signing modules versus external signing software), which makes it harder for economic

		operators to determine what is expected of them. Clear instructions in that respect are very important, but not yet universally provided.
Economic viability and use cases	Yes	Especially for economic operators which only rarely participate in public procurements and which have little need for electronic signatures otherwise, the investment (in terms of financial cost and training) of obtaining eSignature solutions may not be worthwhile. Inversely, since there is little data on the prevalence of cross border public procurements, it is hard for the designers of eProcurement systems to calculate as well if it is worthwhile to integrate support for foreign signature solutions.
Transparency	No	/
Market challenges	Yes	As the diversity in the eSignatures market shows (with regard to tokens, as well as the quality and legal qualification of the signatures), no common market solution has emerged yet.
Distribution of benefits	No	/

Gaps and barriers with respect to eSignatures

Via mainly the CROBIES and PEPPOL projects, some of these solution models are now being tested and/or directly implemented. It can be expected that these will have a significant positive impact on the interoperability of qualified electronic signatures in the future. Given the focus of the Action Plan on qualified signatures, this outcome appears to match the 2004 policy priorities. However, a few challenges still remain.

Firstly, it should be noted that the current European framework is suitable to establish interoperability for qualified signature solutions, but much less so for non-qualified signatures. This is a simple consequence of the approach taken by the Signatures Directive, which established clear norms, requirements and legal consequences for qualified signature solutions, but not for others. This regulatory approach is not a clear match with the actual situation in the Member States, as many Member States do not have a strong emphasis on qualified signature solutions in their eProcurement applications. Thus, even if perfect interoperability of qualified signatures can be reached at the European level, it should be acknowledged that this will not conclusively address the interoperability challenges for all other signature types used in public procurement.

Approaches like those being tested in PEPPOL have a broader scope, and also support interoperability of non-qualified signature solutions. However, PEPPOL is only a pilot project, and to deploy this approach in a permanent operational form, more thought will need to be given to the sustainability of the project outcome. This will likely require a revision of the European eSignatures framework (with respect to regulation, standardisation and trust model), in order to establish a comprehensive solution model.

8 Impacts of the Action Plan

8.1 Introduction

In the chapters above, we have examined each aspect of eProcurement and the related measures prescribed by the Action Plan in detail, including an assessment of whether the situation in 2010 corresponds to the vision of the Action Plan, and to what extent there appears to be a link between the measures of the Action Plan and the current eProcurement status.

In this eighth chapter, we aim to bring these separate strands together into a comprehensive evaluation of the Action Plan's impact. The basis for this will be the three objectives that form the pillars of the Action Plan. In the sections below, we will examine whether the Action Plan has been able to achieve the objectives, whether the current result corresponds to the Action Plan's vision, and to what extent.

Individual measures will not be examined in the sections below. For an assessment of each of the 31 specific measures, we refer to the corresponding section of the report above, or to the systematic overview in Annex B.

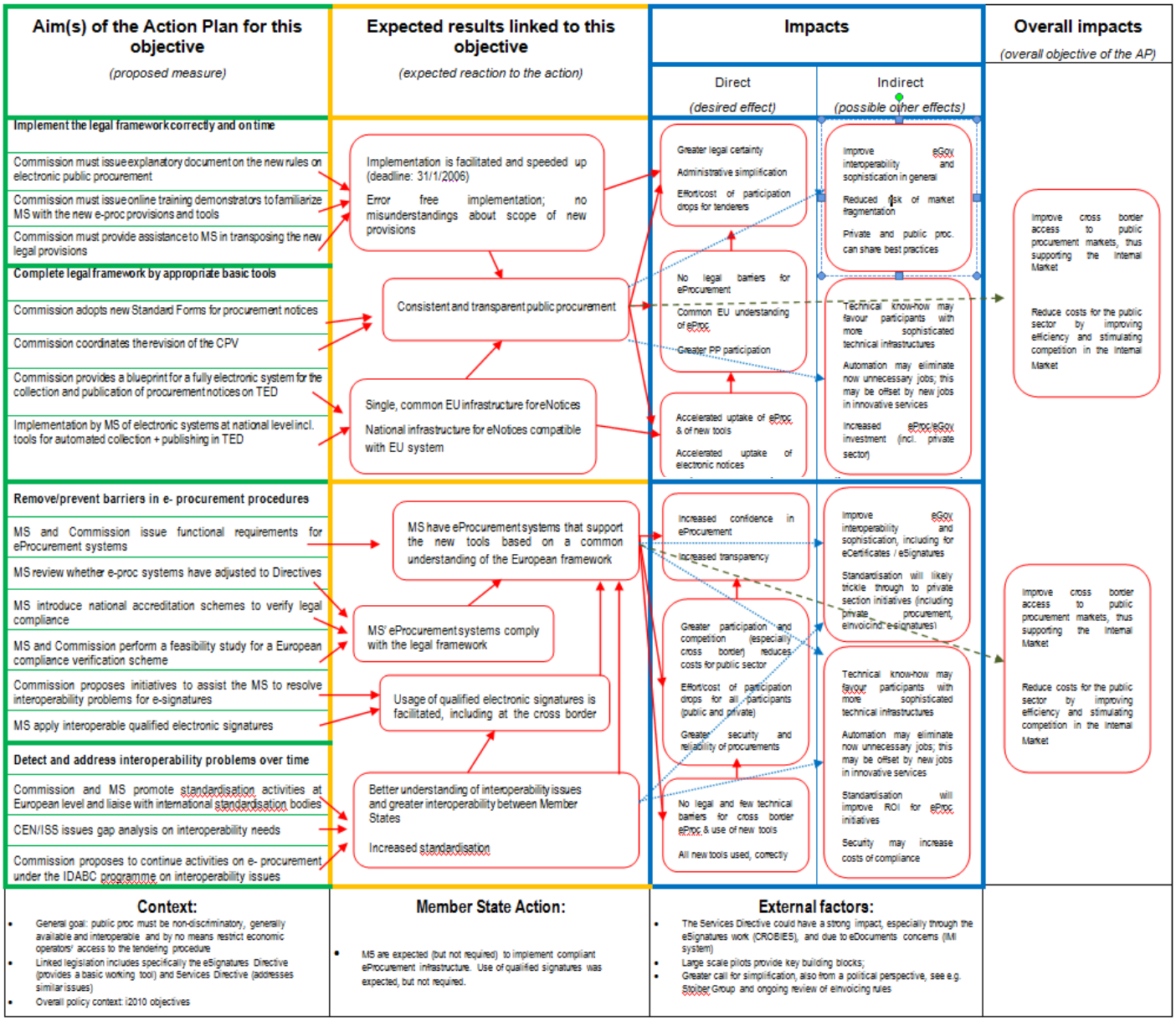
8.2 Objective 1: has the Action Plan contributed to ensuring a well functioning Internal Market in electronic public procurement?

8.2.1 What was the Action Plan's vision for this objective?

The Action Plan's measures for this objective aimed to achieve four clusters of goals:

- Implement the legal framework correctly and on time
- Complete legal framework by the appropriate basic tools
- Remove/prevent barriers in eProcurement procedures
- Detect and address interoperability problems over time

This was represented as follows in the intervention logic:



As indicated in the analysis of the intervention logic in the introductory sections of this report, the corresponding vision behind these goals was that the Action Plan should:

- Facilitate and speed up the error-free implementation of the Directives at the national level;
- Facilitate and speed up the establishment of national eProcurement infrastructure;
- Increase the take-up of eProcurement in practice;
- Avoid or mitigate in as far as possible any barriers to cross border eProcurement.

The measures forwarded by the Action Plan to achieve this vision were relatively 'light touch', aiming to put in place the necessary basic building blocks for eProcurement (both at the national and European level), either by creating these building blocks (legal and infrastructural) or by eliminating/mitigating barriers to their use. The actual usage of eProcurement tools by the Member States is not mandated at any point. The approach is thus strongly oriented towards creating the possibilities, opportunities and incentives at the national level, rather than forcing the usage of eProcurement. Four large groups of measures can be distinguished within the first objective:

- A set of measures aimed at creating a common awareness, know-how and understanding within the Member States of eProcurement possibilities;
- A set of measures to directly enable the use of eNotices;
- A set of measures to ensure that eProcurement systems comply with the requirements of the Directives;
- A set of measures to improve cross border interoperability, on the one hand by promoting eSignatures (notably qualified eSignatures), and on the other by encouraging the identification and follow-up of interoperability issues through IDABC and interactions between Member States and with standardisation bodies.

8.2.2 What impact was expected?

The Action Plan did not aim to make the use of eProcurement at the national level mandatory, nor was its ambition to eliminate all interoperability barriers. Rather, the expected impact was more realistic, as shown in the intervention logic above:

- Member States should ensure the deployment of operational eProcurement infrastructure (at a greater rate than in 2004), specifically with respect to eNotices.
- Economic operators should use eProcurement in practice (at a greater rate than in 2004).
- Cross border eProcurement should be possible from a legal perspective, and technical barriers should be eliminated as far as possible. No new legal barriers should be created.
- This should lead to greater simplification and legal certainty, lowering the cost of participation in eProcurements.

Collectively, the envisaged increased use of eProcurement should have the overall impact of improving cross border access to public procurement markets, thus supporting the Internal Market, and reduce costs for the public sector by improving efficiency and stimulating competition in the Internal Market.

8.2.3 Did the impact materialize?

The impact of the envisage measures has been examined in greater detail in the chapters above, and can be summarised as follows.

With respect to legal barriers - timely and correct implementation

11 out of 27 Member States (41%) have transposed the Directives on time, including the two most recently joined Member States Bulgaria and Romania, whose transposition acts entered into force within their specific deadline of 1 January 2007. All three EEA countries adapted their regulatory framework after the 31 January 2006 deadline, and Liechtenstein also exceeded its December 2007 deadline.

With respect to timeliness, most countries have thus missed their applicable deadlines. It should however still be acknowledged that transposition took notably shorter than the seven years flagged in the 2004 Assessment with respect to the preceding European framework. Thus, while transposition was by and large not timely in the strictest sense, the delays were generally limited and at any rate significantly smaller than with similar efforts in the past. While the Action Plan's goals of ensuring the timely transposition of the regulatory framework were thus not entirely successful, the result is still largely positive.

As to the correctness of the implementation, the main reliable information source available to determine this point is the overview of infringements proceedings initiated against the Member States[268]. So far, no national transposition or eProcurement system has been examined for suspected non-compliance.

With respect to this impact, the Action Plan appears to have been relatively successful.

With respect to operational eProcurement infrastructure

The 2004 Impact assessment showed that notable eProcurement systems were operational in 16 out of 25 Member States. Looking at the 2010 overview in the chapters above, at least rudimentary systems were reported to exist in all but two countries: Greece and Liechtenstein. Thus, 26 out of 27 Member States now have eProcurement systems in place, which is a very significant step forward.

Looking at the number of major eProcurement systems in place, this evaluation created a shortlist of 129 sites (22 CPBs, 81 portal sites and 26 platforms). The number is comparable to the findings of the 2009 DG INFSO 8th Benchmark Measurement, which identified 134 sites; thus, the number is likely plausible. This is a roughly fourfold increase of available major eProcurement systems compared to the 36 systems identified in 2004. Clearly, the overview of the present evaluation report focuses on the

[268] See http://ec.europa.eu/internal_market/publicprocurement/infringements_en.htm

main known eProcurement sites and is therefore not comprehensive. However, this was also the case in 2004, so that the identified trend appears to be valid.

Thus, the availability and maturity of national eProcurement infrastructure has certainly increased in the past six years. This growth seems to be at least in part linked to the Action Plan, and specifically its emphasis on the adoption of national action plans. In 2004, the Impact Assessment noted that "the majority of the Member States have developed a strategy for the introduction of operational e-public procurement (21 countries[269]), and that a majority of the Member States have set an overall objective for the introduction of operational e-public procurement (23 countries[270])". Given that at this time eProcurement infrastructure is available in 26 out of 27 Member States, planning seems to have been effective.

However, as an important nuance, it should be noted that the available infrastructure is not uniform in its functionality: some sites only support unilateral phases (eNotification and eAccess), whereas others also support eSubmission and/or post-award phases. eProcurement is not addressed in all countries as a unified global process that must be supported in its entirety by a single system. This has led to diverse situation when the availability of eProcurement is examined on a phase by phase basis: while the unilateral eNotification and eAccess phases are almost omnipresent (30/32 countries) in primary eProcurement systems, this is much less the case for eSubmission (25/32), and even less for advanced modalities such as eAuctions (9/32) and DPS (1/32), or for post award phases such as eOrdering (18/32), eInvoicing (6/32) and ePayment (4/32). For this reason, it is not meaningful to say that eProcurement is supported or mandatory in any given country without qualifying precisely what is meant. This diversity in approaches – with some country opting for an all-encompassing approach and others choosing for more piecemeal implementations – does not appear to have been recognized in the Action Plan.

Globally, it seems fair to say that the Action Plan has been able to improve the availability of eProcurement systems, but that functionalities vary widely from country to country. In pre-award phases the impact has been substantially more positive than with respect to post-award phases.

[269] Portugal, Slovenia, Lithuania, Sweden, Latvia, Germany, Czech Republic, Italy, Ireland, Luxembourg, Finland, Belgium, United Kingdom, Hungary, Malta, Cyprus, Poland, France, Greece, Denmark and Spain

[270] Portugal, Slovenia, Lithuania, Sweden, Latvia, Germany, Czech Republic, Italy, Ireland, Luxembourg, Finland, Belgium, Austria, Slovakia, United Kingdom, Hungary, Malta, Cyprus, Poland, France, Greece, Denmark and Spain

With respect to usage in practice

Apart from improving the availability of eProcurement infrastructure, the Action Plan also aimed to stimulate usage in practice. The impact in this respect differs from phase to phase, and from tool to tool. Summarising the key findings of the chapters above with respect to the main phases and tools emphasized by the Action Plan:

- **eNotification:** based on official TED statistics, usage of eNotification has risen significantly in most countries between 2004 and 2010, with an average EU uptake percentage of 90,2% in 2009, meaning that 90,2% of notices sent to the OJEU are sent in a structured electronic format. The largest increase was noted in 2005-2006 with the adoption of the new standardised forms. Eight leading countries submit over 95% of notices in a structured electronic format, and four of these have a near-100% status (Lithuania, Malta, Romania and Slovenia all submit more than 99,5% of their notices electronically). A small group of countries still lag behind: Latvia and Estonia fall significantly short of 15%. Globally however, the Action Plan's impact appears to have been very significant and positive with respect to eNotification.
- **eSubmission**: as a bilateral phase, eSubmission is noticeably more complex than eNotification, and uptake therefore requires more effort and investment both from the contracting authorities and economic operators alike. None the less, several countries have been able to implement successful business cases, generally following one of three models:
    - CPBs using framework agreements for commodity purchases (supplies and services). Using this approach, contracting authorities can build on the expertise of CPBs to organise their procurements in a flexible way (since framework agreements have already been concluded by the CPB) and without the traditional disadvantage of lower competition within a framework agreement (since the CPB can maintain framework agreements with a larger number of suppliers). Essentially, this approach applies an outsourcing model to public procurements. Where economic data is available, this approach appears to be cost effective, and several countries (including e.g. Sweden, Austria, the UK, Italy, France, Finland and Norway) have made this approach a staple of their public procurement strategy.
    - The development by a public body of shared eProcurement infrastructure which a more or less defined group of contracting authorities can use to conduct their own procurements without a CPB being involved. This infrastructure can be developed at the national, federal or regional level, depending on the administrative organisation and policy preferences of a country. This allows a contracting authority to organise eProcurements without having to implement their own infrastructure, but while keeping full control over the process as a contracting authority (which is not the case with a CPB based model). Examples of this approach can be found in e.g. Belgium, Cyprus, Hungary, Ireland, Italy, Luxembourg, the Netherlands and Romania.
    - Decentralised models in which contracting authorities can select from a wide range of eProcurement solution providers which meet predefined criteria (either technical criteria or actual accreditation). This approach is most often found in countries with stronger regional/local autonomy or public procurement purchasing power (e.g. Austria, France, Germany, Spain, and the UK) or where there is a stronger tradition of public-private collaboration (e.g. Sweden, Finland, Norway, Portugal and Poland). In the latter case, eProcurement systems are commonly provided as private sector platforms, which can either be implemented locally by contracting authorities or which can be used in a 'software-as-a-service'-model.

Obviously, mixed models exist in practice: e.g. both Austria and Sweden have CPBs (model 1) and private service providers (model 3). It is difficult to compare the effectiveness of each of these models, due to the lack of comparable information on investment and returns.

However, based on available quantitative information (such as those of the country reports collected for the purposes of this study and ePractice.eu project descriptions), the first model (CPBs using framework agreements) appears to be most successful in ensuring higher quantity take-up and in realising cost savings. The second model in contrast seems to suffer in most countries from being recently implemented and not fully finalised yet. Of the list of examples mentioned above (Belgium, Cyprus, Hungary, Ireland, Italy, Luxembourg, the Netherlands and Romania), eSubmission has only recently become available in Belgium, Cyprus, Hungary and Romania, and not at all in Luxembourg and the Netherlands (which only support eAccess and eSubmission at this time[271]), making Ireland and Italy the main successful examples. The third model on the other hand appears to be successfully used mainly for regional or local procurements, which are individually smaller in scale (although collectively they can represent a higher portion of procurements than the national/federal level, as is e.g. the case in France).

Globally, while eSubmission use has increased in the Member States, it is not clear to what extent this can be attributed to the Action Plan rather than to natural development of the state of the art. In 2004, the main countries offering eSubmission functionalities were Austria, Denmark, Finland, Germany, Ireland, Italy, Poland, Spain, Sweden and the UK. While the number of countries where eSubmission is available has more than doubled to 25 out of 27, this list of ten countries is still relatively representative of the leaders within the Member States, with the main additions to this list being France and Portugal. These countries are the main Member States that can provide significant uptake figures, whereas for the others data is limited or unavailable, often due to the fact that their eSubmission systems have not yet been available for a significant length of time.

In that respect, there is little objective indication of the Action Plan's ability to significantly impact eProcurement uptake. Part of this may be due to the fact that the experiences around the first successful model identified above (CPBs operating based on framework agreements) had not yet matured at the time of the Action Plan's adoption. Indeed, the Action Plan does not mention CPBs (except through an oblique caution *against* excessive or abusive centralisation). The trend towards aggregation of procurements, which currently seems to play a very significant part in the European procurement market, had not yet materialised to the same extent in 2004, which is likely the reason why it was given short shrift in the Action Plan.

- **eInvoicing:** the chapters above have shown that eInvoicing is used in a limited amount of countries, notably the Czech Republic, Denmark, Finland, Norway, Sweden and Spain, which is still limited, but a notable increase over the single system reported in 2004.
- **ePayment:** while there do not appear to be any real barriers to its use in the European Union, this is a feature which is only rarely reported as being supported in eProcurement systems. This may be due to the fact that implementation of ePayment modules in the absence of other post-award phases (notably eInvoicing) offers only limited added value, since automated processing would at any rate not be possible in the absence of eInvoicing.
- **eAuction:** compared to the 2004 Impact Assessment, there is clear progress, as the number of countries using eAuctions in a systematic/frequent way has risen from 2 to 7, with 4 more using them infrequently or regionally. Furthermore, for the non-users (who still constitute a sizable majority of 21/32 countries or roughly two thirds), it should be noted that eAuction systems or modules were reported to be under development in six other countries. While exact statistical data is rare, the available information suggests that eAuctions can indeed realise significant cost savings, with figures of 10-20% being commonly quoted. In that

[271] For the Netherlands, this comment refers to the Tenderned site. Other sites are available in the Netherlands which do support eSubmission (see Annex VI), but these are specific to local governments or specific sectors.

respect, eAuctions seem to be achieving their goal of increasing competition and cutting costs, which explains why they are relatively popular with contracting authorities and policy makers. However, no equivalent advantage seems to exist at the economic operator's side. Here, the use of eAuctions implies additional effort and shrinking profit margins, which reduces the appeal of public procurements. Thus, eAuctions may have negative longer term side effects.

- **Framework agreements:** as was already noted above, framework agreements are used frequently when relying on the intervention of a central purchasing body. While this is generally reported as being an efficient approach, it also closely mirrors the concern in the Action Plan that there might be "potential excessive or abusive centralisation of purchases, inappropriate use of electronic auctions and preferences for closed purchasing systems (e.g. framework agreements) over open systems." However, the Action Plan was mainly concerned over this problem arising due to the possibility of cancelling out the benefits from increased efficiency in a closed system. To the extent that quantitative information is available, experiences with framework agreements appear to be largely positive; thus, there appear to be little to no indicators of the negative impacts of decreased competition through inappropriate use of framework agreements when relying on CPBs. Apart from this context however, available statistics (notably the TED data included above) suggest that framework agreements are substantially used to set up a framework with only a single economic operator, which would inevitably harm competition. However, the available quantitative data is inconclusive on the exact magnitude of this negative impact: while framework agreements are generally perceived as beneficial to efficiency, the impact of decreased competition is less clear. More transparency on this point (i.e. pricing comparisons between open and framework procurements) would be desirable.
- **DPS:** based on the analysis of country profiles and TED statistical data, it seems that DPS have failed to find significant uptake in the surveyed countries. Contrary to framework agreements, they do not yet take an important strategic role in national procurement strategies, nor do they seem to account for a substantial part of the European eProcurement market. Globally, there seems to be much uncertainty about their precise place and role in the European eProcurement landscape. It is possible that CPBs and their use of framework agreements (as described above) play a role in this, since contracting authorities can leverage some of the same benefits as expected of a DPS (namely the larger number of economic operators combined with more flexible formal requirements) without having to actually implement a DPS. In that respect, the trend towards aggregation of common purchases via CPBs may have undermined part of the market appeal of the DPS.

Globally and in summary, the Action Plan seems to have had a significant beneficial impact on the use of eNotices in practice, but much less so on eSubmission and subsequent phases. It should be recognized however that improving the uptake of specific phases and tools was not an explicit goal of the Action Plan, which was rather phrased in terms of removing barriers. At least at the national level, barriers to using eProcurement have largely been removed. The primary challenge has become the assurance of significant uptake, including by identifying optimal use cases and creating incentives for stakeholders, as summarised above.

With respect to cross border barriers

One of the main goals of the Action Plan was to eliminate barriers to cross border eProcurement. Within the first objective, measures focused mainly on promoting eSignatures (notably qualified eSignatures), and on encouraging the identification and follow-up of interoperability issues through IDABC and interactions between Member States and with standardisation bodies.

While the relevant measures have been executed, the resulting impact was not achieved. eSubmission currently relies on two possible options: requiring the use of username/password authentication following prior registration, and the use of PKI based authentication systems (i.e. supported by cryptography using encryption certificates). The Action Plan targeted mainly the latter systems.

In practical terms, username/password based systems (as currently used mainly in Ireland and the UK currently pose no interoperability challenges other than the completion of the registration process (which may be complicated due to language barriers or the need to provide information which is only available at the national level). PKI systems on the other hand are currently almost universally[272] unable to accept foreign solutions, meaning that foreign economic operators will be unable to use eSubmission unless they can obtain a PKI solution issued in the country in which they wish to submit an offer.

Given that the goal was to eliminate cross border procurement barriers, the Action Plan's emphasis on PKI based systems (specifically those using qualified signatures) with retrospect appears to have been an insufficiently pragmatic approach. While it may have been reasonable to assume in 2004 that significant interoperability progress could be made with respect to these signatures in the medium term, this impact has so far not materialised, and thus electronic signatures remain possibly the largest barrier to cross border eProcurement at this time.

8.2.4 In conclusion

Based on the overview above, a few general conclusions on the impacts of the measures under this objective can be made. Firstly, it is clear that the Action Plan was effective in a number of respects:

- The legal framework has been implemented relatively quickly, certainly in comparison with the preceding Directives. No new legal barriers have been identified; and in this respect, the Action Plan has succeeded.
- eProcurement policies were clearly driven at the national level via the encouragement of action plans. This in turn drove the development of infrastructure, and put eProcurement on the political agenda. The fact that infrastructure availability has increased and that uptake in most countries has also advanced significantly is no doubt at least partly the Action Plan's merit.
- Specifically with respect to eNotification, the approach taken in the Action Plan was a clear success. The infrastructure is in place and used to a very significant extent by most countries.

None the less, some measures within this objective proved to be largely ineffective as well, and still remain to be addressed. This is notably the case with respect to cross border eProcurement, where a number of important interoperability barriers remain. eSignatures and eDocument standardisation are key examples of this. A number of reasons can be identified:

[272] As was discussed in chapter 4, a few countries have implemented limited interoperability solutions, notably in Austria and Norway.

- The Action Plan contained too great an assumption of technological progress in ancillary areas like eSignatures, eInvoicing and eCatalogues. The impact of standardisation on these topics hasn't progressed much, meaning that they still cannot be used effectively in cross border scenarios. Progress in this area could likely have benefited from more forceful action (e.g. eSignatures initiatives in the Services Directive, or eInvoicing work within e-PRIOR/PEPPOL, as discussed above).
- Accessibility and administrative simplification play a larger role in stimulating eProcurement than foreseen in the Action Plan. The only really cross border accessible systems are the ones that kept things very simple (username/password based systems), and contrary to concerns, no notable security incidents have been observed.
- Strategically, it can be argued that the Action Plan did not consider the importance of common eProcurement infrastructure sufficiently. Central purchasing bodies (which have taken a significant role in supporting eProcurements in many countries) are not mentioned at all in the Action Plan. Globally, it might have been more effective to include measures in the Action Plan that would have required the periodic identification by the Member States of their most effective eProcurement approaches, e.g. in terms of the numbers of procurements organised, participating contracting authorities/economic operators, or financial impacts. This would have allowed an easier and pragmatic identification of successful approaches, and would also have forced Member States to more systematically keep track of the effectiveness of their efforts.

Globally, while the impact of the Action Plan on the first objective has been positive, it cannot be qualified as a uniform success. Notably, the litmus test forwarded by the Commission Staff Working Document annexed to the Action Plan ("any business in Europe with a PC and an internet connection can participate in a public purchase conducted electronically") has been failed by virtually all countries, except those that have based their approach entirely on simplicity and pragmatism. While this may not have been considered a desirable future vision by many Member States in 2004, it seems that such a pragmatic approach – even if only applied temporarily while more sophisticated solutions matured – could have had a greater impact on the European eProcurement internal market. As a consequence, the desired impact of greater simplification and legal certainty, and lower costs of participation have materialized mainly with respect to national procurements, but much less so for eProcurements, where accessibility is in most cases impaired rather than improved in comparison with traditional procurements.

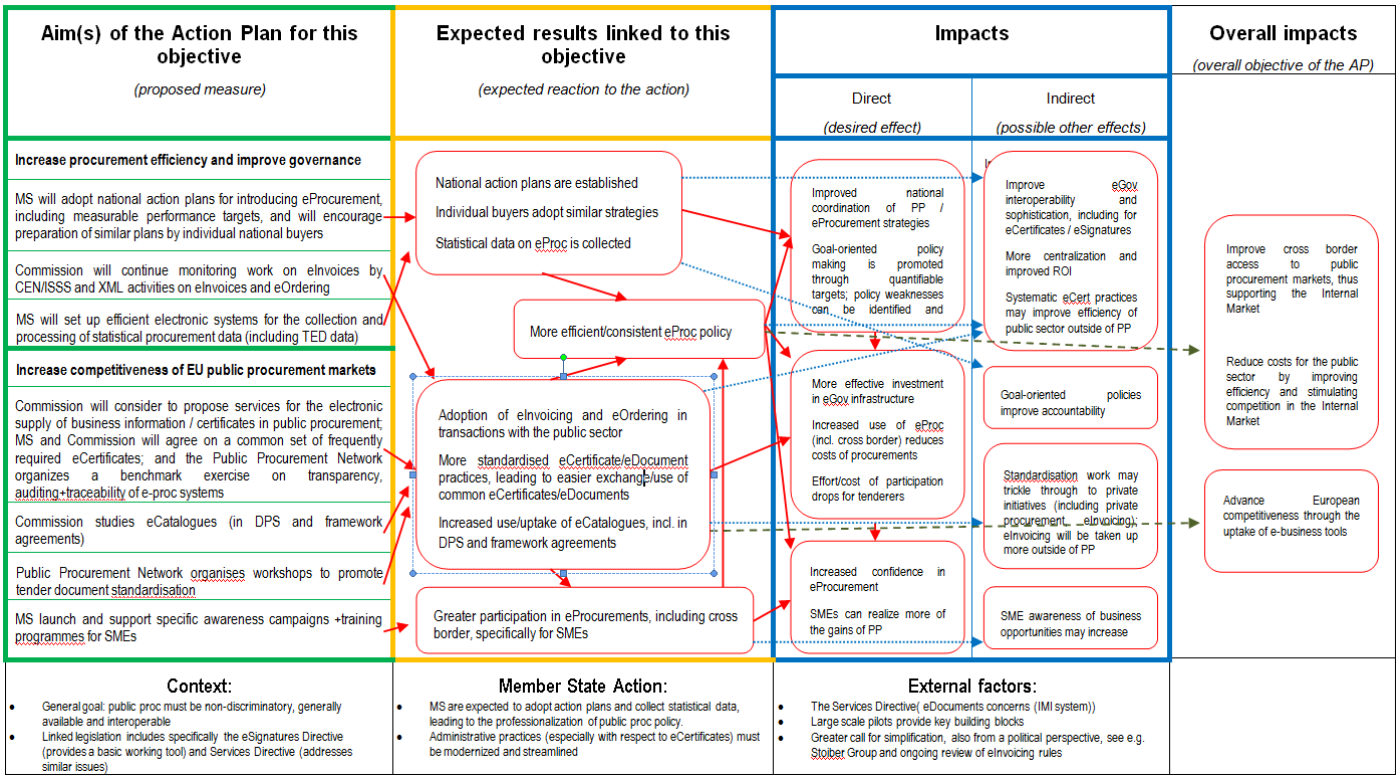
8.3 Objective 2: has the Action Plan improved procurement efficiency, governance and competitiveness?

8.3.1 What was the Action Plan's vision for this objective?

The Action Plan's measures for this objective aimed to achieve two clusters of goals:

- Increase procurement efficiency and improve governance
- Increase competitiveness of EU public procurement markets

This was represented as follows in the intervention logic:



As indicated in the analysis of the intervention logic in the introductory sections of this report, the corresponding vision behind these goals was that the Action Plan should:

- Lead to more efficient and consistent eProcurement policy making at the national level;
- Enable the cross border use of electronic documents such as eAttestations, eInvoices, eOrders and eCatalogues;
- Improve participation of SMEs in public procurements.

The measures forwarded by the Action Plan to achieve this vision aimed to put in place the necessary preconditions to allow these impacts to materialize:

- A set of measures aimed at improving policy making via action plans and systematic statistical data collection;
- A set of measures to chart eDocument practices and to support standardisation work for some of them. It should be noted that these standardisation measures were 'light touch': the Commission was called upon to 'monitor' eInvoicing standardisation work, to 'propose the continuation of XML activities undertaken in 2003-2004 on eInvoices and eOrdering under IDABC', and to propose 'launching a study on eCatalogues in dynamic purchasing systems and electronic framework agreements'. Thus, no new standardisation goals were made explicit.
- A set of measures to ensure that eProcurement systems comply with the requirements of the Directives;
- A single measure to launch and support specific awareness campaigns and training programmes targeted at SMEs at national and regional level.

8.3.2 What impact was expected?

Several key impacts were expected, as indicated in the intervention logic above:

- Through the adoption of action plans, the deployment of eProcurement and its take-up should accelerate (as discussed above). Furthermore, Member States were to encourage their 'most powerful' individual buyers to also adopt their own action plans, to ensure their participation.
- Collection of statistical data should permit target driven policy making and effectiveness evaluation; this should favour goal-oriented policy making.
- eInvoicing, eOrdering, eCatalogues and eAttestations should become more standardized and, including at the cross border level, thus leading to more effective investment and greater cross border eProcurement participation.
- SMEs should be able to realize more of the gains of eProcurement.

Collectively, the envisaged increased use of eProcurement should achieve the overall impact of improving cross border access to public procurement markets, thus supporting the Internal Market, and reduce costs for the public sector by improving efficiency and stimulating competition in the Internal Market. In addition, European competitiveness should be advanced through the uptake of e-business tools such as eInvoices and eCatalogues.

8.3.3 Did the impact materialize?

The impact of the envisage measures has been examined in greater detail in the chapters above, and can be summarised as follows.

With respect to action plans

The role of action plans adopted by Member States has already been discussed under the first objective above: national action plans seem to have been effective in improving the availability and maturity of national eProcurement infrastructure, but at this point in time, there is no longer a strong correlation between the adoption of national action plans and the progress made in developing eProcurement infrastructure or uptake. All possible combinations have been identified in the chapters above: countries without action plans or an advanced infrastructure (e.g. Greece), countries with action plans but without advanced infrastructure (e.g. Turkey), countries with an advanced infrastructure but without action plans (e.g. UK), and countries with both advanced infrastructure and action plans (e.g. Ireland). Thus, it seems that action plans are important in supporting the deployment of national infrastructure (as supported by the observation that Greece and Liechtenstein are the only surveyed countries without notable eProcurement infrastructure, and that they are among the countries without action plans), but less so in promoting their use once an infrastructure has been established.

It should also be noted however that current action plans do not always meet the requirements of the Action Plan: only 18 out of 32 countries have actual plans containing "measurable performance targets" as required by the Action Plan, with 14 countries having either no action plan or only loosely defined high level policy declarations. In that respect, the Action Plan does not appear to have been followed up at the national level in a significant number of countries.

The Action Plan also called on Member States to stimulate powerful national buyers to adopt similar action plans for introducing electronic public procurement. No such action plans have been identified in the course of the present study. Thus, there are no indications of Member States taking this point of the Action Plan into consideration to a significant extent.

Globally, while national action plans have been a positive influence to deploy/develop national infrastructure, their current impact as policy supporting tools appears to be limited.

With respect to statistical data collection

The chapters above showed that data collection is still in its infancy in most Member States, despite the Action Plan calling upon Member States to take steps in this respect. Good practices were identified in 7 countries, with France being the main Member State that is systematically collecting comprehensive statistical data. Globally, efforts in this area appear to have been too low within most Member States: statistical data is scarce, generally limited in scope, and not comparable between countries. As a result, systematic analysis of the effectiveness of national choices is complicated. This issue should be remedied to improve the effectiveness of policy making, both at the national and European level.

With respect to use and standardisation of key eDocument types

Four specific eDocument types were targeted by the Action Plan: eAttestations, eInvoices, eOrdering and eCatalogues, in a slightly different way. The impact can be summarised as follows:

- **eAttestations**: the Action Plan called for the Commission to establish services for the electronic supply of attestations for implementation under the IDABC programme, and aimed to build a consensus on a common set of frequently required eAttestations for use in eProcurement procedures. The underlying assumption was that eAttestations would become increasingly common in eAttestations. However, the chapters above have shown that this assumption proved incorrect. The main approach used by the surveyed countries to handle the problems related to attestations is to install electronic procedures that eliminate or reduce the need for attestations, either in a paper or electronic form. The use of new separate official eAttestations in public procurements on the other hand is virtually non-existent. Thus, the impact of the Action Plan on eAttestations has been limited, since the underlying assumption has not materialised. With the benefit of hindsight, a more pragmatic approach based on self-declarations of compliance as a provisional conclusion might have been a more realistic avenue.
- **eInvoices/eOrdering**: the Action Plan called for monitoring the work on eInvoices by CEN/ISSS and continuing XML activities undertaken on eInvoices and eOrdering. With respect to eInvoices, this work is now converging around UBL based standardisation work: most major identified deployments in the Member States are built on this foundation, with others following in this direction as well, and UBL is also the starting point for European

projects such as PEPPOL and e-PRIOR. However, so far, eInvoicing successes in practice remain limited to the strictly national level. The same applies to eOrdering, where XML based standardisation work is progressing, but use in practice is still centred around national variations, making cross border use impossible in practice. Apart from the standardisation issues, legal challenges also remain for eInvoicing. It was noted to be particularly complex to ensure that an eInvoicing solution which is compliant with legislations in a specific Member State would also satisfy the requirements in a different Member State. Thus, both legal and technical barriers to the cross border use of eInvoices remain.

Matching this status against the vision of the Action Plan, it is clear that standardisation initiatives have advanced, but no convergence has materialised in practice yet with respect to eOrdering and eInvoicing. This is not a failure with respect to eProcurement alone: even outside of an eProcurement context, uptake of eInvoices has been disappointing. None the less, given the relative success of eInvoicing in the Scandinavian countries based on a common standard, it seems that a more forceful approach in this area could have been more productive. This is especially true considering that convergence between existing standards is a very slow process, which is not likely to spontaneously result in a common standard in the shorter term.

- **eCatalogues:**. there is no widespread use yet of standards like UBL (Universal Business Language from OASIS) or UN/CEFACT XML Schemes. Some countries have partly implemented these standards (mainly UBL and variations on this), but there is as of yet very little interoperability in this domain. As a result, investments in this area by economic operators do not yet provide an optimal return (since catalogues need to be recreated for each new country, or even for each new system within a country), which is a strong deterrent for their uptake. The Action Plan has had little impact on this point.

With respect to SME participation

Available data indicates that several countries have adopted policies to stimulate the participation to encourage the participation of SMEs, with notable specific policies having been identified in Ireland, Italy, France, and the UK (particularly Scotland). Based on the analysis of these systems where statistical data is available, the implementation of best practices can result in a significant uptake with SMEs of eProcurement tools, as witnessed e.g. by the Italian and Scottish good practice examples above. However, the success rate of SMEs (and particularly micro enterprises) appears to be marred, mainly due to the difficulty for these undertakings to find the necessary resources to perform public sector contracts (rather than the difficulty of participating in procurements as such). In that respect, it is not surprising that key best practices relate to breaking down procurements into lots wherever possible, or otherwise encouraging participating with or between SMEs in the preparation of joint offers. This finding is however equally valid for eProcurements as for traditional procurements.

In the examined countries, the policies have been quite successful in getting SMEs to use eProcurements; thus, participation can certainly been stimulated successfully by targeting SMEs directly. Winning rates can also be influenced favourably by these policies; e.g. the Italian MEPA reports that 97% of registered users are SMEs, and that they obtain roughly 90% of MEPA spending[273] (as compared to a known[274] 2005 Italian average of 49% of public procurement budget awarded to SMEs); similarly, French figures for the period between 2006-2008 are available from the

[273] Source: « The determinants of suppliers' performance in eProcurement: evidence from the electronic public administration's marketplace (MEPA), Gian Luigi Albano, Federico Dini, Roberto Zampino and Marta Fana; see http://www.consip.it/on-line/Home/Ricercaesviluppo/UfficioStudi/Ricercheincorso/documento4679.html

[274] See http://ec.europa.eu/enterprise/newsroom/cf/itemshortdetail.cfm?item_id=3376

Resah-idf (the *Réseau des Acheteurs Hospitaliers d'Ile-de-France* – Network of Hospital Buyers of the Ile-de-France region), which identified an increase of contracts won by SMEs in the amount of 72% (7,2 M€) in the period 2006-2008[275]. However, it is not clear if these trends also exist at the national level, as there is no data available on this point. The Action Plan thus has had a clear beneficial impact in the countries which have chosen to follow up on the measure, which does not appear to have been done in a majority of them.

8.3.4 In conclusion

Based on the overview above, a few general conclusions on the impacts of the measures under this objective can be made:

- As was already noted above, action plans at the national level have clearly helped in putting eProcurement on the political agenda, which has certainly played a role in improving the availability of eProcurement. Uptake on the other hand seems less affected by action plans, and requires continuous encouragement in practice.
- In that respect, the other policy oriented measures foreseen in the Action plan have not been followed up sufficiently in practice, and therefore did not have a clearly identifiable impact. Powerful buyers did not adopt action plans, and statistical data collection with respect to eProcurement (a prerequisite for detailed impact assessments and goal-oriented policy making) has largely been ignored at the national level. This impedes objective and well reasoned policy making, as the effectiveness of specific solutions cannot be compared or assessed. Because of this, it also remains difficult to determine with any degree of certainty if there really is a strong business case for cross border eProcurement. As a result, this policy area is still largely driven by (reasonable) assumptions.
- While international standardization efforts of key eDocuments (eInvoicing, eOrdering, eCatalogues and eAttestations) have progressed, this has had very little beneficial impact at the cross border level. Successful use cases exist, but are limited to purely national instantiations of international standards, which are almost never interoperable across borders. The desired impact has failed to materialize on this point.
- As for SMEs, it seems that not all countries have taken action to improve their participation. Where this has been done, SME participation has increased, although winning rates are so far not strongly affected. The desired impact of ensuring that SMEs are be able to realize more of the gains of eProcurement has thus only partially been reached.

[275] See http://www.pactepme.org/docs/pacte/gc/RESAH-IDF/bilan_2006-2008.pdf

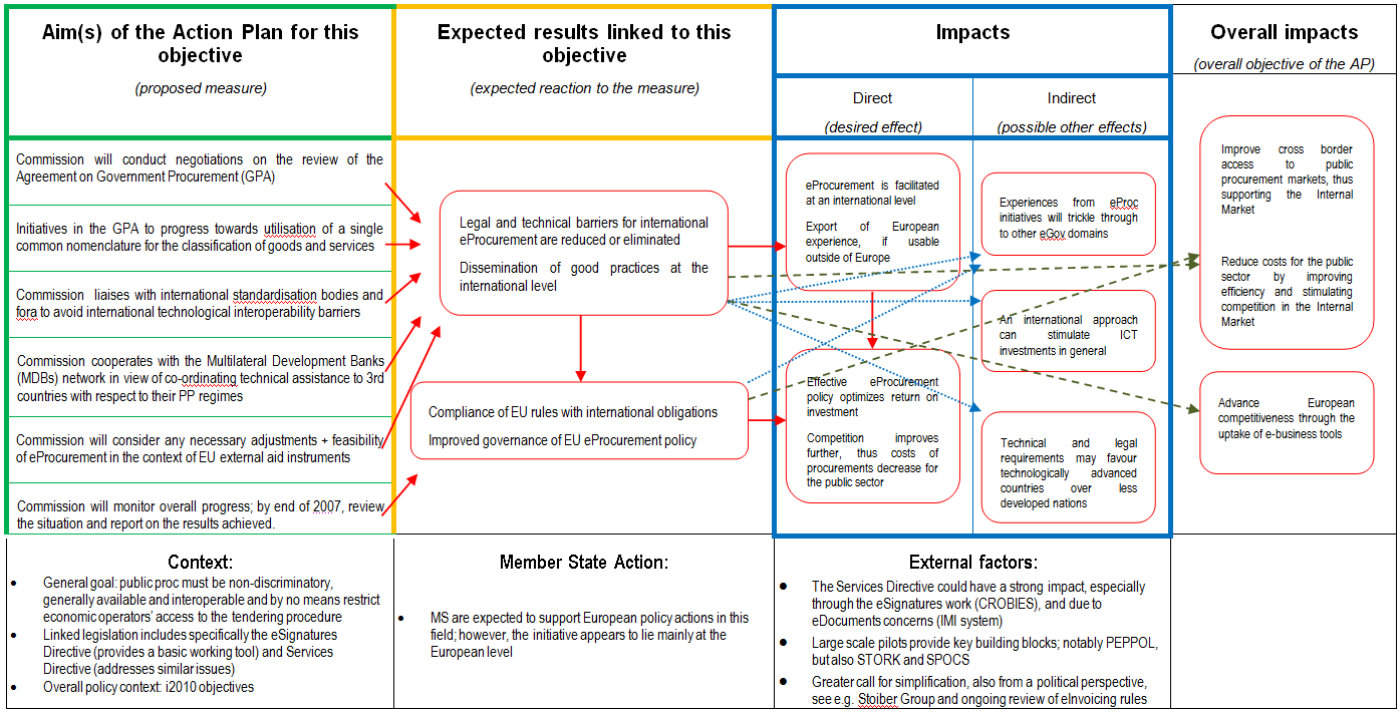
8.4 Objective 3: has the Action Plan contributed to the creation of an international framework for electronic public procurement?

8.4.1 What was the Action Plan's vision for this objective?

The Action Plan's proposed a set of five measures for this objective aiming to build on existing policy and standardisation work, and to create an opportunity to disseminate any European good practices. As indicated in the analysis of the intervention logic in the introductory sections of this report, the corresponding vision behind these goals was that the Action Plan should:

- Reduce or eliminate legal and technical barriers for international eProcurement
- Promote the effective dissemination of good practices at the international level

This was represented as follows in the intervention logic:



The measures forwarded by the Action Plan reflect this vision rather directly:

- A set of measures aimed at updating the international legal framework, specifically via the WTO Agreement on Government Procurement (GPA);
- A measure to reduce technical barriers by liaising with international standardisation bodies;
- A set of measures supporting good practice dissemination via the Multilateral Development Banks (MDBs) and third countries via EU external aid instruments.

8.4.2 What impact was expected?

Several key impacts were expected:

- The elimination/reduction of barriers should facilitate international eProcurement.
- European experiences/good practices could be exported to other countries.
- International standardisation should improve competition and increase the return on investment of eProcurement initiatives by avoiding duplicate work.

Collectively, the envisaged increased use of eProcurement should improve cross border access to public procurement markets, thus supporting the Internal Market, and reduce costs for the public sector by improving efficiency and stimulating competition in the Internal Market. In addition, European competitiveness should be advanced through the uptake of e-business tools such as eInvoices and eCatalogues.

8.4.3 Did the impact materialize?

The impact of the envisage measures has been examined in greater detail in the chapters above, and can be summarised as follows.

With respect to the elimination/reduction of barriers

While a 2004 Proposal for Review of the GPA[276] was forwarded by the Commission, this has not yet resulted in an updated GPA. Article XXII.13 of the aforementioned Proposal for GPA Review (the so-called 'rendezvous clause') notes that “Not later than the end of the third year from the date of entry into force of this Agreement, the Committee shall undertake further work to consider the advantages and disadvantages of developing common nomenclature for goods and services and standardised notices.” Thus, while no short term progress can be expected, an opening for further progress exists.

From a practical perspective however, the impact of this work appears to be very limited at this time. The review of the GPA has not resulted in a new draft, nor has an international nomenclature been established.

[276] See http://docsonline.wto.org/imrd/directdoc.asp?DDFDocuments/t/PLURI/GPA/W297.doc

Similarly, while standardisation work has progressed (notably based on OASIS UBL work), this has not yet led to large scale uptake. Finally, while detailed information on cross border procurements is rarely available, but it seems unlikely that international eProcurements are occurring in the Member States at any appreciable level, given the fact that all existing legal, political and technical barriers to adopting eProcurement at the European level are aggravated outside of an EU context.

Exporting EU good practices

At the international level, the Commission coordinates and liaises with:

- UNCITRAL, through participation in its Working Group on public procurement[277], specifically in view of furthering work on the UNCITRAL Model Law on Procurement of Goods, Construction and Services
- Multilateral Development Banks: mainly through the dissemination of good practices and experiences.

With respect to the EU external aid instruments (including e.g. in the context of the World Bank), the EU has the possibility of influencing procurement policies in third countries as well, specifically to ensure that EU economic operators do not see their access to these markets unduly hindered. The Action Plan called upon the Commission to determine if and how these instruments could be used to streamline eProcurement possibilities in third countries. However, no specific results of this work could be identified. Thus, it seems that these measures have been largely ineffective in exporting good practices.

Liaising with international standardisation bodies and fora

As discussed elsewhere in greater detail, several standardisation initiatives are currently underway, including via CEN (as an entry point for EU contribution to UNCEFACT work) and OASIS, notably building on UBL work. The increasing role played by European projects such as PEPPOL, which also builds on past IDABC initiatives, means that European stakeholders have a significant role in the international standardisation landscape. This allows European efforts to serve at an input at the international level, and inversely for European efforts to consider the international context. While progress has been slow to materialize, there is thus a clear and positive impact of the Action Plan's prescribed approach.

[277] See http://www.uncitral.org/uncitral/en/commission/working_groups/1Procurement.html

8.4.4 In conclusion

The overview above shows that relatively little progress has been made with respect to international eProcurement. It can be argued that far reaching ambitions were premature, given the limited state of interoperability in the EU. Some limited successes can be identified, notably through the proposals for reform of the GPA (which have however not yet resulted in a final reform), and more importantly through the influence of European standardization work, which is echoed at the international level via integration into UBL and thus UN/CEFACT. This can be considered a limited example of the desired impact of exporting European experiences and perspectives. From a more practical perspective however, and notably considering the ambition to increase international eProcurement, the Action Plan has failed to reach its stated goals within the third objective.

To a certain extent, this is not surprising, given the current state of European eProcurement. Much of the international ambitions within the third objective hinge on the existence of sufficient good practices of European cross border eProcurement that could be viably exported at the international level. However, since the desired overall impact of universal cross border eProcurement has not materialized in the EU, exporting European experiences to the international level can be deemed premature.

9 Conclusions on the evaluation questions

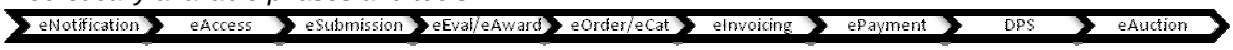
In the introductory chapter to this report, we presented several questions that would serve to evaluate the impact of the Action Plan. Based on the preceding chapters, we now return to these questions to draw our final conclusions on the impact and effectiveness of the Action Plan.

9.1 To what extent have public procurement procedures in the EU and EEA Member States been 'computerised', i.e. migrated from paper to the use of electronic means?

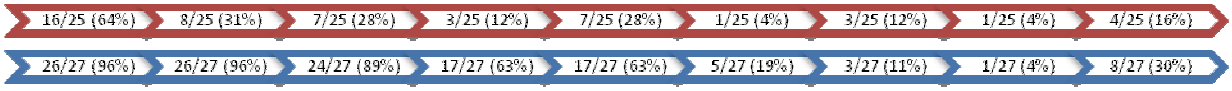
The overview above was already preceded by a cautionary note on the lack of reliable and comparable quantitative data, which makes it significantly harder to respond to precisely this question. This problem will be addressed below under the fifth evaluation question on future monitoring requirements. None the less, a few conclusions can still be drawn, based on the available data and identified success cases.

Firstly, it should be acknowledged that the availability of eProcurement infrastructure has increased significantly since 2004. The number of countries having eProcurement infrastructure in place has increased from 16 out of 25 Member States in 2004, to 26 out of 27 Member States in 2010. The same also holds true for the number of eProcurement systems, where the number of major sites has risen from around 36 to around 129 (without even considering smaller systems or multiple implementations of a single platform). A snapshot of available functionalities shows that the maturity of infrastructure has similarly improved since 2004:

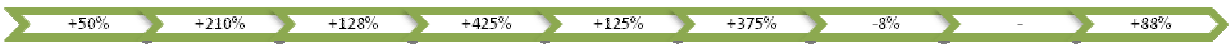
Theoretically available phases and tools:



2004 (red) and 2010 (blue) availability of phases and tools in key eProcurement systems among the Member States:



Evolution between 2004 and 2010:



Thus, availability of all phases and tools appears to have progressed substantially, with the exception of ePayment and DPS.

However, the question of migration from paper to electronic means relates primarily to uptake of this infrastructure in practice. The impact in this respect differs from phase to phase, and from tool to tool. Globally and in summary, the Action Plan seems to have had a significant beneficial impact on the use of eNotices in practice, but much less so on eSubmission and subsequent phases. This can be considered disappointing, as this corresponds more or less to the baseline scenario forwarded by the 2004 Impact Assessment. This baseline scenario was presented as a projection of the 2004 main development trends in eProcurement in the absence of an Action Plan, and predicted that by 2010:

- The goal of generalised use of electronic means in public procurement would only expected to be reached in the notification phase.
- A lower, but still significant, use of electronic means would be expected in the publication of tender documents and invoicing.
- For the remaining phases, public procurement would not be expected to reach critical mass.

In many countries, this is still an accurate assessment of the situation for most procurements. None the less, a few promising use cases have been identified in which significant take-up has been realised. As described above, these relate mainly to:

- CPBs using framework agreements for commodity purchases (supplies and services).
- The development by a public body of shared eProcurement infrastructure which a more or less defined group of contracting authorities can use to conduct their own procurements without a CPB being involved.
- Decentralised models in which contracting authorities can select from a wide range of eProcurement solution providers which meet predefined criteria (either technical criteria or actual accreditation).

Based on available quantitative information, the first model (CPBs using framework agreements) appears to be most successful in ensuring higher quantity take-up and in realising cost savings.

Globally, while eSubmission use has increased in the Member States, uptake is limited and certainly uneven between the countries, and it is not clear to what extent this can be attributed to the Action Plan rather than to natural development of the state of the art.

9.2 To what extent has the EU eProcurement Action Plan identified the right priorities and strategy?

The second key question is whether the Action Plan made the right choices to advance the use of electronic means in public procurement, and whether these choices have been effectively implemented in practice, especially in view of achieving the stated objectives of efficient and unhindered cross border eProcurement in the EU.

9.2.1 The Action Plan's priorities and strategies summarised

Looking back to the intervention logic description at the beginning of this report, these strategic choices of the Action Plan were summarised as being oriented towards accelerating the adoption of eProcurement and ensuring market access by establishing the necessary building blocks. Member States were not required to adopt eProcurement at any stage. Rather it was hoped that these two goals (accelerate adoption and ensure market access) would occur naturally once the existing barriers had been eliminated and a favourable ecosystem for eProcurement was put in place, i.e. a framework to support all phases of eProcurement, including through supporting policies and awareness raising at the national level. Generally, the approach was relatively 'light touch', and did not entail many obligations on the Member States' side.

This means that a significant margin for policy making was left to the Member States. While certain elements of the Action Plan aimed to establish a common European approach, it also left room for diversity in policy and implementation choices.

Globally, the following strategic priorities can be recognised in the Action Plan:

- Member States were required to implement fully electronic systems at national level, assess the compliance of existing systems with the Directives, and ensure that the provisions of the Directives are respected if they decide to use eProcurement (which was not mandated).
- The new Standardised forms and the CPV were given a prominent form: the Commission was to update these, and the Member States would be required to use them (although not necessarily in an electronic format).
- Member States were required to evaluate and update certain national policies, including notably by adopting national action plans to support the implementation of eProcurement (including quantifiable targets), to stimulate eProcurement participation (both by the most powerful buyers and SMEs), and by collecting statistical information on eProcurement uptake.
- Member States were required to apply qualified electronic signatures (including for cross border procurements) if required by national law; thus, here too, the choice to use electronic means (in this case the qualified signature) lies with the Member State.
- The Action Plan took a very low profile approach towards standardisation issues, relying mainly on ongoing IDABC activities, studies to be organised, and monitoring progress in standardisation bodies (notably CEN/ISSS). This applies to eSignatures, eCatalogues, eInvoicing, and eOrdering.

- With respect to eAttestations, the Action Plan built on the assumption that these would become more prevalent, and foresaw specific measures aiming to identify which eAttestations were most commonly used in practice.

- Knowledge dissemination and exchange of good practices were given a prominent role, both through the aforementioned studies and through ancillary forums such as the Public Procurement Network.

Looking at the main achievements and currently remaining problems, these priorities appear to have been largely correctly chosen. This can firstly be seen in the more favourable impacts:

- eProcurement system availability has increased, and the adoption of national Action Plans (as required by the Action Plan) has very likely played a noticeable part here.
- eNotification uptake can be described as very positive, and this would not have been possible without the development of the building blocks foreseen by the Action Plan.

The correctness of the chosen priorities can also be seen by examining the main remaining challenges, all of which were also identified by the Action Plan:

- eProcurement participation and uptake remains limited in most countries;
- eSignature interoperability (especially cross border) remains virtually non-existent in practice;
- Standardisation work has progressed, but has not lead to common standards in any of the identified key areas (eSignatures, eCatalogues, eInvoicing, and eOrdering);
- eAttestations have not become prevalent in virtually any country for eProcurement purposes, and for cross border use they remain entirely unsuitable;
- There is still a significant lack of usable statistical data with respect to eProcurement, which continues to impede the development of rational eProcurement policies.

The priorities thus seem to have been well chosen. However, given that a significant number of these priorities have not been resolved by the Action Plan, it is clear that the strategy of the Action Plan has not been effective in many respects.

9.2.2 Supporting role of IDABC in implementing these priorities and strategies

In the preceding sections, it has already been shown that various activities organised within the framework of the IDABC programme have played an important role in implementing the Action Plan. This was also intended by the Action Plan, which foresaw the intervention of IDABC explicitly within several measures, notably to foster interoperability:

Measure	Targeted party	Nature of the measure
Commission proposes an action under the IDABC programme to help Member States coordinate implementing the use of advanced qualified signatures	Commission	Support in implementation
Commission proposes to continue activities on eProcurement under the IDABC programme for exchange and discussion on interoperability issues and monitoring of Member States developments	Commission	Identification/resolution of interoperability barriers
Commission continues monitoring work on e-invoices by CEN/ISSS and proposes the continuation of XML activities undertaken in 2003-2004 on e-invoices and e-ordering under IDABC	Commission	Completing the framework
Commission considers proposing services for the electronic supply of business information and certificates in public procurement for implementation under the IDABC programme	Commission	Completing the framework
Commission proposes launching a study on e-catalogues in dynamic purchasing systems and electronic framework agreements using work by CEN/ISSS under the IDABC programme	Commission	Completing the framework

Measures in the Action Plan explicitly foreseeing a role for IDABC

The concrete actions tied to each measure have already been outlined above, and are summarised in Annexes H and following. Key achievements linked to these measures include notably:

- The completion of several studies aiming to examine eSignature interoperability problems and to propose specific solutions, including via the 2007 and 2009 Preliminary study on mutual recognition of eSignatures for eGovernment applications[278], with the 2009 edition examining specifically the issue of eSignature interoperability in an eProcurement context, and the

[278] See http://ec.europa.eu/idabc/en/document/6485

European Federated Validation Service study[279], which explores the possibility of a more comprehensive solution to eSignature validation.

- The 2008 Feasibility study on the electronic provision of certificates & attestations most frequently required in public procurements[280]. In addition to collecting information on the national status of the availability of the key evidentiary documents in eProcurements, the study also defined a series of conceptual scenarios to build interoperability between existing eAttestation systems. Roadmaps were subsequently drafted to implement the most favoured interoperability scenarios. Finally, the study presented a number of recommendations for future actions to gradually improve the availability and usability of electronic attestations in public procurement procedures.
- The completion and publication of eProcurement XML schemas[281], proposing a set of generic XML schemas to support the automation of data exchanges in the different phases of electronic public procurement. The analysis describes eOrdering, eInvoicing, eSubmission and eAwarding data models.
- Two separate actions linked to eCatalogues, including the 2007 study on eCatalogues in eProcurement, which complement the functional requirements for eProcurement (see below) specifically for the topic of eCatalogues; and the 2009 e-Catalogue Feasibility Study, as a part of the Commission's e-Invoicing and e-Ordering pilot project[282].

Apart from these actions in which IDABC was given an explicit role via specific measures, IDABC has also been active on other eProcurement topics, even in the absence of an explicit mandate in the Action Plan[283]:

- IDABC published the functional requirements for eProcurement under the EU framework in 2005, also containing technical solutions for implementing these requirements.
- IDABC developed and published eProcurement demonstrators, developed to stimulate familiarity with electronic public procurement procedures. The demonstrators support the following electronic procurement phases: eNoticing, eAccess, eSubmission and eAwarding including eAuctions.
- Establishment of the IDABC eProcurement Expert Group, which is run jointly by IDABC/DG MARKT C1, with a focus on technical interoperability issues.

In summary, IDABC has played a strong role in implementing the Action Plan, especially with respect to interoperability questions. However, as was noted above, most of these outputs appear to have had a limited beneficial effect on interoperability in practice for the Member States, as interoperability barriers persist for all of these topics.

[279] See http://ec.europa.eu/idabc/en/document/7764

[280] See http://ec.europa.eu/internal_market/publicprocurement/docs/eprocurement/ecertificates-study_en.pdf

[281] See http://ec.europa.eu/idabc/en/document/4721/5874

[282] See http://ec.europa.eu/idabc/en/document/3488/5874

[283] Also published on http://ec.europa.eu/idabc/en/document/3488/5874

9.2.3 Assessment of the effectiveness of the Action Plan's strategic approach

Looking at the list of challenges above, two key weaknesses within the Action Plan's approach stand out:

- Firstly, the Action Plan was very dependent on technological and policy progress in ancillary areas, for which it did not foresee forceful action itself:

    - It assumed that eSignature interoperability would improve, especially with respect to qualified signatures;
    - It assumed that existing standardisation work would lead to the adoption of common standards for eSignatures, eCatalogues, eInvoicing, and eOrdering;
    - It assumed that eAttestations would develop and be taken up at the national level.

  None of these points materialised, meaning that each of them remains a problem, especially at the cross border level. This is a key reason why the goal of cross border eProcurement has not been achieved.

  However, it should also be stressed that the chosen approach was not necessarily wrong, but that it was certainly premature. Looking at the three issues mentioned above and at how they are currently being followed up, there are certainly hopeful signs ahead:

    - eSignature interoperability for qualified signatures is currently seeing an enormous boost through initiatives linked to the implementation of the Services Directive (which is faced with similar challenges as eProcurement), notably through the establishment of national trusted lists of supervised CSPs issuing qualified signature certificates to the public. The PEPPOL pilot project is building a signature interoperability model which leverages this benefit to some extent. It remains to be seen if this approach will prove to have a strong impact in the future, but none the less it is undeniable that at least part of the eSignature interoperability puzzle will be resolved.
    - The standardisation work for the aforementioned documents appears to be converging around UBL 2.0. National instantiations of this standard are already in use in several Member States, and their further development is being tested in projects such as PEPPOL and e-PRIOR, building inter alia on the outputs of IDABC's work. This could help clear the final barrier, namely the homogeneous implementation and use of these standards.
    - An ambitious treatment of the eAttestations problem is being developed within the context of the PEPPOL project via the Virtual Company Dossier, which will help identify weaknesses in national approaches as well as provide a strategy on how to use eAttestations in cross border procurements.

  Looking at the status of each of these points, the impression one gets is that a lot of building blocks are now being finalised which should have been available much sooner in order to achieve the objectives of the Action Plan. In summary and with the benefit of hindsight, the Action Plan was focused too much on achieving the final policy vision, rather than on establishing the technical and organisational baseline that needed to be achieved at the national and European first.

In effect, the Action Plan's measures for the points enumerated above are fairly well suited to the situation existing in 2010, but not to the situation as it was in 2004. If the Action Plan was to achieve its objectives, measures would have to have been included to achieve the status as it is today, including the more pro-active eSignatures approach taken in the context of the Services Directive, and greater focus on developing and promoting standards for the key documents, including notably also commitments from Member States to use homogeneous implementations of these standards. It is worth noting that this latter point remains a weakness to this day.

- A second problem is that the Action Plan neglected the importance of administrative simplification as a strategy to stimulate eProcurement uptake and appeal. The evaluation showed that some of the main business cases at the national level with respect to eProcurement are not the most advanced ones, but rather the most accessible ones. The approaches with respect to authentication and eAttestations illustrate this point:

    - Countries which rely on eSignatures for electronic authentication have (with few exceptions) failed to resolve the cross border accessibility challenge. This may change in the future due to the aforementioned initiatives, but so far it remains a reality. In contrast, a small number of countries have implemented systems based on simple username/password authentication. While such systems are inherently considered less secure than PKI based systems, the disadvantage of lesser security of username/password based systems appears to be largely theoretical in practice, since no incidents related to this approach have occurred since their introduction.
    - With respect to eAttestations, it was already noted above that relatively few authentic eAttestations are being used in eProcurements in practice. Instead, countries generally aim to install electronic procedures that eliminate or reduce the need for attestations, notably through self-declarations of compliance.

  Neither one of these approaches were foreseen or envisaged by the Action Plan. Generally, the Action Plan focused strongly on a highly advanced ideal situation, based on what was conceptually possible, rather than what was realistically necessary.

This, in effect, summarises the main weakness of the Action Plan quite well: the measures addressing the interoperability challenges appeared to be based on what was technologically thinkable (state of the art), rather than on what viable within the available timeframe.

Not all of the shortcomings should be laid at the Action Plan's feet, however. In some areas, there is also a clear failure at the side of the Member States, who have not always followed the measures directed towards them:

- Obviously, the establishment of national infrastructure is a purely national competence. Almost all Member States (with the exception of Greece) have established some form of eProcurement infrastructure, but the supported functionalities and level of sophistication vary quite broadly. Given that reference implementations for core functionalities were made available through IDABC, and that good practices have been shared extensively in recent years (including presently via the ePractice.eu website), it would not have been unreasonable to expect all Member States to at least fully support all pre-award phases. This is not presently the case. Even making allowance for the complexity of eProcurement (including due to political and institutional challenges of administrative competences) and the interdependence with other eGovernment and eBusiness areas, it seems that the development of

eProcurement infrastructure has not been given the political priority that was needed to achieve the Action Plan's goals in all Member States.

- A similar observation can be made with respect to eProcurement policy. Member States were required by the Action to evaluate and update certain national policies, including notably by adopting national action plans to support the implementation of eProcurement (including quantifiable targets), to stimulate eProcurement participation (both by the most powerful buyers and SMEs), and by collecting statistical information on eProcurement uptake. The evaluation shows that a large number of Member States have not followed these obligations. While national action plans are common, the inclusion of quantifiable targets is more unusual, being identified in only 18 out of 32 countries. Similarly, the Action Plan called on Member States to stimulate powerful national buyers to adopt similar action plans. No such action plans have been identified in the course of the present study. Member States were also required to launch and support specific awareness campaigns and training programmes targeted at SMEs. Clear and systematic examples of this have only been identified in 7 Member States. Finally, Member States were required to collect statistical data to monitor their progress and the uptake of eProcurement at the national level. This obligation has not been correctly implemented in virtually all countries, with the exception of France, where an Observatory was established for this purpose. The data collected and published in most other Member States is not very conducive to evaluating the effectiveness and impact of public procurement policies.

Thus, while some of the strategies adopted by the Action Plan were certainly partially misaligned with reality, part of the responsibility also lies in the non-compliance with the obligations of the Action Plan at the Member States' side.

9.3 What are the overall outcomes and what lessons can be drawn from current experience? What if any, are the remaining issues, possible gaps and barriers?

9.3.1 Summary of the outcomes and lessons

Overall, one can only conclude that the Action Plan has largely failed to achieve its objective of efficient and unhindered cross border eProcurement in the EU.

The sections above have shown that several positive achievements have been realised in the field of eProcurement, but these play a role mainly at the national level. Several key barriers and challenges still remain, which can strongly affect cross border interoperability as well:

- **Lack of available infrastructure:** while all Member States have *some* eProcurement infrastructure in place, this does not always support all possible phases (e.g. eSubmission is entirely unavailable in 3 Member States). Infrastructure availability and maturity is still lacking in many cases, as shown in the overview above.
- **Lack of interoperable infrastructure:** standardisation in a number of areas has not progressed at the cross border level, as shown especially with respect to eSignatures and key eDocument types (notably eCatalogues, eInvoicing, and eOrdering). Their use in cross border settings remains fundamentally hampered due to a lack of a clear common European approach.
- **Legal uncertainties:** in a number of contexts, legal challenges still remain. This was noted to be the case with respect to electronic invoicing, where the cross border validity of invoices still cannot be determined without assessing the national situation.
- **Trustworthiness:** even when no legal or technical challenges exist, trustworthiness may be hard to assess. Key areas where this occurs are identification of the economic operator (can the contracting authority trust that the provided credentials are reliable?) and the assessment of the validity of evidentiary documents (does a document provide acceptable assurances with respect to the question being asked, e.g. tax compliance?).
- **Accessibility:** as a purely pragmatic issue, the accessibility of eProcurement solutions is also hampered due to language barriers and differences in interfaces, which require economic operators to be familiar with the local public procurement context.
- **Economic viability and use cases:** in the absence of clear quantitative data, it is hard to assess where the most successful use cases for eProcurement lie, and what the return on investment of specific choices is (e.g. centralization versus decentralization, framework agreements versus one-off procurements, when to use newer tools such as eAuctions and DPS, etc.).
- **Transparency:** there is a fundamental lack of reliable statistical eProcurement data. As a result, the identification of best practices is difficult, since comparative assessment is virtually impossible. In addition, this lack of data serves as a barrier to accountability with respect to policy making, both at the national and European level. In the absence of reliable data, the

business case of eProcurement (especially at the cross border level) remains to some extent a matter of conviction rather than fact.

- **Market challenges:** the clear choice to use a specific technology can benefit uptake (as has been seen e.g. with respect to eInvoicing, where the only substantial use cases in eProcurement relate to the adoption of a single common implementation of a standard). However, such choices also tend to penalize market players which used different technologies. In addition, if this choice is made at the local / regional / national level, this leads to different choices being made across the EU, leading to new interoperability barriers.
- **Distribution of benefits:** finally, successful uptake of eProcurement requires a sufficiently equitable distribution of benefits between all stakeholders: contracting authorities, economic operators and any required service providers (such as PKI service providers or eProcurement software developers), taking into account the diversity of these stakeholders (smaller and larger contracting authorities, large enterprises and SMEs, national and foreign economic operators).

Examining how and where these issues have been addressed successfully across the Member States, the following set of key lessons emerges:

- In order to be accessible for cross border procurements, eProcurement systems must operate on the basis of solutions which emphasise accessibility and pragmatism over technological sophistication and theoretical security benefits.
- eProcurement is not treated by the Member States as a unified global process that must be supported in its entirety by a single system. Supported phases or tools vary from country to country, system to system, and even procurement to procurement. It is not meaningful to say that eProcurement is supported or mandatory in any given country without qualifying precisely what is meant and to which extent this is the case. European policy should recognize this fact by acknowledging and addressing the different specific challenges for each phase and tool.
- Successful business cases have been found in several countries. While clear statistical data is rare, flagship eProcurement projects which are most frequently presented by the Member States as being successes commonly involve CPBs using framework agreements for commodity purchases (supplies and services). More generally, aggregation is a cornerstone of successful eProcurement strategies: contracting authorities and economic operators must have the possibility of easily using and re-using existing solutions.
- A crucial challenge is to ensure that eProcurement solutions establish a benefit for all stakeholders. For the example of CPBs using framework agreements, this is clearly the case: contracting authorities can build on the expertise of CPBs to organise their procurements in a flexible way, while economic operators only need to join a single framework to participate in multiple procurements. For other approaches this is less obvious: eAuctions for instance tend to cut costs for contracting authorities, but without a clear equivalent advantage at the economic operator's side, which reduces the appeal of public procurements to them. Similarly, the advantage of greater flexibility offered by DPS does not appear to be sufficient to create significant traction so far, since their precise place and role in the European eProcurement landscape is not clear.
- Finally, with respect to policy making, the available data suggests that achieving significant uptake of eProcurement requires a continued commitment to encourage contracting authorities and economic operators to migrate to eProcurement. Partial obligations to use certain eProcurement tools or services have been used to good effect in a number of countries, notably by requiring the use of eNotifications, framework agreements when these are available, or eInvoicing.

Virtually every aspect of eProcurement foreseen by the Action Plan is currently being used in the EU in some form, but in practice interoperability between solutions remains very limited. This implies that Member States are not investing their budgets optimally, since variations of solutions are being continuously redeveloped at the national/regional level. In order to be truly effective in creating cross border eProcurement, the main challenge is in achieving a 'trickle-up' effect, in which existing national solutions either converge or are re-used more systematically at the European level. The Action Plan has been ineffective in stimulating the emergence of such a common approach, and was thus too 'light touch' in this respect.

9.3.2 A comparison to private eProcurement – possible lessons and interactions

Some of the barriers and challenges identified above may be linked to the unique requirements which apply to the public sector, where procurements are governed by a set of regulations aiming to ensure transparency and fairness. It is useful to examine briefly what the main differences are with private sector eProcurement, and how this affects the identified barriers and challenges.

This issue was examined in some detail in the 2005 CEN/ISSS gap analysis on interoperability needs for effective electronic public procurement[284]. Based on this report, the following key differences can be identified:

- As a major difference in the drivers behind procurement, the report notes that private procurement is generally geared to provide the best costs-benefits balance, whereas transparency and openness are paramount for the public sector. This does not imply that cost-effectiveness isn't a key concern for public procurement as well, but rather that the regulatory framework surrounding public procurement will contain clear obligations to ensure transparency, openness and fairness as well. This decreases flexibility for the public sector, since contracting authorities need to ensure that these regulations and principles are observed, which is less of a concern in the private sector. In addition, there may be legal or policy obligations to use specific solutions, so that 'off the shelf' solutions may not be available to public purchasers.
- For the eSubmission phase, public procurements need to choose between specific predefined categories of procurement (open, restricted, or negotiated procurements) and predefined tools (eSignatures, eAuctions, DPS, …), and must then observe all applicable regulations, including with respect to publicity. The suitability of all participating economic operators must be checked rigorously, and acceptable bids must be comparatively assessed using fair and transparent criteria. Rejected bids may be subject to disputes and/or re-examination. None of these obligations apply to private procurements.
- The report also examined eOrdering specifically, and noted that the need for transparency in the public sector resulted in a preference for nationally developed solutions, rather than choosing off the shelf products based on proprietary standards offered by (and to) the private sector. This issue still exists today, as was pointed out in the analysis of this phase above. In the private sector on the other hand, common guidelines for the implementation of eOrdering processes are sometimes developed within a specific sector user group, thus mitigating interoperability challenges, at least within that user group. The report acknowledge however that eCatalogue standardisation was a recurring problem in the private sector as well.

[284] See ftp://ftp.cenorm.be/PUBLIC/CWAs/e-Europe/eProc/cwa15236-00-2005-Feb.pdf

- With respect to eInvoicing, the differences were less significant. Both for the public and private sector, it was noted that several EDI based eInvoicing systems were now in place, but that fully electronic invoicing remained problematic due to the need to comply with VAT and accounting laws at the national level as well.

Some of the gaps and barriers to eProcurement in the public sector are clearly linked to the need to use only eProcurement solutions which meet regulatory requirements and thus ensure that the principles of transparency and fairness are observed. This is notably the case for the lack of available infrastructure and for trustworthiness problems: contracting authorities cannot merely pick off the shelf solutions and assume that these are sufficient for public procurement purposes. However, other gaps and barriers have not been adequately solved in the private sector either. This is notably the case with respect to common document types, where private procurement is also confronted with a lack of interoperability. However, in private procurements, this issue is predominantly present for post-award phases (eOrdering, eCatalogues, eInvoicing), since there is no common requirement to use advanced electronic signatures or eAttestations, giving private procurement partners much more margin for flexibility.

In summary, while infrastructure availability issues could be addressed by relying on private procurement solutions, it should be noted that this would not resolve the cross border interoperability challenges. Since this is a key goal of European public procurement policy, long term solutions will thus need to be found elsewhere.

9.4 What, if any, are the necessary policy improvements to be undertaken, and at which level?

On the basis of the assessment above, several policy recommendations can be forwarded. Some of these are addressed towards the Member States, and some require follow-up at the European level.

9.4.1 Member State level policy improvements

With respect to infrastructure

Firstly, there are still a number of Member States whose infrastructure remains at a fairly rudimentary level. This includes specifically Member States which have no identifiable eProcurement infrastructure at all, and those which only support unilateral phases (eNotification and eAccess, but no eSubmission functionality). Given the available best practice examples and state of the art, all Member States should at least be able to support the pre-award phases of eProcurement based on common infrastructure. Member States which fail to meet this threshold should remedy this point. eSubmission should not remain the fringe phenomenon that it still is in many Member States.

It should be emphasised that '*common* infrastructure' in this suggestion should not be misread as requiring *centralised* infrastructure. Some Member States with strongly decentralised approaches have successfully implemented regional or local eProcurement systems instead, whereas others have favoured collaboration with private sector partners to make a multitude of solutions available. The key success requirement is however that such solutions (centralised or decentralised) must be easily available to a multitude of contracting authorities. A hands-off approach requiring contracting authorities to implement their own solutions without coordination at the Member State level is unlikely to lead to good results.

Furthermore, such infrastructure should be actively promoted towards the contracting authorities which are eligible to use it. While difficult to estimate exactly, cost savings in this area are shown to be real and significant whenever data is available. Here too, a hands-off approach that leaves the take-up of eProcurement entirely to its natural market appeal is too slow and ineffective, as institutional inertia must be overcome both with contracting authorities and economic operators. Member States should seriously consider requiring contracting authorities to consistently use eProcurement tools whenever these are available, including by offering economic operators the option to use eSubmission whenever possible. This goal can be pursued at the national / federal level as a priority, allowing good practices to trickle down to the regional / local level once sufficient maturity has been reached.

With respect to cross border impact

A second major point is the cross border accessibility and usability of eProcurement infrastructure. With precious few exceptions, Member States have largely failed to make cross border eProcurement possible (or reasonably attractive) through an excessive reliance on local infrastructure and local policy choices. Key examples discussed extensively above include eSignature requirements, document standards and formats (including national instantiations of international standards for eInvoices, eCatalogues etc), and simple language issues.

Member States should assess critically whether their adopted practices and solutions are conducive to cross border procurement, and which solutions are available to them to remedy these problems. Pragmatic approaches should be favoured over ideal solutions that are unlikely to materialise in a reasonable period of time ('perfection is the enemy of good'). If systematic solutions are presently unavailable or unworkable (e.g. requirements to use standards which have no European uptake), foreign economic operators should at least have the possibility to use ad hoc workarounds. A simple solution might be to clearly indicate that economic operators established outside of a Member State can contact the contracting authority for assistance in meeting specific requirements. While such workarounds are clearly not a viable solution in the longer term, they may serve to ensure some cross border functionality until sustainable solutions are developed.

With respect to policy accountability and data collection

Despite an explicit measure to this effect, the impact of eProcurement at the national level is presently almost impossible to measure due to the lack of accessible and comparable information on eProcurement practices within the Member States. The lack of quantitative information makes it impossible to accurately assess:

- To what extent eProcurement is being used in the Member States;
- Which contracting authorities are using it, and for which types of procurements;
- What the cost savings and transactional savings for eProcurements are (if any);
- If there is a notably difference between these savings depending on the approach taken, e.g. when distinguishing open procurements, framework agreements, DPS and eAuctions;
- If the chosen business model has a notable impact, e.g. the choice of CPBs versus direct procurements by the contracting authority, or the choice of a centralised versus a decentralised approach, or the choice between a wholly public sector operated system versus public-private partnerships, etc;
- Which investments have been made in eProcurement, and how are these divided between set-up costs and operational costs;
- The distribution of economic operators in terms of participation and success rates, including SMEs versus large enterprises, and national versus cross border procurements.

Statistical data collection via TED can offer some general insights as demonstrated in this report, but the potential of TED data is limited due to restrictions in the used forms and due to the fact that they are frequently misused (as was seen on a very large scale in e.g. the DPS statistics).

Member States should be required to review their data collection processes with respect to eProcurement, and should be able to provide reasonably comprehensive data with respect to the aforementioned points. This is a prerequisite for:

- Fairly identifying best practices and success scenarios on a rational basis; this is presently difficult, due to the fact that key economic variables are unknown.
- Evaluating and improving policy making at the national and European level on a rational basis. This also includes the possibility of assessing the real business case for cross border eProcurement, which is still presently largely an unknown factor.

It should be stressed that this is not an entirely new obligation, as the Member States are already required to present annual statistical reports to the European Commission under articles 75-76 of Directive 2004/18/EC with respect to central government authorities. The main addition would be the requirement to split this data between traditional procurements and eProcurements.

9.4.2 EU level policy improvements

Building on convergence and best practices

A first policy priority is to build strongly on existing initiatives, projects and achievements, and ensuring that these converge towards common solutions. This approach differs from the 2004 Action Plan in its orientation towards achieving common and practically reusable components, rather than working at a high level and leaving too many implementation details to the Member States. This entails notably the following points:

- A number of ongoing eProcurement initiatives are already working on building towards convergence on issues that impede technical interoperability (including eSignatures, eCatalogues, eInvoicing, etc), with PEPPOL being a key example of this. This process should obviously remain high on the priority list, as it leads to the identification of good practices, the creation of reference implementations, and better interaction with standardisation bodies such as CEN.
- The importance and impact of cross-context links should be recognised. Efforts undertaken within the implementation of the Services Directive (including the SPOCS large scale pilot) can also serve as model approaches for eProcurement. Similarly, revisions of the European legal framework for key building blocks (such as the ongoing review eInvoicing rules and the potential future review of the eSignatures framework) will have a crucial impact on the interoperability of eProcurement solutions on this point. Finally, the importance of administrative simplification has increased as a policy objective in recent years, which should also be reflected in the European eProcurement approach. eProcurement should be simpler than traditional procurements for all stakeholders if uptake is to be achieved.

Ensuring interoperable uptake at the national level

The section above is not fundamentally new compared to the 2004 Action Plan, and entails more of a shift in emphasis. A more crucial challenge should however also be met: convergence of standards and the identification of best practices is meaningless if uptake at the national level cannot be ensured. Several efforts undertaken under the 2004 Action Plan illustrate this point perfectly: basic software demonstrators and XML schemas for eProcurement were developed by IDABC as foreseen under the Action Plan, and standardisation work on several key document types (including eCatalogues, eInvoicing and eOrdering) has progressed at the international level, taking into account European inputs and experiences. Yet at the national level, implementations continue to differ, making interoperability difficult to impossible.

It is not possible to legally impose the use of a single implementation or a single standard as there is no legal basis for this, nor does this approach seem politically viable. However, it may be realistic to follow an approach based on the experiences gained in European initiatives, leading by example, and facilitating and encouraging the re-use of developed output. The goal would be to amend existing national approaches by a common European approach.

Broadly, work from leading eProcurement projects such as PEPPOL and e-PRIOR could be brought to maturity in the form of reference implementations. The European Commission could opt to implement these itself to conduct eProcurements by European institutions (which is already the case for e-PRIOR within certain Commission services), thus providing a working eProcurement reference model which Member States could choose to follow.

To the extent that technical implementation work could be made openly available to Member States (as is e.g. the case with part of the e-PRIOR outputs as discussed above), this could prove to be a viable approach to push workable solutions to Member States whose infrastructure has not yet reached an advanced implementation level. For other Member States which have already established a partially functional but non-interoperable infrastructure, outputs could be made available in a modular fashion, i.e. based around specific functionalities to be supported (signature validation modules, catalogue development and integration modules, invoicing modules,…). Additional efforts would then be invested in developing connectors allowing specific modules to be integrated into existing eProcurement infrastructures. In this way, Member States would have the freedom of integrating any necessary modules that would be usable at the European level, without invalidating their existing eProcurement work.

Uptake of these modules would be strictly voluntary. However, if the goal can be achieved of developing modules that support specific functionalities at the European level, it seems likely that this would be a sufficient incentive for implementation in Member States which have not yet solved these problems themselves.

9.5 What future monitoring and evaluation requirements need to be put in place or improved to facilitate the assessment of future policy action in this area?

In the sections above, the importance of having sufficient quantitative information was already stressed repeatedly. With respect to monitoring, the main tools are the existing notification forms and the reporting obligations incumbent on the Member States. With respect to evaluation, the main goal should be to clarify and justify the quantitative progress that Member States are expected to make. The sections below will explore both points.

9.5.1 Monitoring the state of eProcurement

Standardised notification forms as monitoring tools

In the analysis chapters of this report, we have occasionally attempted to use TED statistical data to quantify eProcurement trends, as a proxy for more detailed usable information sources. It should be stressed however that these forms were not intended for the purpose of facilitating statistical research, but rather as a way of streamlining the publication of procurement activities at the European level insofar as required by the Directives. It is therefore not surprising that their usability as statistical analysis tools was limited: while the analysis of the notices contained useful indicators on some eProcurement tools (e.g. eAuctions and DPS), the information was generally insufficient to draw meaningful conclusions, at least without using other sources for corroboration.

In our opinion, it would not be advisable to update the standard forms to include all relevant information. This approach would push an additional administrative burden on the contracting authority preparing the notice, in order to shoehorn a policy desire into an unrelated administrative requirement. More importantly, it would not even be possible to fit all desired information into the forms. E.g. investments made and transactional savings are independent from specific procurements, and could not be reflected in notices.

However, the evaluation has also revealed that there are significant problems in the correct usage of the existing forms, with clearly erroneous data being frequently entered without correction. This affects not only the usability of the forms for the purposes of statistical analysis, but also has a negative impact on their primary goal of promoting transparency and competition. The Member States should endeavour to improve the quality of submitted forms, including through improved training of the persons responsible for their preparation and submission. From the Commission's side, it would be advisable to review to what extent automated entry support and error detection/consistency checking could be used to improve the quality of the data.

National data collection and reporting obligations

A more productive avenue for collecting national data on eProcurement practices lies in our opinion in the reporting obligations under articles 75-76 of Directive 2004/18/EC with respect to central government authorities, as already mentioned above. These articles require the Member States to submit annual statistical reports to the European Commission, covering for the listed authorities:

> (a) the number and value of awarded contracts covered by this Directive. As far as possible, this data should be broken down by:
>
> > (a) the contract award procedures used;
> >
> > (b) for each of these procedures, works as given in Annex I and products and services as given in Annex II identified by category of the CPV nomenclature;
> >
> > (c) the nationality of the economic operator to which the contract was awarded.
>
> (b) the number and total value of contracts awarded pursuant to derogations to the WTO Agreement on Government Procurement.

For each category of contracting authority not listed in the Directive as a central government authority, the statistical report should detail at least:

> (a) the number and value of the contracts awarded, broken down as noted above;
>
> (b) the total value of contracts awarded pursuant to derogations to the WTO Agreement.

Obviously, this obligation was not intended to track eProcurement progress, and no legal obligation in this respect is imposed on the Member States. However, given that this would be beneficial both at the national level and at the European level, it would be worth exploring to what extent this reporting obligation could be expanded by adding eProcurement specific data. Building on the list of suggestions in the section above, one could envisage the following data to be added:

- An indication of the number and budget of procurements which offer the possibility of using eSubmission for the authorities being reported upon; and the number and budget of procurements in which eSubmission has been used in practice (by any economic operator, and specifically by the winning bidder);
- A breakdown of eProcurements organised by CPBs versus non-CPBs;
- Estimated cost savings and transactional savings at the aggregate level (i.e. not specific to individual procurements), if any.

More policy information would be desirable (as noted in the more extensive list above, which included e.g. also investments made, business models and SME participation/success rates), but due to the fragmented nature of eProcurements such extensive information may be harder to obtain for most countries. The shortlist above however seems to be feasible, and in combination with TED statistical data improvements should allow for a decent baseline of information to be collected.

9.5.2 Evaluating progress

Finally, in view of determining whether eProcurement progress is being made, and whether or not this progress is resulting in the expected benefits (notably improved internal market access, increased competition and thus lower prices and/or higher quality of supplies, works and services), clear quantitative indicators should be formulated and periodically evaluated. It should be stressed however that not all indicators of progress should necessarily be considered as targets; some indicators merely serve to identify possible weaknesses in European and national eProcurement policy.

Key targets should in our view include two points:

- eNotification uptake: there are no barriers in principle to the systematic uptake to electronic notices (using eSenders or eNotices). Their adoption is relatively simple and cost-effective in practice. Near-universal adoption in the short term is a feasible goal, and should become a key target.
- eSubmission uptake: as the first phase requiring bilateral communication between the economic operator and the contracting authority, eSubmission is a requirement for fully electronic procurement. Its uptake should therefore become an explicit key target for European eProcurement policy.

Other relevant indicators to be monitored which are not targets in their own right should be the following:

- Cross border participation in eProcurements is an important indicator of the extent to which internal market barriers have been eliminated. However, this should not be a target as such: while cross border participation should be made easily possible, setting specific targets on this point would neglect the possibility that the actual business case for cross border eProcurement may be limited. This point can only be clarified by eliminating barriers to cross border eProcurement and observing market evolutions.
- Cost savings are a key indicator of the direct useful impact of eProcurements. However, they should be a consequence of the use of eProcurement, and should therefore not be a target as such.
- The use of specific eProcurement approaches or tools (CPBs, framework agreements, eAuctions or DPS) is a relevant indicator of trends and strategies, and in combination with cost savings data could be used to identify best practices. However, these are tools in order to achieve broader eProcurement objectives, and their use should not be treated as a goal in its own right.

On the basis of these points, it should be possible to encourage Member States to set appropriate priorities in their eProcurement strategies, while allowing the effective evaluation of the impacts of these policies on the internal market.

9.6 Concluding remarks

When examining the status of eProcurement in 2010 and looking at the main achievements since the adoption of the Action Plan in 2004, it is clear that successes can be mainly identified for eProcurements that do not involve any cross border aspects. Considering that the Action Plan aimed to achieve an open and accessible public procurement market, in which "any business in Europe with a PC and an internet connection can participate in a public purchase conducted electronically", one can only conclude that the Action Plan has largely failed to achieve this goal.

Even when examining only purely national procurements, development is uneven across the Member States: while simpler phases such as eNotification are used widely, more advanced phases requiring bilateral communication (beginning with eSubmission) are much less common, with some Member States still lacking the required infrastructure. The EU-wide transition to fully electronic procurement is thus far from complete, in spite of the smaller successes outlined above.

Future EU eProcurement policy will need to build on the lessons learnt from the implementation of the Action Plan. The existence of a pragmatic and realistic vision of eProcurement will need to take a central role in that respect. A crucial weakness of the 2004 Action Plan was its dependence on progress in domains for which no forceful action was foreseen (e.g. in the areas of eSignatures and a multitude of eDocuments). This is an aspect which will need to be remedied in the future, relying either on (provisional) workarounds to address these points, or on a clear roadmap to provide longer term solutions (e.g. based on European projects in this area or on existing international initiatives), or a combination of both approaches. An strategy based on assumptions of progress for such complex topics should not be deemed acceptable.

This should not be taken to mean that action is only required at the EU level. Within the Member States too, there is room for improvement. The accessibility of existing eProcurement systems to economic operators in other countries does not seem to be systematically considered, given the frequent choice for systems which are difficult, complicated or expensive to use for economic operators established in other Member States. In addition, there is little transparency in most Member States on the scale and effectiveness of their eProcurement initiatives, making it particularly hard to determine how many offers are actually submitted electronically, their financial value, and which contracting authorities/economic operators reap the most rewards from eProcurement. This type of data collection is a responsibility that must be primarily shouldered by the Member States.

Finally and in conclusion, it should also be recognised that a lot of groundwork has been laid since the adoption of the Action Plan, both at the national and European level. Through these initiatives, a lot of know-how and good practice cases have been built up. This is a situation which is clearly superior to the status in 2004, when most Member States could only boast a limited field experience with eProcurement. The main challenge for the coming years will be to find a way to spread and interconnect these experiences and to improve their use and accessibility. If this challenge can be met, the envisaged goal of an open and accessible European electronic public procurement market can still be achieved. Given the potential economic and societal benefits, this is a goal which the European Union can no longer afford to miss.