

EUROPEAN E-SKILLS AND CAREERS PORTAL

FEASIBILITY STUDY AND BUSINESS PLAN

FINAL REPORT

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1. EXECUTIVE SUMMARY

The ICT sector is highly important for the EU economy, and currently employs 5.3 million people. However, the ICT job market is not balanced in terms of supply and demand, because of five identified main problems: the lack of a pan-European e-skills framework, the lack of a true EU-wide job market, the lack of a common ICT qualifications framework, the need to enhance ICT professions, and the lack of standardisation and homogenisation of jobs, educational programmes and certifications.

In the short run, one of the several requirements to overcome these shortcomings is the creation of a pan-European ICT Skills and Careers portal, whilst in the long run a pan-European skills and qualifications framework should be developed. At present, the market is covered with national ICT portals and frameworks and some pan-European frameworks that are not updated, not accepted by the majority of EU Member States, or under development.

Whilst in the long term, it is planned that a common European skills and qualifications framework will be implemented and accepted by all Member States, in the short and medium term, there is a need to bridge the problems identified by developing different tools and services. This is where the eSkills and Careers portal positions itself: as a complete pan-European ICT portal, offering tools and information that all of the different stakeholder groups hope to find. Of the stakeholder groups, ICT and ICT user companies, employment agencies, unions, educational institutions, unions and public bodies, the portal will mainly focus on citizens (students and ICT professionals), and ICT and ICT user companies.

It is recommended that the portal should offer solutions to three of the identified problems: e-skills framework, qualifications framework and enhancement of ICT professions, creating five portal areas: Frameworks, Career and CV Development Tools, Participatory Workspace, Resource Database and News.

During the pilot phase, the portal will link ICT job profiles from already existing frameworks. For the final implementation, there should be a decision as to whether the portal will keep linking to other available frameworks, provide services built on one of the frameworks currently under development or create its own framework from the scratch.

The frameworks are the core of the portal, and all other services and tools will be built around the frameworks. There are three different ownership models: public ownership (public funding) model, the industry ownership model and the membership model. Additionally, there are four models of revenue: the sponsorship model, the advertisement model, the end-user subscription model and the resource syndication model. All these revenue models can be used as additional sources of revenue in different combinations and combined in several ways, the optimal model for the eSkills and Careers portal will depend on the level of commitment from industry and other partners and the value of the services supplied.

2. MARKET ENVIRONMENT

2.1 Market Research and Identified Needs

The Information and Communications Technologies (ICT) sector is one of the most dynamic sectors in the EU. In 2006, it had a market value of 644 billion euros and a market growth of 3.1%. For 2007, a market value of 663 billion euros and a market growth of 2.9% are expected¹. Currently, 5.3 million people in the EU are employed in ICT jobs.²

As a significant element of the EU economy, ICT skills are important for the competitiveness of the European economy as a whole, and ICT developments are driving forces for all industry sectors and leisure areas, being directly or indirectly linked. The competitiveness of European industry is dependent on the effective use of information and communication technology (ICT) and the knowledge, skills, and competences of the European workforce.

Unfortunately, there is a high level of skills shortages and disparities in the EU, as there are few common approaches to skills and training standards and their assessment and certification across the European Union.

The European e-Skills Forum warned in 2004 that significant, both quantitative and qualitative, e-skills gaps would emerge. It called for the preparation of a long term e-skills agenda to ensure the EU has the necessary skills for the future. Since then, a 2005 industry report predicted that there would be a shortage in 2008, across Europe, of up to half a million people with advanced networking technology skills.³ A sectoral survey on e-business in 2006 reported that enterprises are anticipating skills shortfalls for ICT practitioners, particularly in ICT strategy, security and new business solutions⁴.

To support ICT development and the competitiveness of enterprises, and therefore the European economy as a whole, it is necessary to have a balance between demand for and supply of ICT practitioners. This is important for the ICT sector itself and for all ICT user sectors, which today means virtually all sectors.

ICT jobs are generally considered to be limited to programming jobs where marketing, sales, communication, design, strategy and other skills are not required, and therefore young people and especially women do not consider it an attractive occupation and career path.

A further reason for the skills shortages and disparity in ICT skills is the lack of common definitions of ICT skills and skill levels relevant for ICT employment, and the lack of qualification (learning output) definitions and qualification levels relevant for ICT practice and education. There is no common way of validating training, regardless of when, where or how it has been achieved.

¹ Source: European Information Technology Observatory (EITO) 2006

² Source: KIBNET

³ IDC, "Networking Skills in Europe: Will an Increasing Shortage Hamper Competitiveness in the Global Market?" IDC White Paper, commissioned by Cisco Systems, September 2005

⁴ European Commission (DG Enterprise and Industry), E-Business Watch Survey 2006

Furthermore, ICT jobs are generally considered to be limited to programming jobs where communication and other skills are not required, and therefore young people do not consider the sector to be attractive.

One of the multiple approaches could be to set-up an Internet portal that provides the necessary tools and information.

There is already a significant number of ICT portals and skills and qualifications frameworks on the market, offering different kinds of contents on a European, national, organisational or regional level. Although they work towards the goal of standardisation of qualifications and enhancement of ICT careers, none of them represent a portal with a complete range of tools and services that facilitates an improved balance between ICT skills supply and demand on a pan-European level.

Hence, there is a need to promote transparency regarding different skills and qualifications, improve mobility, and make ICT career pathways more attractive, highlight best practices and career paths and strive to achieve standardisation and promote excellence.

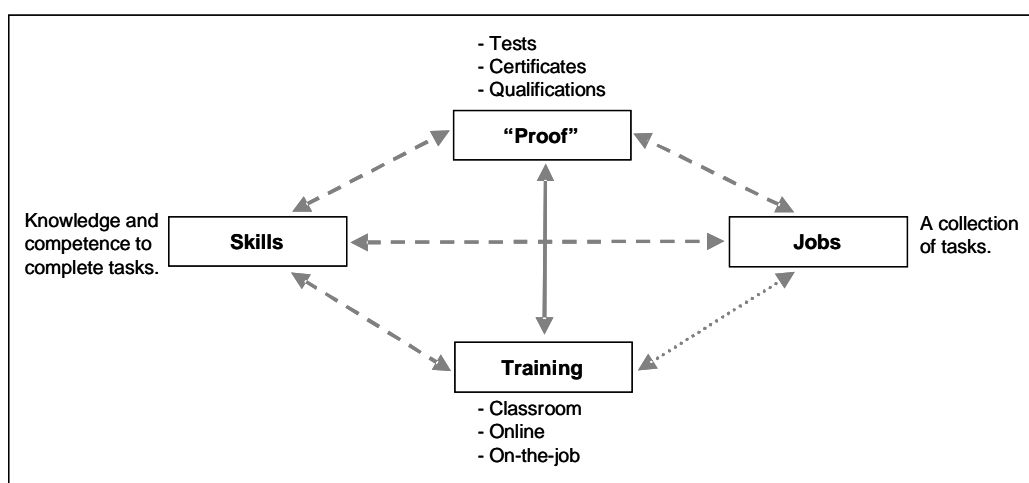
In the recent market study carried out between November 2006 and January 2007 by P.A.U. Education and the Danish Technological Institute, it was confirmed by more than 500 stakeholders that the abovementioned problems still exist and that, in order to work towards standardisation and harmonisation of the ICT sector, and to limit the offer and demand disparity in the ICT job market, tools need to be developed on a pan-European level.

The fact that ICT skills standardisation and harmonisation is an important issue in the EU is reflected in the market: the market is full of many different kinds of ICT portals, professional associations for ICT and VET issues, training and certification agencies, and projects developing ICT skills and qualification frameworks.

2.2 Problems of the ICT Sector in the EU

The structure that defines the job market and education schemes is very similar between the different sectors and in the different EU countries: different modes of education and training, academic and on-the-job, amongst others, lead to skills that the candidate acquires and needs in order to carry out a certain job. These skills are certified upon examination with certificates and qualifications.

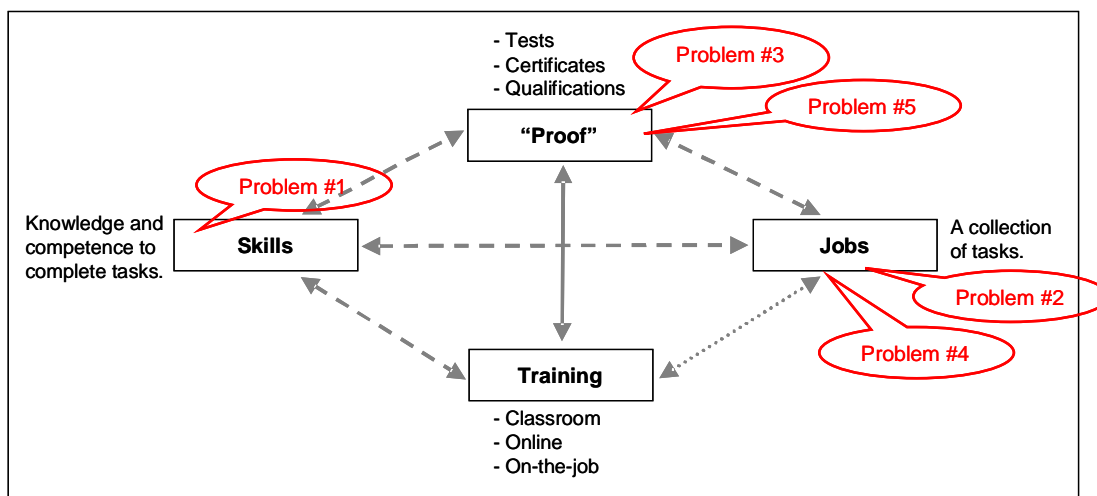
The following table visualises the scheme with its different areas influencing a candidate's preparation for a job in the ICT sector:



Source: e-Skills UK

Five main problems have been identified within the EU and the ICT sector. These problems do not concern only the EU as a whole, but also the individual EU Member States since they are currently generally unable to provide a solution to these problems on a national level.

In order to implement the solutions on a pan-European level, there has to be consensus among all Member States. The problems concern the public domain, have an impact on society at large, and are not specific to a particular sector or community.



EU Problem 1: Lack of a Pan-European e-Skills Framework

Whilst all stakeholders mention the need for a pan-European framework for ICT skills, a valid framework of ICT skills that has been accepted by all EU countries cannot be found anywhere. Some frameworks exist, but they are not updated, not accepted or under development. Also, some VET skills frameworks include ICT jobs as part of their model.

Even on a national level, clear guidelines do not always exist regarding the skills and competence units of ICT workers and professionals.

The problem does not affect only skills acquired through formal training, but ICT workers and professionals also miss out on a mechanism that makes it possible to formalise the skills they have learned on the job: many skills can be acquired not only through academic studies and courses, but also on the job. Additionally, there are soft skills that broaden the qualifications of ICT professionals and are acquiring increasing importance for ICT jobs. As has been discovered through the research, there is a need to push for new skills sets within ICT, such as project management, finance, etc. Also, social and communicative skills are necessary in ICT jobs and are not currently considered in most of the educational programmes. There are currently no tools to express all these skills formally.

All this leads to a problem for job seekers and employers: well prepared candidates cannot prove their skills when applying for a job, and are not in a position to compare their own value against the required skills in the market. On the other side, employers do not have clear guidelines that facilitate a comparison between different job candidates.

EU Problem 2: Lack of a True EU-wide ICT Job Market

This shortcoming affects all ICT and ICT-related jobs in a broad sense, including ICT companies and ICT user companies. Whilst different private and EU Commission-sponsored portals offer a broad range of job seeking tools, the lack of clear guidelines and skills and qualification frameworks impedes the mobility of job candidates between the different EU countries.

A framework in which candidates and employers are able to find clear job descriptions that can be understood by all EU citizens, stating clearly what skills and competences and what qualifications are required for a certain job, is needed in order to create EU-wide job mobility.

The EU-wide job market would not only benefit employees, who could take advantage by having access to the different EU job markets and who could enjoy different work environments, but also employers, who could choose from a broader pool of ICT professionals.

EU Problem 3: Lack of a Common ICT Qualification Framework

A qualification framework provides an overview of all possible tests, certificates and evidence of qualification/competence that an employee can acquire during his/her career

through on-the-job training, official and formal and informal studies and/or non-formal training courses. As seen in problem 1, a skills framework for ICT workers and professionals does not exist on an EU level, many EU countries do not have a national qualification framework and, currently, a pan-European qualification framework does not exist at all.

Hence, many employees have no proof of their abilities, which makes it more difficult to change jobs, even on a national level. Employers, on the other hand, have no tools to ensure and compare the necessary qualifications of job candidates.

In order to create a Europe-wide job market, such a qualifications framework would be necessary to define qualifications on a pan-European level. Hence, the problem impedes an EU-wide job market, and there are no tools to translate and adapt necessary qualifications of the single EU countries into pan-European standards.

EU Problem 4: Need to make ICT Professions more attractive

A need to promote ICT career paths has been identified in order to ensure the future of such a strategically important sector for the EU, considering the productivity of European ICT and ICT user companies.

The ICT sector suffers from a poor image. In the market study carried out by P.A.U. Education and the Danish Technological Institute, the following reasons were repeatedly cited to be reasons for the low popularity of the ICT sector and occupation:

- Candidates have poor knowledge of careers opportunities
- ICT occupations are considered as jobs that exclusively contain programming work
- No variety in ICT jobs
- Many jobs hold limited team-work and interaction with colleagues
- No awareness among candidates of the importance of ICT in the economy and daily life

Younger people in particular do not feel attracted by the sector when it comes to deciding upon their careers. Overly technical language used by ICT portals or the places providing ICT information and the lack of knowledge of required skills, mainly soft skills and work content, represent barriers for young people.

EU Problem 5: Standardisation and Homogenisation of Titles and Certification

There are two ways of receiving qualifications, titles and certification in ICT:

- § Official educational institutions, generally universities
- § Unofficial educational and training institutions (eg. CISCO or Microsoft certifications)
 - a) Belonging to ICT companies
 - b) Independent education and training institutions

Whilst titles and certification achieved through an official educational institution are recognised on a national, and also on a pan-European, level, titles and certificates issued by unofficial education and training institutions are not officially recognised.

Within the sector, on-the-job training and education through unofficial education academies are characteristically as common and appreciated as official university studies. The need for life-long learning is one of the main characteristics of the ICT market. Therefore, there is a need for standardisation and homogenisation of titles and certification, in order to make the knowledge acquired throughout a professional's career comparable on a national, as well as on a pan-European, level.

2.3 Existing Portals and Frameworks

The market lacks pan-European facilities that help to overcome the lack of e-skills and qualification frameworks, work towards standardisation of titles and certification and help to promote ICT career paths, fostering job mobility.

Industry associations and EU-sponsored projects are working on the development of such frameworks on national and pan-European level, and are also contributing to the dissemination of valuable information about the processes in the ICT domain through Internet portals, reports and events.

Private and EU-sponsored portals can be found that offer tools for an international job market, but the lack of frameworks and standardisation limits their efficiency for the ICT sector, and for ICT-related jobs.

Within the European Union, most of the Member States offer several approaches through ICT portals and the creation of frameworks, news and information. Some general VET oriented pan-European approaches also exist in the market, but are not able to solve the specific ICT problems.

Some complete ICT skills portals can be identified worldwide, but with national reach only (UK, Germany, USA and Australia). Their main attractiveness lies in offering their users the necessary tools to express their skills and qualifications according to guidelines, at the same time as offering companies guidelines to seek candidates.

Regarding the availability of information, despite a broad range of information and documentation on ICT jobs, educational guidelines, skills, certification and standardisation issues being offered through the different databases and newsletters of most of the specialised portals and websites, a reference point for ICT-related information on an EU-wide basis cannot be found.

The following tables provide an overview of the most important ICT portals and frameworks, but also show their incompleteness when it comes to covering all the services that stakeholders consider necessary in order to find solutions to problems.

EXISTING PORTALS:

TECH CAREER COMPASS (CompTIA)					
Conclusions	E-Skills Framework	US-wide ICT Job Market	ICT Qualification Framework	Image of the ICT Sector	Standardisation of Titles
	ü	ü	ü	ü	ü
	+			-	
- All stakeholder needs are met			-Some of the different user types lead to the same information areas -USA wide (national) reach only		
-The Tech Career Compass offers solutions to all the identified p roblems and is a good standard for the development of the ICT Skills and Career portal					

*Remark: Revision in process

IT SKILLS HUB (AUSTRALIA)					
Conclusions	E-Skills Framework	nation-wide ICT Job Market	ICT Qualification Framework	Image of the ICT Sector	Standardisation of Titles
	ü	ü	x	ü	x
	+			-	
-The portal builds and ideal "market place" to bring together the needs of the different stakeholders			-Even if initially divided into different stakeholder groups, the portal always leads to the same areas		
The portal is a good example for a specialized national ICT port al, bringing together the interests of the different stakeholders					

*Remark: 50% public funding was discontinued in 2005

e-Skills UK					
Conclusions	E-Skills Framework	EU-wide ICT Job Market	ICT Qualification Framework	Image of the ICT Sector	Standardisation of Titles
		x	ü	ü	x
	+			-	
-Easily understandable language for the broad public and youth -All stakeholder needs are met -Availability of links to useful tools and frameworks - Information on all ICT career related issues			-A "jungle" of links and information -UK-wide reach only		
The e-Skills UK portal is a very complete portal directed to the broad public. Its approach can serve as a good example for a the pan-European ICT Skills and Career portal					

CAREER SPACE					
Conclusions	E-Skills Framework	EU-wide ICT Job Market	ICT Qualification Framework	Image of the ICT Sector	Standardisation of Titles
	ü	x	ü	ü	x
	+			-	
<ul style="list-style-type: none"> - Attractive and easily understandable presentation of job profile definitions combined with case studies - Well structured job descriptions 			<ul style="list-style-type: none"> - Not updated since 2005 - Static portal (Publication of document) 		
<p>The Career Space portal is clearly directed to citizens and younger people, combining technical and soft skills required by the different job profiles</p>					

eSCC (European Skills Certification Consortium)					
Conclusions	E-Skills Framework	EU-wide ICT Job Market	ICT Qualification Framework	Image of the ICT Sector	Standardisation of Titles
	under development	x	under development	x	under development
	+			-	
<ul style="list-style-type: none"> - The portal provides a well selected list of links to interesting related portals and web pages 			<ul style="list-style-type: none"> - Under development: Actually non of the identified EU problems is solved; the portals rather informs about the intentions of the consortium but does not solve problems as of today 		
<p>Once the European Skills Certification Consortium reaches its objectives, it will probably give a valuable contribution to solve the identified problems of skills and qualification frameworks and to the standardization of certifications and titles</p>					

KIBNET					
Conclusions	E-Skills Framework	EU-wide ICT Job Market	ICT Qualification Framework	Image of the ICT Sector	Standardisation of Titles
	ü	x	ü	ü	x
	+			-	
<ul style="list-style-type: none"> - Clear information on career paths - Skills and Qualifications Framework 			<ul style="list-style-type: none"> - No assessment or CV development tools - Frameworks developed for the German market only 		
<p>The portal has developed and publishes a very useful ICT skills, qualification and certification framework. It also offers a link to the different APO -IT framework</p>					

CEDEFOP (European Centre for the Development of Vocational Training)						
Conclusions	E-Skills Framework	EU-wide ICT Job Market	ICT Qualification Framework	Image of the ICT Sector	Standardisation of Titles	
	X	X	X	X	X	
	+			-		
	-Broad range of information on VET and ICT related issues - Links to important related portals			-Not an ICT but VET portal -No assessment or CV development tools -No framework or reference		
<p>§ The web page is rather limited to providing information and a database for ICT educational and VET related issues</p> <p>§ The portal links to the European Training Village (ETV) and Europass which offer tools and frameworks to VET topics</p>						

PORTALS SUMMARY						
		E-Skills Framework	Image of the ICT Sector	ICT Qualification Framework	EU-wide ICT Job Market	Standardisation of Titles
National	Tech Career Compass	ü	ü	ü	ü	ü
	ICT Skills Hub	ü	ü	x	ü	x
	E-Skills UK	ü	ü	ü	x	x
	Kibnet	ü	ü	ü	x	x
Pan-European	Career Space	ü	ü	ü	x	x
	eSCC	under development	x	under development	x	under development
	CEDEFOP	x	x	x	x	x
<p>Only one complete ICT Skills and Career portal could be identified, in the USA. This confirms the feasibility of a pan-European Skills and Qualifications portal.</p>						

As a summary, the following conclusions can be drawn regarding the existing ICT portals in the market:

- § Most of the portals are aimed at all stakeholder groups, from citizens and employers to public institutions.
- § None of the portals treat with the issue of standardisation and harmonisation of titles and certification.
- § All portals agree on the importance of recognition of on-the-job acquired skills vs. academic education and training courses.

- § Many of the portals do not develop own frameworks, but provide links to developed national frameworks and certification agencies.
- § The only complete and living portal that addresses all five EU problems was be identified in the USA (Tech Career Compass).
- § There are some existing portals in line with the ICT Skills and Careers portal, but they have not yet been implemented or updated.
- § Even if most of the areas are covered on a national level in some countries, there is room, and the need, for a pan-European Skills and Careers portal and indeed in some countries like Malta, Cyprus, etc. there is next to nothing available.

EXISTING FRAMEWORKS:

SFIA (The Skills Framework for the Information Age)			
Conclusions	E-Skills Framework	ICT Qualification Framework	Standardisation of Titles
		ü	x
	+		-
	<ul style="list-style-type: none"> -Directed to all possible stakeholders -Well organized and easy to understand -Detailed consideration of soft skills -Regular updates of framework 		<ul style="list-style-type: none"> -The framework only refers to skills and does not include qualifications -Format concentrates on job descriptions rather than technical requirements
	<p>Whereas the SFIA framework defines well the necessary soft skills, technical requirements are not detailed in the framework</p>		

BCS (The British Computer Society)			
Conclusions	E-Skills Framework	ICT Qualification Framework	Standardisation of Titles
		x	ü
	+		-
	<ul style="list-style-type: none"> -Well structured framework 		<ul style="list-style-type: none"> -The framework does not consider previously achieved titles and certifications -Limited choice of professions -Framework only valid with MTP examination
	<ul style="list-style-type: none"> - Rather than a standalone framework, the MTP is the basis for a professional certification - The BCS offers MTP as an additional option of certification, whereas at the same time it promotes ECDL, ISEB and SFIA certifications in its portal 		

APO-IT/ AITTS

	E-Skills Framework	ICT Qualification Framework	Standardisation of Titles
Conclusions	ü	ü	x
	+		-
	<ul style="list-style-type: none"> -Detailed framework also including soft skills -Citizen and industry oriented -The framework can be used as the basis for certification through the independent agencies Cert-It and GPS-cert 		<ul style="list-style-type: none"> - The framework does not consider previously achieved titles and certifications -Even if Cert-IT is internationally accepted, the framework has national reach only
	<p>The framework defines the job profiles in details. It is the basis for an examination through independent certification agencies</p>		

EUQuaSIT

	E-Skills Framework	ICT Qualification Framework	Standardisation of Titles
Conclusions	ü	ü	x
	+		-
	<ul style="list-style-type: none"> - Very complete approach -Valuable approach for an EU-wide framework 		<ul style="list-style-type: none"> -Only supported by 5 EU-countries - Static framework (not updated) - Complicated to read - Does not consider other (national) frameworks
	<p>The EUQuaSIT framework considers the three pillars: It combines skills and qualifications gained through work and employment, training qualification and education structures</p>		

CIGREF (Club de Grandes Entreprises Françaises)

	E-Skills Framework	ICT Qualification Framework	Standardisation of Titles
Conclusions	ü	ü	x
	+		-
	<ul style="list-style-type: none"> -Developed on basis of industry needs -Regular updates of framework 		<ul style="list-style-type: none"> -National reach only
	<p>The CIGREF framework is the direct answer of major ICT user companies' need to improve the ICT job market</p>		

ECABO (Centre of Expertise on Vocational Education, Training and Labor Market)

	E-Skills Framework	ICT Qualification Framework	Standardisation of Titles
Conclusions	ü	ü	x
	+		-
	<ul style="list-style-type: none"> - Citizen oriented - Clear definition of qualification profile by embedding into general MBO framework, which is organized by levels 		<ul style="list-style-type: none"> - Implemented in general MBO of different sectors; not ICT specific and therefore reduced to most common profiles - National reach only
	<p>The ECABO framework is a typical example of an ICT frameworks embedded into a general VET framework</p>		

NWCET (National Workforce Center for Emerging Technologies)

Conclusions	E-Skills Framework	ICT Qualification Framework	Standardisation of Titles
		75\$	
	+		-
	<p>- The NWCET is said to be an important reference framework, and most likely has much value. Still, as a user without subscription I cannot access the framework.</p>		<p>- Not accessible without subscription – no visibility - Last update 2003 - National reach only</p>
	<p>It is doubtful until what degree a framework can serve as a reference for the industry sector if it is not freely accessible by all interested users and stakeholders</p>		

EQF (European Qualifications Framework for Lifelong Learning)

Conclusions	E-Skills Framework	ICT Qualification Framework	Standardisation of Titles
		Under development	Under development
	+		-
	<p>- Development considers all existing frameworks in the EU - Real pan-European tools</p>		<p>- Under development - General Qualification Framework not ICT specific - Translation device, not skills, qualifications or certifications framework</p>
	<p>§ THE EQF is not an ICT skills qualification and certification framework, but a translation device § Once fully developed it might possibly serve as a very useful bridge until pan-European ICT frameworks are available</p>		

FRAMEWORKS SUMMARY				
		E-Skills Framework	ICT Qualification Framework	Standardisation of Titles
International, pan-eu aim	SFIA	ü	x	x
	BCS	x	ü	x
	APO-IT/ AITTS	ü	ü	x
	EQF	Under development	Under development	x
	EUQuaSIT	ü	ü	x
National	CIGREF (F)	ü	ü	x
	ECABO (NL)	ü	ü	x
	NWCET (USA)	ü	ü	x

In all national frameworks skills and qualifications are combined, whereas two of the international frameworks only deal with one of the issues.

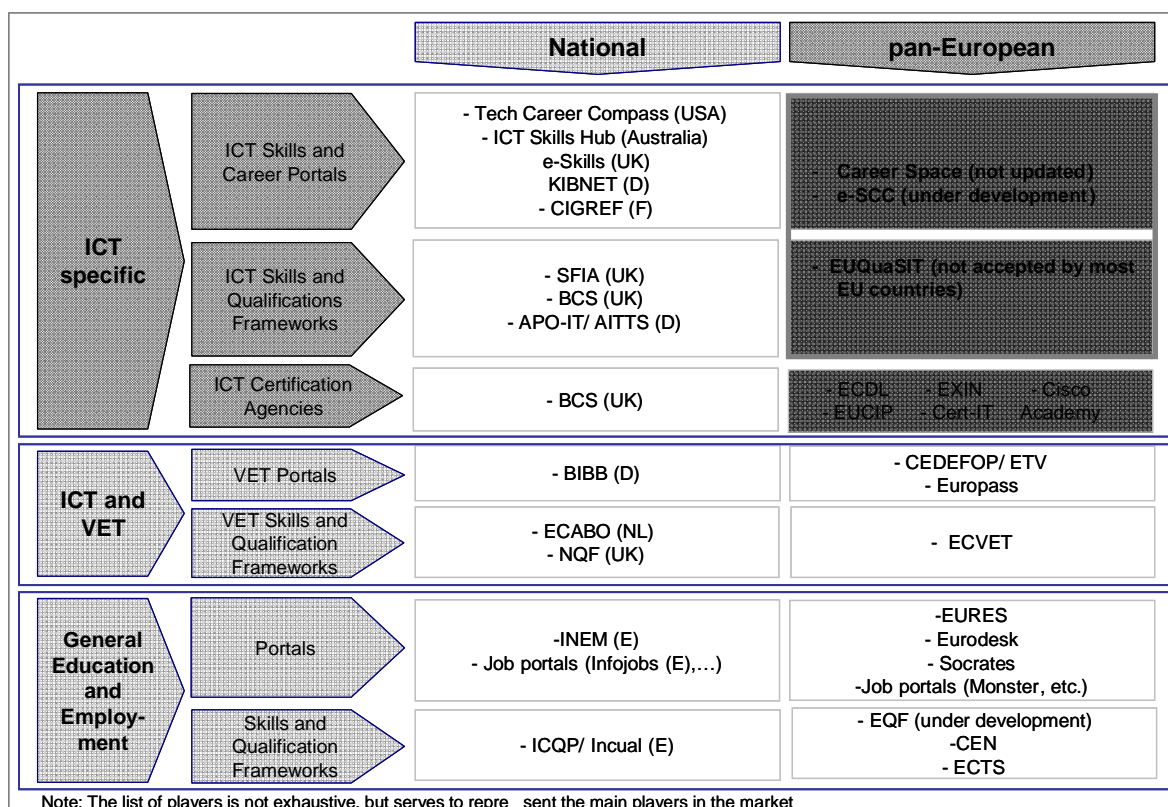
The market environment of frameworks can be summarised as follows:

- § None of the existing frameworks deal with standardisation of titles and certification.
- § Two of the internationally recognised frameworks are UK products; the third one offers a translation into English. It is suspected that they are internationally recognised only through language.
- § Some of the frameworks are developed with the purpose of building a basis for certification agencies.

3. POSITIONING

As the following graph shows, the area for the ICT Skills and Careers portal is covered by portals and frameworks that are under development, not updated or not accepted by the majority of EU countries.

On a national level, the portal can add value to shareholders by building an EU-wide meeting point between the different national portals and frameworks, even in countries that are well covered with portals and frameworks.



Whilst in the long term, hopefully, a common pan-European framework will bring together skills sets, qualifications and standardised titles and certification, in the short and medium term, there is a need to bridge the identified problems by developing different tools until such frameworks are implemented.

As the most logical proposal, the European Commission DG Enterprise requires a European Skills and Careers portal developed, according to the **tender**, in accordance with the following main objectives:

- § To foster ICT skills and **attractive career paths** with a view to reducing skills shortages and disparities in the EU.
- § To bring added value and foster synergy between relevant existing portals and initiatives and to **strengthen the process of cooperation for ICT skills definitions** and standards in the EU.
- § To promote ICT skills and job roles definitions and standards through multi-stakeholder partnerships.
- § To provide information to individuals, employers, learning providers and careers advisors to **better meet the demand for ICT skills**.
- § To help individuals to **acquire new ICT skills by mapping ICT training, qualifications and certification** to job roles.
- § To provide a cooperation platform for industry and education/training organisations to improve **human capital management** and **training programmes**.
- § To **improve the image of the ICT industry** and set quality standards for individuals and employers.
- § To provide access in all of the languages of participating countries to:

- § Participating country ICT occupational system and ICT careers information, ICT skills education and training offers, ICT job banks, and information on how to get ICT job permits.
- § A European e-Competence Framework under development in the scope of CEN/ISSS6.
- § A guide for ICT skills and careers development in Europe.
- § An occupational matrix offering a map of formal educational and vocational ICT training credits, ICT industry certification and measures to facilitate credit transfer and labour mobility.
- § A system facilitating credential recording and maintenance.
- § Models facilitating secondary/post-education/industry pathways.
- § Include accessibility for disabled people.

The ICT Skills and Careers portal will position itself as offering all of the tools and information all different users and stakeholders expect to find. It will be limited to the ICT sector and ICT intensive sector (eg. Finance, business services, health, etc.) only and will not deal with any issues not directly related to the ICT domain. All the information published will be relevant on a pan-European level. Its main characteristics will be:

- a) It will be pan-European.
- b) It will develop all services and tools according to the skills and qualification frameworks.
- c) It will boost the ICT job market.
- d) It will be complete: covering all the tools and information areas that the different stakeholder groups hope to find on the portal.

As a first step, we suggest that the ICT Skills and Careers portal focus on citizens and companies (ICT and ICT user companies) as main target users: citizens and companies are the focus of the job market. Whilst citizens mainly require CVs and career development tools, both citizens and companies have a special need for skills and qualification frameworks. The ICT Skills and Careers portal will focus primarily on offering such tools and frameworks to its target user group.

The overall objective to create a pan-European framework is, in the short run, difficult to carry out, and the market positioning of the ICT Skills and Careers portal should not be based on the development of such a framework. In the short run, the ICT Skills and Careers portal will link job profiles of different imported national skills and qualifications frameworks. With these frameworks, users will be able to gain information about the skills and qualifications of each of the job profiles defined in the framework, considered to be valid for the EU as a whole.

Since it will be offered in all EU languages, it will be the only framework used by users from all EU Member States, and therefore will build a first step towards the use of a common framework.

Once EU-wide skills and qualification frameworks are developed, the ICT Skills and Careers portal will be the perfect place to publish such a framework. Meanwhile, it will have gained the position of being *the* EU-wide point of reference for the ICT domain.

In the event that, for unforeseeable reasons, no EU-wide ICT skills and qualifications frameworks are developed successfully, the ICT Skills and Careers portal should start developing other complementary services and/or try to joint efforts with the current stakeholders in order to facilitate a deal. In any case this is a serious risk that needs to be taken into account.

The portal will also help citizens with the development of their CVs, offering a skills gap analysis and a career planning tool. Such tools can hardly be found on the European market. Not only are they extremely attractive to users, but they also help considerably to meet supply and demand in ICT jobs and therefore improve the ICT job market.

In general, the portal will use a language that is easily understandable by all users and make the ICT sector and ICT occupations more attractive to young people. Information on job contents through framework case studies and best practices will help to improve the image of the sector.

Since a need to push for new skills sets within ICT, such as project management, finance, etc. has been discovered, along with the social and communicative skills necessary in ICT jobs which are currently not considered in most of the educational programmes, the ICT Skills and Careers portal will help to fill this gap by creating awareness through career guidelines and publication of ICT experiences.

Furthermore, all stakeholder groups will be able to find in the ICT Skills and Careers portal a point of reference for all important documents and resources on an EU-wide basis; the portal will also help to foster cooperation among the various stakeholders of the different EU Member States.

By publishing all relevant information about trends and developments in the domain, the ICT Skills and Careers portal will contribute to an understanding between all stakeholders. This is very important for the goal to achieve EU-wide harmonisation in ICT qualifications, since public bodies, educational institutions and job agencies need to design their programmes in a homogeneous way, and the ICT Skills and Careers portal will contribute by identifying needs and changes of guidelines in the sector.

The ICT Skills and Careers Portal will not reflect the opinion of one or several of the stakeholder groups, but will always, as an independent portal, ensure that the information published and tools employed serve to improve the ICT sector (including ICT intensive sectors) as a whole and support the EU project.

4. TARGET MARKET

The target market for the ICT Skills and Careers Portal is defined by a broad range of stakeholders. Whilst the characteristics of the various stakeholders are quite different, they all have a common interest in the harmonisation and standardisation of ICT guidelines and qualifications and in being informed about progress.

The target market will include all countries belonging to the European Union. Additionally, it will also reach non-EU European countries, and countries interested in following the development of the EU market, for example, the USA.

Currently, those stakeholders interviewed in the market research study use ICT portals and initiatives as follows:

- § For almost all stakeholders, one of the key purposes of using the resources is “the trends and reports on developments in ICT with relevance to new ICT skill demands”.
- § Employee and trade organisations are the most frequent users of ICT skills and careers resources, generally for facilitating dialogue with employer/employee organisations about skills needs/disparities, and for ensuring transparency regarding job roles, job functions, qualifications and certification.
- § Government organisations are among the most frequent users of ICT skills and careers resources. Their main motive is to give access to new research on ICT skill demands, trends, etc., and also to facilitate definitions and standards for ICT skills and job roles and promote awareness and interest in ICT education and careers.
- § Career counselling and recruitment agencies use the resource relatively often, generally to facilitate collaboration with educational and training providers about skills needs/disparities.
- § ICT and ICT user companies do not use ICT portals and frameworks very frequently. If they do, they generally use the service for facilitating strategic collaboration with educational institutions and training providers, or seeking course options for their employees.
- § Educational institutions use ICT skills and resources only rarely, normally in order to facilitate dialogue with other educational and training providers about skills needs/disparities and curriculum development.

All stakeholder groups agree on the need for an ICT skills and careers portal, and are expected to use the ICT Skills and Careers portal, subject to it meeting the needs of all the different stakeholders and fostering collaboration between stakeholders towards common goals.

Whilst all stakeholders need common skills and qualification frameworks, the different stakeholder groups have different preferences when it comes to the additional services and tools offered by the ICT Skills and Careers portal:

- § Multinational companies (ICT and ICT user companies) and educational institutions are most interested in solving all five of the identified problems.
- § Young and female citizens are the main objective when it comes to promoting the ICT sector.

§ Stakeholders are highly affected by this problem since young, female and other students are needed for the future of sector.

§ Standardisation of titles and certification is an issue for those stakeholders working internationally.

The following table summarises the main interests of the different stakeholders:

		E-Skills Framework	EU-wide ICT Job Market	ICT Qualification Framework	Image of the ICT Sector	Standardisation of Titles
Citizens	Young	X	X	X	Ü	X
	Females	X	X	X	Ü	X
	Non-IT-certified professionals	Ü	X	Ü	X	X
	IT-certified professionals	X	Ü	X	X	Ü
ICT Companies	Multinationals	Ü	Ü	Ü	Ü	Ü
	SMEs	Ü	X	Ü	Ü	X
ICT User Companies	Multinationals	Ü	Ü	Ü	Ü	Ü
	SMEs	Ü	X	Ü	Ü	X
Employment Agencies	Public	Ü	X	Ü	Ü	X
	Private head-hunters	Ü	Ü	Ü	Ü	Ü
Educational Institutions and Agencies	Public institutions	Ü	Ü	Ü	Ü	Ü
	Private agencies	Ü	Ü	Ü	Ü	Ü
Unions	Unions	Ü	X	Ü	X	X
Public Administrations	E-skills advanced countries	Ü	X	Ü	X	Ü
	E-skills developing countries	Ü	X	Ü	X	Ü

4.1 Citizen

Citizens interested in the portal will be students, ICT practitioners or people working in ICT-related jobs. They are generally interested in keeping up to date about their the opportunities in ICT occupations, their value on the market, planning and developing their careers and obtaining information about the development of the job market in the ICT intensive sectors. This group also includes professionals and students who intend to work in the ICT sector or ICT-related jobs, or who are planning a career in the sector. With the ICT Skills and Careers portal, they will be able to compare their career paths on an international level.

Since the ICT sector is also very attractive for the integration of unemployed and disabled workers, and at the same time is not attractive to women, these groups of citizens can be addressed directly to take advantage of the tools and information that the ICT Skills and Careers portal will offer them.

For all citizens, the following different needs will be covered through the ICT Skills and Careers portal:

- 1) Career guidance and CV development for ICT professionals.
- 2) Career guidance for students and future ICT professionals.
- 3) Information about a professional's market value.
- 4) Availability of skills and qualifications frameworks and guidelines.
- 5) Being informed about the sector in general.

Target	Issue	EU Problem	Stakeholder Interest	Concurrent Portal
Citizens				
Young	Under 18s about to decide what to study	#4 Promote ICT	- Educational institutions - SMEs and multinationals (ICT and ICT user companies)	Career Space Eurodesk
Females	How to increase their interest in ICT studies and jobs	#4 Promote ICT	- Educational institutions - SMEs and multinationals (ICT and ICT user companies)	Career Space Eurodesk
Non IT-certified professionals	Hard to prove skills and qualifications and to apply for new jobs	#1 Skills Framework #3 Qualification Framework	- ICT education and training institutions - Certification agencies - SMEs and multinationals (ICT and ICT user companies)	EUCIP EXIN CERT-IT etc.
IT-certified professionals	EU-wide CV and career development	#2 EU job market #5 Standardisation of certification	- ICT education and training institutions - Certification agencies - Multinationals	Job portals (Monster, Infojobs, etc.)

4.2 ICT companies

ICT companies are one of the main stakeholders, since basically all their employees belong to the group of ICT professionals. For these companies, it is extremely important to be able to rely on clear guidelines and standardisation of skills and qualifications in order to make their HR management easier and more efficient.

A significant number of ICT companies are multinational enterprises and, therefore, the harmonisation and standardisation of skills, qualifications and titles on an EU-wide (and even world-wide) basis is of major importance for these companies. Cross-border recruitment and development information related to the sector is very valuable information for these companies. Also, the exchange of opinions in the Participatory

Workspace can help these companies to draw important conclusions, since they receive first-hand feedback from the workforce and from other companies in the sector.

Target	Issue	EU Problem	Stakeholder Interest	Concurrent Portal
ICT Companies				
Multinationals	<ul style="list-style-type: none"> - HR departments have difficulties comparing candidates - Limited pool of candidates - Hard to move employees between the different EU countries 	<ul style="list-style-type: none"> #1 Skills Framework #2 EU job market #3 Qualification Framework #4 Promote ICT #5 Standardisation of titles 	<ul style="list-style-type: none"> - Employment agencies - Certification agencies - Educational institutions and agencies - Unions 	Not found
SMEs	<ul style="list-style-type: none"> - HR managers have difficulties comparing candidates - Limited pool of candidates - Often offering ICT job profiles combined with several other areas of responsibility 	<ul style="list-style-type: none"> #1 Skills Framework #3 Qualification Framework #4 Promote ICT 	<ul style="list-style-type: none"> - Employment agencies - Certification agencies - Educational institutions and agencies - Unions 	National portals and frameworks: e-Skills UK CIGREF KIBNET SFIA etc.

4.3 ICT User Companies

ICT user companies generally offer a broad scope of ICT-related jobs. Not only are ICT skills necessary in a very broad range of jobs that do not belong to the ICT domain, but also the increasing importance of skills sets that combine ICT jobs with other skills, such as marketing, finance, etc. makes ICT-related issues an interesting topic for almost all companies.

Multinational companies in particular require EU-wide standardisation of skills, qualifications and titles in order to maximise the efficiency of their HR management and gain access to a wider pool of job candidates.

Target	Issue	EU Problem	Stakeholder Interest	Concurrent Portal
ICT User Companies				
Multinationals	<ul style="list-style-type: none"> - HR departments have difficulties comparing candidates - Limited pool of 	<ul style="list-style-type: none"> #1 Skills Framework #2 EU job market #3 Qualification 	<ul style="list-style-type: none"> - Employment agencies - Certification agencies 	Not found

	candidates - Hard to move employees between the different EU countries	Framework #4 Promote ICT #5 Standardisation of titles	- Educational institutions and agencies - Unions	
SMEs	- HR managers have difficulties comparing candidates - Limited pool of candidates - Often offering ICT job profiles combined with several other areas of responsibility	#1 Skills Framework #3 Qualification Framework #4 Promote ICT	- Employment agencies - Certification agencies Educational institutions and agencies - Unions	National portals and frameworks: e-Skills UK CIGREF KIBNET SFIA etc.

4.4 Employment Agencies

Employment agencies are also one of the main stakeholders targeted by the ICT Skills and Careers Portal. Despite the fact that they might consider the portal to be a competitor, they will in reality benefit from its services: whilst citizens exchange opinions and ask for advice in the Participatory Workspace, employment agencies gain a first-hand insight into the ICT job market all over Europe. But mainly, the information spread through the Newsletter, e-Publication and Resource Database will be very helpful for employment agencies to gain information about the latest trends in the sector and the job salaries all over the EU.

The creation of a skills and qualifications framework will greatly facilitate the work of the employment agencies, and they will directly benefit from the expected promotions of the ICT sector and occupations.

Target	Issue	EU Problem	Stakeholder Interest	Concurrent Portal
Employment Agencies				
Public	- Cannot “sell” candidates without skills and qualifications certification - If the sector had a better image, there would be increased movement of candidates	#1 Skills Framework #3 Qualification Framework #4 Promote ICT	- SMEs (ICT and ICT user companies) - Multinationals (ICT and ICT user companies)	ECDL EUCIP EXIN CERT-IT etc.
Private Head-hunters	- Difficult to “sell” non IT-certified candidates	#1 Skills Framework #2 EU job market #3 Qualification	- SMEs (ICT and ICT user companies) - Multinationals	ECDL EUCIP EXIN

	- Cannot work on a pan-European level due to lack of standardisation of certification	Framework #4 Promote ICT #5 Standardisation of titles	(ICT and ICT user companies)	CERT-IT etc.
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4.5 Educational Institutions and Agencies

Educational institutions, such as universities, polytechnics, colleges and other ICT academies, also have a special interest in the development of the ICT sector. Their interest in the issues is twofold. On the one hand, they are intense ICT users as an institution and, on the other hand, they have an academic and financial interest. ICT-related markets develop constantly, and it is of major importance for ICT competitiveness that ICT educational programmes will be updated and adapted constantly to the market. First of all, the constant development of directly ICT-related issues requires a constant adaptation of academic plans, programmes and activities. Additionally, ICT qualifications increasingly include more skills in addition to the ones related specifically to ICT subjects.

In order to adapt ICT qualifications to the market needs, educational programmes should offer wider skills sets, which will also make the sector more attractive to future students. Thanks to all the information it provides, the ICT Skills and Careers portal will be an indispensable tool for educational institutions. To work towards the common goal of harmonisation and standardisation of qualifications and to make the ICT sector more attractive to future candidates, educational institutions will have to take the first step by harmonising educational programmes.

Not only will those educational institutions that offer ICT education be addressed through the ICT Skills and Careers portal, but information on ICT skills will also be spread among secondary schools to guide young people towards ICT and ICT-related careers. It is important for this kind of institution to always be up to date with the possible future ICT related careers of students in order to provide helpful guidance.

There is also a broad range of private/unofficial educational and training agencies in the market offering courses and education in the ICT sector. Just like the official educational institutions, these agencies need to constantly adapt their academic plans to the market.

It is essential, for the functioning of their business, that they always offer academic programmes adapted to the market needs, otherwise they would lose students/clients. Hence, in order to complement university education, they need to attract students by always offering the latest updated programmes in the market. Consequently, they are highly affected by the progress in the harmonisation and standardisation of ICT skills and qualifications, and by the changes in skills sets and job definitions that the market requires.

Target	Issue	EU Problem	Stakeholder Interest	Concurrent Portal
Educational Institutions and Agencies				
Public Educational Institutions	<ul style="list-style-type: none"> - Need to adapt academic programmes and plans to market needs - Need to encourage young citizens to study ICT programmes 	<ul style="list-style-type: none"> #1 Skills Framework #2 EU job market #3 Qualification Framework #4 Promote ICT #5 Standardisation of titles 	<ul style="list-style-type: none"> - Citizens - SMEs (ICT and ICT user companies) - Multinationals (ICT and ICT user companies) 	National portals and frameworks: e-Skills UK CIGREF KIBNET SFIA etc.
Private Educational Agencies	<ul style="list-style-type: none"> - Need to adapt the courses offered to market needs 	<ul style="list-style-type: none"> #1 Skills Framework #2 EU job market #3 Qualification Framework #4 Promote ICT #5 Standardisation of titles 	<ul style="list-style-type: none"> - Citizens - SMEs (ICT and ICT user companies) - Multinationals (ICT and ICT user companies) 	National portals and frameworks: e-Skills UK CIGREF KIBNET SFIA etc.

4.6 Unions

In order to be able to successfully monitor working conditions and salary issues, it is important that the unions of the ICT sector and ICT user industries are always up to date with the latest information on skills and qualifications requirements, as well as the wage and salary statistics of ICT practitioners and workers employing ICT in their jobs. The different kinds of information published by the portal will provide statistics, information on wages and salaries related to job qualifications, and best practices throughout the EU. Unions are one of the main stakeholders expected to benefit from all four of the areas of the ICT Skills and Careers portal. Furthermore, unions and employer organisations contribute to the development of new educational programmes within ICT and need a source of inspiration from other countries in Europe.

Target	Issue	EU Problem	Stakeholder Interest	Concurrent Portal
Unions				
Unions	<ul style="list-style-type: none"> Control working conditions and salary issues of union members Contribute to the development of new educational programmes 	<ul style="list-style-type: none"> #1 Skills Framework #3 Qualification Framework 	<ul style="list-style-type: none"> - Non IT-certified professionals - IT-certified professionals 	Not found

4.7 Policy-Makers (National Ministries and Regional Governments)

Policy-makers play a key role in terms of progress in the harmonisation and standardisation of skills and qualifications. A first step towards this goal will be to adapt national and regional guidelines to the European standards. It will therefore be very useful for the policy-makers to find a pan-European point of reference in the ICT Skills and Careers portal. Through the different publications of news and documentation, it will also be very helpful for the policy-makers to keep constantly up to date with new developments in the domain.

National ministries and regional governments are also one of the first places where citizens seek advice when looking for information about job qualifications and other related issues. The ICT Skills and Careers portal will be a valuable source of this information, and therefore policy-makers might be interested in redirecting queries to the portal.

On the other hand, the portal will gain much credibility and importance if public bodies refer to the portal as a reliable source of information.

Target	Issue	EU Problem	Stakeholder Interest	Concurrent Portal
Public Administrations				
e-skills Advanced Countries	Adapt national guidelines on a European level	#1 Skills Framework #3 Qualification Framework #5 Standardisation of certification	- Employment agencies - Certification agencies - Multinationals (ICT and ICT user companies) - SMEs (ICT and ICT user companies) - IT-certified professionals	National portals and frameworks: e-Skills UK CIGREF KIBNET SFIA etc.
e-skills Developing Countries	Use European guidelines and implement on a national level	#1 Skills Framework #3 Qualification Framework #5 Standardisation of certification	- Employment agencies - Certification agencies - Multinationals (ICT and ICT user companies) - SMEs (ICT and ICT user companies) - IT-certified professionals	National portals and frameworks: e-Skills UK CIGREF KIBNET SFIA etc.

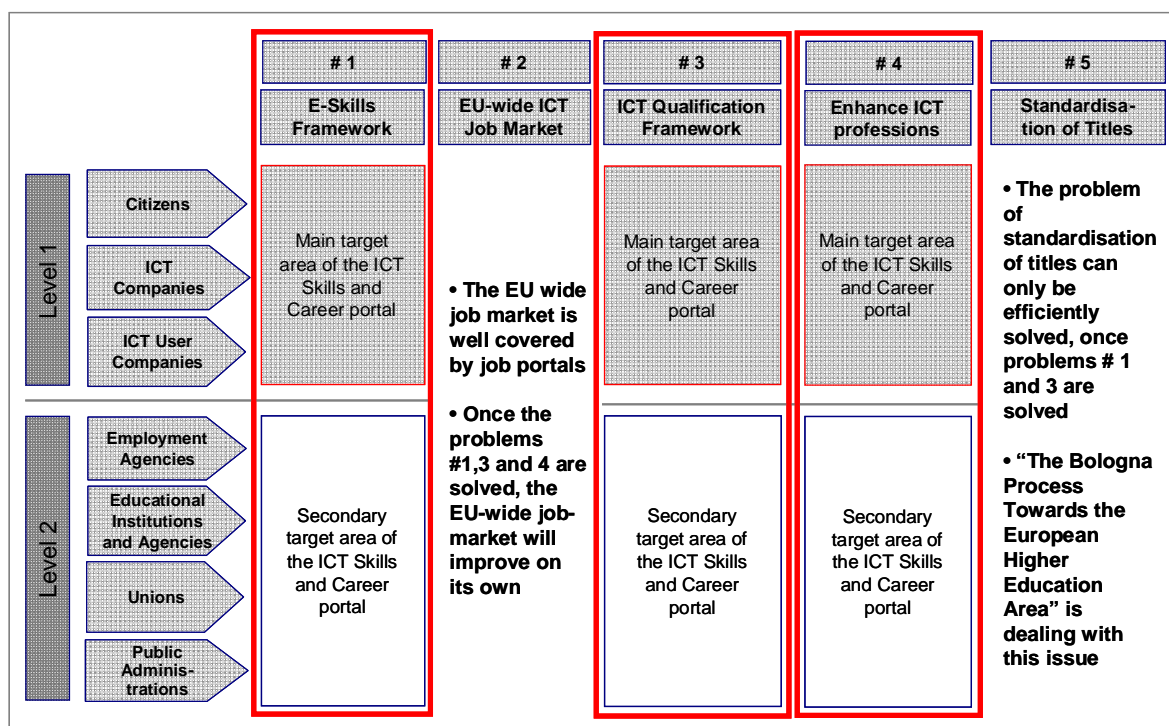
4.8 Others

In addition to all the abovementioned users and stakeholders, others, such as associations and organisations (for example the ICT students association, national user organisations, or other national organisations) can be added to the interested group of users of the ICT Skills and Careers portal.

There also are many ongoing projects in various European countries as well as European projects, which could use the pan-European ICT Skills and Careers portal as a common point of reference. The information obtained on the portal can be used by the projects for further development.

5. UNIQUE VALUE PROPOSITION

Initially, the ICT Skills and Careers portal will focus only on the identified problems 1, 3 and 4. It will be aimed at citizens and ICT companies and ICT user companies as main users, also providing services and information to the other stakeholders.



The stakeholders not considered as main target will benefit from the portal through the different kinds of resources and information. The Discussion Forum in the Participatory Workspace will also be a valuable source of first-hand information and opinions for all stakeholders, even if they do not participate actively.

The ICT Skills and Careers portal aims to be a pan-European portal. Therefore, all information published through the different areas will contain information on ICT issues in all EU countries, to the extent possible, select the one which considered to be relevant for end-users on a pan-European level. As an exception, the Resource Database will offer all kinds of resources and information from all EU countries, since it will establish a point of reference for all information on ICT issues within the EU.

The portal will provide news, resources and data in all original EU languages and, if possible, provided that sponsorship supports translation costs, the Frameworks, CV and Career Development Tools, e-Publication and Newsletter will be offered in all of the official EU languages:

bg | cs | da | de | el | en | es | et | fi | fr | ga | hu | it | lt | lv | mt | nl | pl | pt | ro | sk | sl | sv

Contrary to the other existing portals, this will enable visitors to receive all relevant information through one single portal also in their language, and therefore reach a

broader audience than the portals that already exist, converting the portal into a unique point of reference.

Since the ICT market is a very dynamic domain, the portal will constantly be updated, thus attracting old and new users.

Aimed at the public at large, the ICT Skills and Careers portal will use an easily understandable language; it will therefore also attract younger people, who are normally not attracted to many of the ICT portals because they use overly technical language. In addition, it will focus on the many different jobs available that require a combination of ICT skills with other skills like design, communication, healthcare, marketing, sales, service, logistics, project management, engineering skills, etc.

The ICT Skills and Careers portal will be complementary to the portals and frameworks implemented by industry, associations and EU Commission initiatives, and it will collaborate, as opposed to compete, with the other initiatives, ensuring that it serves all citizens and stakeholders. As a point of reference it will offer links to interesting existing portals and websites.

The portal will contain the following five areas:

- § Frameworks
- § Career and CV Development Tools
- § Participatory Workspace
- § Resource Database
- § News

5.1 Value Proposition Frameworks

The Skills and Qualifications Frameworks are the focus of the ICT Skills and Careers portal: as soon as a pan-European skills and qualifications framework is available to citizens and stakeholders, most of the problems in the ICT job market can be addressed in a more efficient way:

- § Skills acquired through on-the-job training and unofficial courses are highly important in ICT professionals' careers, but are currently not officially tested, documented and recognised. Therefore, job candidates cannot prove many of their skills when they want to develop their CV, move job or change career.

The frameworks will include skills achieved through unofficial training and courses and allow for test of these competences against recognised standards; therefore, ICT will professionals gain flexibility and, for stakeholders such as employers or employment agencies, it will be easier to compare candidates that hold official certificates instead of just undocumented experience.

- § Often, citizens do not know which skills and qualifications are required for the different job profiles on a national basis; they have even less of an idea on a pan-European basis. Job profiles depend on market requirements and, in a sector that changes as quickly as ICT does, job profiles and skills requirements change frequently.

The Skills and Qualifications Frameworks will give clear guidelines defining all skills and qualifications required for the different job profiles and levels. Hence, candidates can develop their careers according to the defined job profiles. Since the framework will be regularly updated, it will reflect the changing market demands for each of the job profiles.

- § Many ICT professionals are currently unaware of their market employability and companies might have doubts about the market value of their employees.

Thanks to the transparency and clear guidelines provided through the frameworks, an ICT professional's profile can be mapped and compared to the corresponding wage and salary levels.

- § There is a market disparity in terms of supply and demand in the ICT job market, basically due to a lack of candidates for ICT jobs and some occupations where a large proportion of the workforce are retiring already or in the coming years; this disparity is partly due to younger people not choosing to study ICT careers, but also lack of undertaken training in specific areas. They often think that the jobs in ICT are limited to programming and involve no social interaction.

When looking at the job profiles in the Skills and Qualifications Frameworks, young people considering a career in ICT will see that there is a wide variety of jobs, and that not only programming skills are required; for example, management and presentation skills and other social skills that indicate the social interaction of ICT professionals are required.

- § The disparity in the ICT job market is also due to the fact that ICT professionals cannot develop their careers properly, and it is difficult for them to change company without a properly developed CV. Additionally, professionals and employees, as well as other stakeholders, such as educational bodies and employment agencies, do not always speak the same language, and the lack of a skills and qualifications framework gives rise to the misinterpretation of job profiles.

The clear definitions and guidelines of the different job profiles and the skills and qualifications in the Frameworks will provide ICT professionals with clear guidelines on how they should develop their career and write their CVs. Therefore, ICT professionals will be able to plan their professional development carefully, and hence they will be better prepared for their careers development talks. The fact that it will be easier to change jobs, also within the different EU countries, will make the market more flexible and attractive, employers will be able to choose from a larger pool of candidates, and ICT job supply and demand will be more easily met.

- § For many employers, HR management is pretty complicated since, without a valid framework, it is very difficult to interpret a candidate's profile and compare the different CVs. Also, for employment agencies, it is very difficult to match job offers with the corresponding candidates due to the lack of clear job profiles and guidelines.

The frameworks will also enable the ICT and ICT user companies to manage their HR departments more easily and more efficiently. Thanks to the Skills and

Qualification Frameworks, employers and employment agencies will be able to gain and understanding of a candidate's profile and compare candidates. Multinational companies will benefit primarily from this improvement. In the long run, the framework will also contribute to the homogenisation of ICT careers at universities and other academic institutions.

- § The lack of clear definitions of job profiles does not only affect the national job markets; it is currently extremely difficult for ICT professionals to change country within the EU, due to their lack of knowledge about market requirements and the difficulties in expressing their careers according to the requirements of the foreign market.

By providing guidelines that are valid in all EU countries, the EU-wide Skills and Qualifications Frameworks will foster job mobility and provide employers with a larger pool of candidates.

Until a pan-European skills and qualifications framework is developed, the ICT Skills and Careers portal, as a point of reference, will publish and introduce a combination of existing national frameworks.

Since the frameworks will be published in all EU languages, the portal will be accepted by a broad public from all EU Member States. The frameworks will therefore become the European frameworks of reference. In this way, the portal will serve all citizens and stakeholders since, being one common reference, citizens will use it as a guideline for their careers, and stakeholders will adapt their programmes to the reference frameworks. Training providers and certification agencies will adapt their contents to the framework, and public bodies will use the EU reference frameworks as a basis for their projects and frameworks. Job seekers and HR departments of ICT and ICT user companies will speak the same language when referring to the common frameworks, and both groups will enjoy the advantage of a larger EU-wide job market.

Once the actual EU-wide Skills and Qualifications Frameworks are developed, by other associations or the portal itself, the portal will be the best place for publishing these frameworks: EU-wide users will expect to find the frameworks of reference on the ICT Skills and Careers portal.

The Skills and Qualification Frameworks will be accepted by citizens and stakeholders as it will use a clear language, understandable by all citizens and stakeholders, and its contents will offer clear guidelines regarding skills and qualifications for all ICT job profiles. Although, initially, the Skills and Qualifications Frameworks will be two separate frameworks, they will be linked, so users will be able to refer to both frameworks equally. Whilst the **Skills Framework** will define, within a list of job profiles, the skills (including soft skills) required for each job, the **Qualifications Framework**, structured according to the Skills Framework, will provide a list of training proof, including all formal and informal accreditation of acquired competences.

The Skills and Qualifications Framework will constitute the basis for the remaining areas of the portal: the careers and CV development tools will be based on and linked to the frameworks, links to training and certification providers will be chosen according to

their match with the frameworks, and the space for questions and answers, documentation, resources and news published and provided will focus on the development of career guidelines and frameworks as the centre for the development of a standardised European ICT job market.

5.2 Value Proposition Career and CV Development Tools

Career and CV development tools can scarcely be found in the European market. Only the e-Skills UK portal has been identified as providing such tools.

Career development tools are very useful for solving ICT professionals' problems with their career development:

- § ICT professionals often do not know what skills and qualifications they need to develop in order to comply with a certain job profile, and are therefore unable to plan their careers properly.

The **Skills Gap Analysis** offers a tool for candidates to assess their skills knowledge and compare it with the skills required for a certain job profile. This allows them to develop their careers accordingly, undertaking the appropriate training and courses. The tool is also useful for employers to detect skills gaps in their employees in order to provide them with the appropriate training.

- § Due to the non-recognition of unofficial training and courses and the lack of CV development guidelines, ICT professionals often cannot develop their careers properly, making it difficult for them to change company.

The **Career Planning Tool** helps ICT professionals to map their knowledge and gives advice on how to fill possible skills and qualification gaps. Where necessary, training, courses and certification will be advised.

- § Once the ICT professionals know where their skills and qualifications gaps lie, they often do not know where to find the adequate training providers or certification agencies.

The links to **Training Providers** and **Certification Agencies** complete the CV and Career Development Tools. Candidates can look up the most appropriate training providers and certification agencies regarding skills and qualifications gaps and adaptability to schedules and geographic proximity.

- § With a completely developed CV, job candidates might want to apply for jobs in different EU countries, but they might not know where to find job offers in these countries.

Links to the major job portals will help these professionals to send CVs through the major portals of the different EU countries and through pan-European portals.

- § Often, ICT careers are not the most attractive and it is difficult to attract young people (specially women) and convince them to study for ICT careers. This is

generally due to a number of reasons, which altogether forge an image of the ICT-professional in society –for example, people wrongly presume that ICT professionals are “geeks”, that the jobs are reduced to programming alone, educational programmes are old fashioned and too maths oriented, unattractive premises, poor promotion, etc.

The **Case Studies and Best Practices** published in this area of the portal will help young people to realise that careers in ICT can be very interesting and are not reduced to programming alone, as many people think. They show the variety of ICT careers, and all the different soft and technical skills required for the different job profiles. ICT professionals often falsely considered to be “geeks” turn out to be “normal” people who greatly enjoy their careers. All this leads to enhanced ICT jobs, convincing young people to study for ICT careers and attracting new people to the sector.

The Career Development Tools will help users to plan their careers carefully in the long run. Carefully developed career paths make the ICT sector more attractive, since professionals can change jobs more easily and have faster career tracks. ICT professionals can have better careers, and this also enhances the ICT profession. The job mobility created, national or international, also improves the candidate pool for employers.

In the centre of the Career and CV Development Tools is the **Skills Gap Analysis**. Its uniqueness lies in its combination with the Skills Framework published on the portal, which allows a candidate to align his or her CV with the job definitions and market requirements of the EU-wide ICT market, as defined in the framework.

Employers can use the Skills Gap Analysis to measure their workforce against industry standards and to evaluate potential new recruits.

Also, the fact that the tool will be offered in all EU languages makes it accessible by all EU citizens, whatever language they want to use, therefore reaching a broader audience, helping users to align their CVs and careers according to the requirements of the EU-wide market.

The **Career Planning Tool** will be based on the Skills Gap Analysis and provide the user with guidelines on how to develop his or her career regarding training and certification. **Useful links to Training Providers and Certification Agencies** will complete the offer of the tool. This transforms the Career and CV Development Tools into a complete set that actively helps users to adapt their careers to EU-wide market requirements. Such a tool has been inexistent on the market thus far.

The **Case Studies and Best Practices** present useful guidelines regarding the job market and job descriptions. They will also create awareness of soft skills required for the jobs, and help to create interest in ICT jobs by showing real career cases that demonstrate how interesting ICT careers can be. The case studies and best practices will contain studies from all EU countries, and portal users will gain an impression about all different EU environments.

5.3 Value Proposition Participatory Workspace

The Participatory Workspace will attract mainly citizens: students, ICT practitioners and workers in ICT-related jobs. But also other stakeholders, such as ICT and ICT companies, employment agencies or educational bodies, will be interested in finding first-hand information in the Discussion Forum.

- § Many potential or current ICT professionals have doubts about all kinds of issues concerning their careers: about the sector, where to find training, how to build their careers, how to write their CVs, and so on. Many of these problems can be solved through other areas in the portal, mainly the Frameworks and the Career Development Tools, as well as the publication of statistics and information, but some users might still have questions and doubts regarding their career development.

The **Questions & Answers** area provides these users with individual answers, so it ensures that the portal will help to solve all user problems, enabling users to develop their careers properly. An insight into user doubts and concerns also indicates what the portal needs to develop in the different areas, and therefore helps to improve the portal services.

- § Even if ICT professionals have a clear idea about the sector, their careers and CVs, they might be considering working in a different EU country and might be missing some information.

The portal is the reference point for information on the whole EU market. For specific questions, the **Questions & Answers** area will be the right place to receive specialised information on the individual EU countries.

- § Many potential ICT students and professionals do not know who to talk to about their doubts, would like to chat about the sector, and would like to get in touch with people working in ICT jobs.

The **Discussion Forum** gives potential ICT students and professionals the opportunity to get in touch with people working in the sector. They can discuss with them their opinions and ask them questions, and gain an overall insight into the sector and its environment on an informal basis. The Forum therefore helps to stimulate vocation and increase the attractiveness of career paths.

- § Many ICT professionals enjoy talking about their experiences and giving their opinions on different issues. Many of them would like to share and discuss with people who have the same interests, but do not have the right contacts, and therefore often do not know who to talk to about their jobs. This happens often to ICT professionals working in small ICT user companies, which generally do not employ many ICT professionals.

In the **Discussion Forum**, ICT professionals will be able to discuss all kinds of topics freely and share all the information and experiences that they wish about the

sector. They will find readers as enthusiastic about the issues as they are, and will enjoy chatting to people who understand them and share their interests.

- § A very helpful way of finding new jobs and improving careers is through networking. But not all ICT professionals have the right contacts and opportunities to network, partly due to the fact that ICT careers are not necessarily based on university studies and therefore many professionals miss the association with other students.

The **Discussion Forum** can fill this gap, since it provides a very useful platform to build a network of ICT professionals.

- § Often, stakeholders, such as employers, educational bodies and employment agencies, are not too well informed about what is going on in the sector and about employee opinions and concerns.

Therefore, last but not least, stakeholders can benefit from the **Discussion Forum**, since it will give them access to first-hand information and opinions of the employees. All this information, when carefully filtered, can serve as a great source of information and reflect the satisfaction of the professionals in the sector.

- § ICT professionals who would like to work in a different country might want to get to know a little more about working conditions, habits, or just talk informally to people from that country.

The pan-European organisation of the **Discussion Forum** turns it into the right place to meet people from different countries on a virtual basis, and therefore establish a possible first contact with the different countries.

The **Space for Questions and Answers** provides a very helpful tool to enable users to develop their ICT careers and CVs. It helps to orient job candidates and therefore makes the portal more efficient. It also shows the commitment of the portal to its users by offering this personalised service, and users know where to go with their doubts and problems.

Currently, some of the national portals offer these services, but the ICT Skills and Careers portal will be the only one able to give advice on an EU-wide basis. Also, the fact that this service will be offered in all EU languages will make it attractive to users from all EU countries. For those countries that do not offer such a service on a national basis, it will be of special benefit, since it will offer the only career advice service of this kind.

Additionally, it helps the portal to identify possible information shortcomings, since the questions asked show where users cannot find answers simply by browsing through the portal.

The **Discussion Forum** will allow all portal users to exchange opinions and information. Generally, people like to give their opinions and share information on certain issues, as well as create a community. According to the pan-European

positioning of the portal, the ICT Skills and Careers Portal will offer the only forum in the market that allows for a constant information flow between users of different EU nationalities. Not only can the actively involved users benefit from this area, but it can also be expected that this flow of information, when edited adequately, will serve as a valuable source of information about the ICT sector.

Due to the fact that very few of the currently existing portals offer this option, and only on a national basis, and that the ICT Skills and Careers Portal is the only pan-European portal, it will create knowledge about the markets of the different EU countries, and therefore foster employee mobility within the EU market. Hence, not only will it serve its users, but it will also support one of the main goals of the European Commission.

Finally, the Discussion Forum will be very useful for the development of the portal, since it will encourage users to contribute to the content of the portal and give an insight into new opinions directly from the market. The information shared by the Forum users can also be of use to the portal Resource Database.

5.4 Value Proposition Resource Database

The portal Resource Database can help considerably to enhance the image of ICT jobs by creating knowledge about ICT jobs and industry and correcting misconceptions among citizens.

- § Generally, citizens are not aware of the importance of ICT in industry, and of the size of the ICT sector. As a consequence, young people in particular choose not to study an ICT career, leading to a market disparity in terms of job supply and demand.

The ICT Skills and Careers portal can provide interesting information through statistics of job market needs, ICT company lists and statistics, making citizens realise that the sector is very large and employs a significant number of people in a great variety of jobs.

- § Students and ICT candidates might also be afraid that ICT careers are limited to few job profiles, and to ICT companies only. Hence, it would be risky to start an ICT career, since there are few job options, there is little choice and it is hard to change jobs.

The ICT Skills and Careers portal will publish ICT and ICT user company lists and statistics that show that an ICT career can offer many job options, that the sector is very competitive and the market is much broader than ICT companies alone; as a matter of fact, the ICT user companies offer a huge and attractive job market. Through the publication of wage and salary statistics, it can be demonstrated that the ICT market is a very competitive market.

- § Through lack of understanding of ICT and ICT user company environment, ICT students and potential candidates might consider that the ICT job market is unstable and risky.

Company profiles and statistics published in the Resource Database show that the companies in the sector are generally very big and solid, and that the sector offers

many careers options and alternatives. The internationality of the sector enhances its attractiveness and candidates can see that, with job mobility, they can have very attractive careers in ICT.

- § Stakeholders want to be updated regarding the progress made in harmonisation and standardisation of certification and titles in the ICT sector, and would like to find pan-European data or information on different EU countries regarding the ICT sector. Often, they do not know where to find such information, since the existing portals focus on national information only.

The **Resource Database** will offer a complete database regarding the ICT sector, including data and information about the EU as a whole, as well as about all EU countries. Stakeholders will find all available resources in one single portal. The portal will serve as a Europe-wide reference for data resources and a place where all stakeholders know they can always find all available resources, and will therefore not have to look in many different places in order to compile information.

According to the unique pan-European positioning of the portal, the Resource Database will offer all the latest relevant information about the repository of policies, frameworks, qualification schemes, articles and best practices, institutions, competence/skills, assessment tools, downloads, companies, experts and other. The documents and resources published are mainly **EU and Country-Specific Documentation**, but also **Industry Documentation**.

Since the Resource Database has the ambitious objective of being the reference for documentation for all European countries, in this area of the portal, all kinds of national, regional or local resources and data can be found, even if they are not necessarily relevant on a pan-European level.

Documents that are considered extremely relevant will be translated into all EU languages. Priority will be given to documentation and information that is relevant on a pan-European basis and related to the development of skills and qualifications frameworks and guidelines for ICT careers.

The Resource Database will mainly attract large industrial and official stakeholders: multinational ICT and ICT user companies, official bodies, national organisations, employment agencies, unions and policy-makers requiring a reliable source of resources and information on the ICT sector.

The Resource Database will also contain a **Library** containing general reference documents that might be considered interesting reference information, despite not being recent.

Links to other Frameworks (national or international) can also be found in this area. The fact that they are not included in the Frameworks are states clearly that they are included here as a resource for consultation, but are not considered a reference framework by the portal.

5.5 Value Proposition News

The News area of the ICT Skills and Careers portal will help all citizens and stakeholders to keep up to date with issues concerning the ICT job market.

- § Users searching for news on the ICT sector of the different EU countries and on the EU as a whole generally have to search country by country, and cannot always find adequate sources. To find pan-European information is even more difficult, since most of the sources are national and generally publish news about their country, and do not deal with news about other EU countries or the EU as a whole.

The **News** published in the ICT Skills and Careers portal includes the most important news on all EU countries, and focuses very much on news affecting the EU as a whole. It will therefore be much easier for stakeholders to gain information about the sector on an EU-wide basis, and they will always know where to find the latest news relating to all the EU countries.

- § Stakeholders, such as educational bodies or job agencies, have to deal with a maze of information about the ICT sector in order to find information about skills and qualification issues.

As its title implies, the ICT Skills and Careers portal deals primarily with issues of the ICT sector that affect skills, qualifications and the job market, with the **News** published in the portal focusing on these issues; therefore, it will be easier for stakeholders to find precisely the information they need.

- § Citizens, potential or current ICT professionals would like to keep up to date with the development of the ICT job market on an EU-wide basis, but generally cannot find relevant information.

Also, for ICT professionals, the **News** area is very helpful since at one glance they can find the latest news affecting their sector, and therefore their professional lives.

- § News and publications often deal with many different issues, offering a broad mix of information regarding the ICT sector. Also, this information tends to be about one country only, instead of offering a European overview.

The News area of the ICT Skills and Careers portal will offer news about the ICT job market and skills and qualification issues. It will include news about the EU, as well as all single EU countries. It will therefore be easy for citizens and stakeholders who are interested in these issues to easily find the news they are seeking.

- § Stakeholders generally do not have time to search for information, but would like to keep up to date with the latest news and progress in the ICT sector. Also, in their day-to-day business, they often forget to proactively search for news.

The **Newsletter** will keep these stakeholders up to date effortlessly, since it will be sent automatically upon subscription.

- § Often, stakeholders would like to hear comments from insiders about new developments, regulations, legislation, and so forth.

The **e-Publication** analyses and comments on issues that important to the all stakeholder groups that the ICT Skills and Careers portal is directed towards: ICT job markets, skills and qualifications frameworks, progress towards European harmonisation and standardisation of titles. Therefore the e-Publication offers the only specialised source of information that deals with those issues affecting all of the EU countries.

The **News** published in the area will summarise all news regarding skills, qualifications and the job market in the ICT domain that the different stakeholders hope to find. The news will include all EU countries and the EU as a whole, so the portal will serve as a reference, offering users all relevant EU news.

The **Newsletter** will enable users to be constantly informed about important news related to the ICT sector. All subscribers from the different stakeholder groups, such as public bodies, educational institutions, unions and employers, will automatically be updated about the latest news on the ICT sector and the progress in harmonisation and standardisation of skills and qualifications. The push mechanism of the Newsletter makes it easy to spread information, as the user does not need to make the effort to enter the portal. A well-developed summary of the news and articles will help users to scan the information prior to reading the articles that might be of interest to them.

The Newsletter will be published with great care, in order to make sure that the information it contains is really relevant on a pan-European basis and supports the approach towards the harmonisation and standardisation of qualifications and guidelines. The Newsletter will contain only information that affects the domain on an EU-wide basis, and will not focus on issues that are only relevant on a national, regional or local basis. It will, nevertheless, deal with national, regional or local issues if they affect or are of interest to the EU as a whole.

With its **e-Publication**, the ICT Skills and Careers portal will make a valuable contribution to the latest publications by publishing articles affecting the pan-European ICT market: given its access to first-hand information and its close collaboration with the EU Commission and industry associations from all over Europe, along with constant research and analysis of relevant documentation on the ICT sector for the Resource Database and the Newsletter, the ICT Skills and Careers portal editorial team will be constantly informed about the latest articles and news in the ICT sector. The Participatory Workspace will offer an additional source of first-hand information, once analysed and filtered carefully.

All this allows the editorial team to access the latest information and validate it according to its importance to pan-European development in the ICT market and its interest to stakeholders from all EU countries. The publication of information regarding all EU countries will distinguish the publication of the ICT Skills and Careers portal from all currently available publications. Stakeholders, such as official bodies, national organisations, employment agencies, unions, policy-makers and European ICT projects, will use the publications as one of their main sources of information regarding the evolution of educational qualification issues in the European ICT domain.

6. SERVICE SPECIFICATIONS

Although the different areas of the portal are aimed at certain stakeholder groups, they all serve to improve understanding between all the stakeholders involved and help to work towards common guidelines in the ICT sector. The five areas will be aimed at different groups of main users, and will be designed according to their expectations. The Skills Framework will be the main pillar of the portal, around which the other services will be built.

One of the value added for European users will be offering the services of the ICT Skills and Careers portal will be provided in all of the EU languages. Depending on sponsorship, several areas, tools and services will be translated into all of the EU languages. A priori, the frameworks, CV and Career Development Tools, Newsletter and e-Publications will be translated into all of the EU languages. Links, news and resources will be offered in their original language only, and some will be selected for translation into English.

The portal will contain the following areas and services:

AREA	SERVICE	LANGUAGES
Frameworks	Skills Framework	Translated into all EU languages
	Qualifications Framework	Translated into all EU languages
Career and CV Development Tools	Case Studies and Best Practices	Translated into all EU languages
	Skills Gap Analysis	Service offered in all EU languages
	Career Planning Tool	Service offered in all EU languages
	Links to Training Providers	Links offered in all original languages, but not translated
	Links to Certification Agencies	Links offered in all original languages, but not translated
	Links to Job Portals	Links offered in all original languages, but not translated
Participatory Workspace	Space for Questions and Answers	Service offered in all EU languages, but not translated
	Discussion Forum	Service offered in all EU languages, but not translated
Resource Database	EU and Country-Specific Documents and Resources	All original languages; some will be selected for translation into English
	Industry Documents and Resources	All original languages; some will be selected for translation into English
	Library	Library offered in all original languages, but not translated

	Links to other Frameworks	Links offered in all original languages, but not translated
News	List (links) to published news on ICT sector	All original languages; some will be selected for translation into English
	Download of Newsletter	Translated into all EU languages
	Download of e-Publication	Translated into all EU languages
	News published by the portal	Translated into all EU languages

PILOT PORTAL SERVICE SPECIFICATIONS

For the pilot portal, not all of the defined services will be implemented; most of the services offered on the pilot portal will be imported from other portals and stakeholders. On the pilot portal, the services will not be offered in all the EU languages; they will be published only in English and in the original languages without being translated.

The following services will be implemented in the pilot portal:

AREA	SERVICE	LANGUAGES
Frameworks	E-skills Framework, four common job profiles	English only
Career and CV Development Tools	Case Studies and Best Practices	All original languages
	Skills Gap Analysis	English only
Participatory Workspace	Space for Questions and Answers	English only
	Discussion Forum	All original languages
Resource Database	EU and Country-Specific Documents and Resources	All original languages
	Industry Documents and Resources	All original languages
News	List (links) to published news on ICT sector	All original languages
	Download of Newsletter	English only
	Download of e-Publication	English only

The different stakeholder groups will find a solution to their specific problems in the different portal areas:

		# 1	# 3	# 4
		E-Skills Framework	ICT Qualification Framework	Image of the ICT Sector
Level 1	Citizens	<ul style="list-style-type: none"> E-Skills Framework Career and CV Development Tools Space for Questions and Answers 	<ul style="list-style-type: none"> Qualification Framework Career and CV Development Tools Space for Questions and Answers 	<ul style="list-style-type: none"> Space for Questions and Answers Discussion Forum E-Skills Framework Qualification Framework
	ICT Companies	<ul style="list-style-type: none"> E-Skills Framework 	<ul style="list-style-type: none"> Qualification Framework 	<i>Companies will indirectly benefit from an improved job market</i>
	ICT User Companies	<ul style="list-style-type: none"> E-Skills Framework 	<ul style="list-style-type: none"> Qualification Framework 	
Level 2	Employment Agencies	<ul style="list-style-type: none"> E-Skills Framework E-publication Newsletter Resource Database 	<ul style="list-style-type: none"> Qualifications Framework E-publication Newsletter Resource Database 	<ul style="list-style-type: none"> E-publication Newsletter Resource Database Discussion Forum
	Educational Institutions and Agencies			
	Unions			
	Public Administrations			

The following table shows which of the services are covered by the main portals in the market:

	Final Portal	Tech-Career Compass	IT Skills Hub	E-Skills UK	KIBNET	Career Space	eSCC	CEDE-FOP/ETV*
Frame-works	e-Skills Framework	ü	ü	ü	ü	ü	under develop-ment	X
	Qualifications Framework	ü	X	ü	ü	ü		X
Career and CV Develop-ment tools	Case Studies and best practices	X	ü	ü	ü	ü	X	X
	Skills Gap analysis tool	ü	ü	ü	X	X	X	X
	Career Planning Tool	ü	ü	ü	under develop-ment	static guidelines document	X	X
	Links to certification agencies	ü	X	ü	ü	X	X	X
	Links to training providers	ü	ü	ü	ü	X	X	ü
Participa-tory Workspace	Space for question and answers to the portal	ü	ü	ü	phone info service	X	X	ü
	Discussion forum for users	X	X	X	X	X	X	ü
Resource Database	EU and country specific documents and resources	X	ü	ü	ü	X	ü	ü
	Industry documents and resources	X	ü	ü	ü	X	ü	ü
	Library	ü	X	ü	ü	X	ü	ü
	Links to other frameworks	X	X	ü	ü	X	(ü)	X
News	List (links) to published news on ICT sector	ü	ü	ü	ü	X	ü	ü
	Download of newsletter	X	X	ü	ü	X	X	ü
	Download of e-publication	ü	X	ü	ü	X	ü	ü
	News published by the portal	X	X	ü	ü	X	ü	ü

The portal areas and services can be summarised as follows:

AREA	MAIN USERS	SERVICES	DESCRIPTION	MANAGEMENT
Frameworks	<ul style="list-style-type: none"> - Citizens - ICT companies - ICT user companies - Employment agencies - Educational institutions and agencies - Unions - Public Administrations 	Skills Framework	The skills required for each of the job descriptions will be detached and listed. Each job description is divided into three levels	<ul style="list-style-type: none"> - Constantly update according to sector development; update or substitute with new frameworks if necessary - Translation of framework into all EU languages
		Qualifications Framework	The framework lists required qualifications for each of the three levels of the different job profiles. It considers the different alternatives of qualifications available in the market	<ul style="list-style-type: none"> - Constantly update according to sector development; update or substitute with new frameworks if necessary - Translation of framework into all EU languages
Career and CV Development Tools	<ul style="list-style-type: none"> - Citizens - ICT companies - ICT user companies 	Skills Gap Analysis	Based on the Skills Framework, users will be able to assess and compare their skill levels to the skill levels required for a job	<ul style="list-style-type: none"> - Regularly update tool according to Skills Framework - Registration mechanism for users - Storage of user profiles - Elimination of user profiles after 12 months without use
		CV Development Tool	Based on the Gap Analysis Tool, users are led to the CV Development Tool, which displays training and certification recommendations	<ul style="list-style-type: none"> - Regularly update tool according to sector development - Registration mechanism for users - Storage of user profiles - Elimination of user profiles after 12 months without use
		Links to Training Providers	The CV Development Tool recommends training providers and certification agencies according to analysis outcome; furthermore, an independent list of links is available	- Regularly update links according to market development
		Links to Certification Agencies		
		Links to Job Portals	Independent links to the major job portals of all EU countries will be provided to the user	- Regularly update links according to market development
		Case Studies and Best Practices	Publication of selected case studies and best practices of ICT professionals for career orientation of candidates	<ul style="list-style-type: none"> - Renew and update case studies and best practices - Translate studies into all EU languages
Participatory Workspace	- Citizens	Space for Questions and Answers	Users can ask questions regarding their careers and ask for help and professional guidelines directly via e-mail. Questions that are considered interesting are published in the Discussion Forum	<ul style="list-style-type: none"> - Establishment and management of an international expert team - Publication of interesting questions in the Discussion Forum and translation into English - Elimination of old questions published in the forum
		Discussion Forum	Interactive forum for exchange of opinions and information where users can discuss freely and publish information	<ul style="list-style-type: none"> - Management of messages: elimination of unrelated or incorrect information and Spam - Elimination of old messages
Resource Database	<ul style="list-style-type: none"> - ICT companies - Employment agencies 	EU and Country	Repository of policies, frameworks, qualification	<ul style="list-style-type: none"> - Constant search and selection of relevant information

	<ul style="list-style-type: none"> - Educational institutions and agencies - Public Administrations 	Specific Documents and Resources	schemes, articles and best practices, institutions, competence/skills, assessment tools, downloads, companies, experts, etc. The documents and resources are recent and up-to-date	<ul style="list-style-type: none"> - Translation of selected news into English - Elimination of outdated documents and resources and selection for library
		Industry Documents and Resources	Documents and resources published and provided by ICT companies. The documents and resources are recent and up-to-date	<ul style="list-style-type: none"> - Negotiation and agreements with industry on publication of documents and resources - Constant search and selection of relevant information - Translation of selected news into English - Elimination of outdated documents and resources and selection for library
		Library	Non-recent documents, articles and books worth storing for consultation	<ul style="list-style-type: none"> - Selection of documents and resources for including in the library - Replace documents if necessary: use analysis (number of downloads)
		Links to Frameworks	Links to frameworks that do not serve as portal reference frameworks for information only	<ul style="list-style-type: none"> - Constant search and update of frameworks
News	<ul style="list-style-type: none"> - Citizens - ICT companies - ICT user companies - Employment agencies - Educational institutions and agencies - Unions - Public Administrations 	List of Published News on the ICT Sector	<ul style="list-style-type: none"> - List of news published on the ICT sector on portals, newspapers, etc. - News published by the ICT portal itself, using available information - Agenda of conferences 	<ul style="list-style-type: none"> - Constant search and selection of relevant news - Translation of selected news into English
	<ul style="list-style-type: none"> - ICT companies - Employment agencies - Educational institutions and agencies - Unions - Public Administrations 	(Download of) e-Publication	Articles written by the ICT Skills and Career portal team analysing and commenting on ICT issues affecting the pan-European ICT environment The e-Publication is sent to subscribers and can be downloaded in this portal area	<ul style="list-style-type: none"> - Compile latest information on ICT sector - Analyse, comment and write articles on events and policies for publication - Create and manage distribution mechanism for subscribers
		(Download of) Newsletter	Summary of information about news in the ICT sector and events agenda The Newsletter is sent to subscribers and can be downloaded in this portal area	<ul style="list-style-type: none"> - Compile interesting information on ICT sector - Receive information about conferences and events - Summarise news from the ICT sector - Create and manage distribution mechanism for subscribers

6.1 Service Specifications: Frameworks

The portal will offer two frameworks: a Skills Framework, and a Qualifications Framework. Even if structured separately, the two frameworks will be linked. Possibly in the future, one common Skills and Qualifications Framework will be developed and published.

The **Skills Framework** consists of a list of job profiles, separated into skills. Each of the skills listed will be explained in detail when the user clicks on the icon. Each job profile is separated into three levels: “Entry level”, “Intermediate level” and “Senior level”.

The user can enter the framework in any of the EU languages. At the beginning of the menu, the user chooses the language. All commands and framework details are shown in the chosen language. The framework will be built in English, but translated in detail into all the EU languages.

The list of profiles will be very complete, and the skills list will consist of technical skills and soft skills. The definitions will be sufficiently detailed to provide a clear guideline, but at the same time concise enough to be unambiguous.

Once the user has chosen a job profile, the three levels will be displayed so the user can see them at a glance.

The **Qualifications Framework** will be an independent framework, but structured according to the Skills Framework. According to the job profiles defined in the Skills Framework, qualifications will be assigned to each of the skills. In this way, the framework user can easily be guided regarding the certification he or she needs in order to comply with the job profiles. The user introduces the job profile he or she is interested in, and the system then shows a list of necessary recommended qualifications. The user will be able to click on each of the certification recommendations in order to view more in-depth information.

6.2 Service Specifications: Career and CV Development Tools

The area of Career and CV Development Tools is aimed primarily at citizens. The tools are based on the Skills and Qualifications Frameworks that will be published on the portal.

First-time users will have to register, and their user names and passwords will be sent by e-mail to them. With the given user names and passwords, users will be able to enter the Career and CV Development Tools whenever they wish. Their profiles will be stored, but for a time limit of 12 months. After 12 months without use, their profiles will be deleted from the system. Prior to this, a message will be sent to users, giving them time to react and possibly re-access the tool.

The first step is the **Skills Gap Analysis**: users can choose a job profile in the list of the job profiles in the Skills Framework. Three levels are available for each of the job profiles: “Entry level”, “Intermediate level” and “Senior level”. Since the tool is available in all EU languages, users choose their language when entering the menu.

The job profiles of the framework will be translated into all of the EU languages. Hence, users view the job profiles in their chosen language, and then the system translates them back into English in order to search for them in the framework. The skills required for a job profile will be separated and displayed. Users have to introduce their skill level for each of the skills: they can choose from a list of 10 levels, which range from “1: Never heard of this skill” to “10: I am a certified expert”. Again, they will choose this level by scrolling a given list. Once users have introduced all their skills values, they can save the result.

Once the result is saved, the system shows a list aligned with the skills list, showing the minimum required value, and compares it to the candidate’s results. It displays comments, identifying the gap and commenting, for example: “Level fulfilled”, “Need for improvement” and “Level not fulfilled”. At this point, the Skills Gap Analysis Tool is completed, and users have the option of progressing to the Career Planning Tool by pressing on an icon.

The tools are built in a similar way to the Assessment tools offered in the Tech Career Compass.

Via the Gap Analysis, the **Career Planning Tool** is based on the Skills Framework. Once the Gap Analysis has identified skills gaps, the Career Planning Tool recommends the necessary ways of accessing training and courses. According to each skills gap, it defines on-the-job training or academic studies or courses the candidate might take in order to fill the gap. The Career Planning Tool then recommends a list and provides links to training providers for academic studies or courses.

The Career Planning Tool is also linked to the Qualifications Framework. The skills that require further development will be linked to a certification recommendation. A list of recommendations is offered to the user. Once users have chosen the certification options, they can choose different links to certification agencies aligned with their choice. In order to better meet their needs, users will have to enter their place of residence, in order to ensure geographical proximity.

Users will also be able to choose skills from the list and, even if they have fulfilled the requirements, ask the system for certification recommendations. The procedure for recommendation will be the same as above.

All information entered by users will be stored for 12 months, and they will always be able to re-access their data and update and correct it.

The CV and Career Development area of the portal will also contain a list of the major EU job portals, national portals and international portals. By clicking on the link, users will be redirected to the portal.

6.3 Service Specifications: Participatory Workspace

The area of the Participatory Workspaces is also aimed primarily at citizens. It is divided into two services: the **Space for Questions and Answers** allows users to ask the ICT Skills and Careers portal team questions. As long as the questions are directly

related to the ICT sector and the users' career development, the team will answer within 24 hours by e-mail. If the question is not related to ICT issues and careers, an automatic message will be sent, informing the user as to this fact: "We are sorry, the question you submitted is not related to the ICT skills and careers –the topic of this portal" Users can be referred manually to other portals. Users will ask the question by e-mail; in order to guarantee that their e-mail address is correct, they must enter it twice. They will also be asked for some general information, such as job and place of residence, for portal statistics.

The service will be available in all the EU languages. When entering the menu, users can choose their language. The entire menu will be available in the chosen language, and users can ask questions in the same language; they will, of course, receive the answer in the chosen language.

If a question is considered to be of interesting to the portal audience, it will be posted in the Discussion Forum in the original language and in English.

The other service of the Participatory Workspace is the **Discussion Forum**. It allows its users to exchange information and experiences. They can also share information by sending documents and reference links. There will be 23 parallel discussion forums going on, one in each of the EU languages. At the beginning of the menu, the portal will inform users that the EU-wide forum is the one held in English, and it will encourage people to join that forum. Nevertheless, by choosing their own language, users can join their own national forum. Since the difference is based on language, countries speaking the same language, such as France and Belgium or Austria and Germany, will join the same forum.

The English forum will help users all over Europe to exchange ideas and opinions. Also, it will give them the opportunity to ask questions on an EU-wide scale of people from the country of their interest.

The information will be constantly managed. Old information and comments will be deleted, and Spam will be continuously eliminated. The portal team will also add value to the forum by posting information that encourages discussion among users. Also, interesting questions and answers from the Space for Questions and Answers will be included in the forum.

6.4 Service Specifications Resource Database

The Resource Database will compile relevant information affecting the ICT skills domain on a pan-European basis. It will also contain information on the individual Member States, since it wants to offer a complete reference for ICT-related documents. The Resource Database will be a complete reference database for the EU as a whole. Downloading of documents and articles will be free of charge.

It will contain **EU and Country-Specific Documents and Resources**, which will include, but will not be limited to:

- Directives and Policies
- Standards and bodies qualification framework

- Events and conferences
- EU funding initiatives
- Project results
- Case studies
- Best practices
- International associations
- General information/e-skills tools, tutorials, certification

Furthermore, the Resource Database will publish **Industry Documents and Resources** related to the ICT sector and provided by companies.

The documents and resources will be constantly updated. Outdated documentation and resources will be eliminated or included in the Library.

The **Library** contains all kinds of non-recent articles, documents, books and references that are worth storing for consultation. It will also be regularly updated, and each of the documents will be analysed according to its interest. If a document has not been clicked on a minimum number of times within a defined timeframe, it will be deleted.

Links to Other Frameworks, national or international, will be included in the Resource Database. They will serve as a reference, but the portal clearly states that the framework does not serve as a reference on an EU level and is not supported by the portal. A message will always refer users to the portal frameworks.

6.5 Service Specifications: News

The News area will provide users with a list of **Published News on the Sector**, including all kinds of news about the ICT sector and related issues. Through information syndication, the portal will make all possible news available to its users. The news items will be imported from any kinds of sources available in this area of the portal. The news can be from any country, but will be published only if it affects the EU as a whole or is considered important for the EU market.

Additionally, users can find **News Published by the ICT Skills and Careers Portal**. Based on the information the portal receives and analyses for the e-Publication, as well as through the Discussion Forum and other sources of information, it will publish news whenever the portal team finds that such news is relevant and not covered by other news sources.

When entering the menu, users can choose their language, and the news published in this language will be shown. The news will be published in its original language only. Some news will be selected for translation into English.

In this area, users can also download the **e-Publication**. The e-Publication will analyse and comment on the latest articles, policies, frameworks, qualifications, best practices, case studies, reviews, tutorials, research papers and projects developed by relevant stakeholders in the ICT domain. The EU Commission, national policy-makers and other stakeholders, such as industry associations and standardisation bodies, will be an important source of information, whilst also being the main target users. The e-Publication will be edited by a team that is experienced in the ICT domain, focusing on adding real value in order to consistently meet stakeholder expectations:

- Only ICT-related information that affects the sector regarding the job market, qualification and standardisation issues will be dealt with
- Only information that is relevant on an EU level will be published
- Information will be published if it is of interest to one/some stakeholder(s), and does not necessarily have to be addressed to all stakeholder groups
- Although the publication will be issued on a regular basis, a new issue will be published only if really interesting information is available for analysis and comment
- The opposite will also apply: whenever there is news of interest to stakeholders, a new publication will be issued
- If considered extremely interesting and valuable, publications may also be purchased from other publishers for re-publishing (syndication)

Users can subscribe to the e-Publication, so every new publication will be sent to them automatically, or they can order publications individually against payment through the portal. The availability of a new publication will be announced and an introductory summary will be published on the portal. There will be a new issue of the e-Publication every four months. Copies will be stored for four years. The e-Publication will be a paper-based document sent to subscribers or spontaneous users. A digital version will also be available for downloading on the portal. Subscribers can download their copy for free by introducing a code, and spontaneous users can purchase the individual right to download by entering a credit card number.

During the pilot phase of the portal, the e-Publication will not be paper-based, but available to subscribers and spontaneous users as an electronic version only.

The e-Publication will be available in all the EU languages. When subscribing to the publication, users introduce the language in which they wish to receive their copy. The same process applies for downloads.

In this area, users can also download the **Newsletter**. It will keep the different stakeholders up-to-date with the latest news on ICT job market-related issues, assessment tools, certificates, guidelines, events and training opportunities. It will be sent periodically to all subscribers, and will be available on the portal so that it can be downloaded. Since it is free of charge, users can download a copy any time from this area. A new edition will be published monthly. The copies will be stored for four years.

The contents of the Newsletter may include:

- Overviews of new national, regional or local guidelines
- European initiatives
- ICT sector evolution/statistics
- News on the ICT sector
- News on educational issues
- Conferences
- Events
- New information on the portal
- Interesting outcomes from the Participatory Workspace
- Agenda of events

The Newsletter will be available in all the EU languages. When subscribing to the publication, users introduce the language in which they want to receive their copy. The same process applies for downloads.

7. FINANCIAL SCENARIOS

For the financing of the ICT Skills and Careers portal, seven models have been identified. There are three different ownership models: public ownership (public funding) model, the industry ownership model, and the membership model. Whereas the public funding and membership model can be combined, the industry ownership model is exclusive.

Additionally, there are four revenue models: the sponsorship model, the advertisement model, the end-user subscription model, and the resource syndication model. All these models can be used as an additional source of revenue combined with any of the ownership models, and amongst themselves. They can be applied to the portal as a whole, or to single portal areas only.

Since the different models can be combined among themselves, the ideal possible mix for the ICT Skills and Careers portal could be a combination of various models.

7.1 Public Funding Model

A possible source of public funding would be support from public bodies, mainly national, regional and local bodies.

The involvement of national, regional and local policy-makers is important for the bodies themselves, as well as for the EU Commission. Bringing the EU perspective to their own national realities, and the possibility of providing a service in the local language and tailored to national requirements, so as to reach wider as well as national audiences, makes it attractive for national, regional and local bodies to fund the portal. At the same time, the different public bodies serve the European Commission by helping to spread information, as they are normally the first point of reference for citizens and stakeholders.

7.2 Industry Ownership Model

This model is based on the possibility of offering the portal to a company, institution or association that might be interested in the ICT Skills and Careers portal, not only to gain visibility, but also to establish a direct link in order to sell its own services related to the content of the portal.

Possible candidates might include education companies offering ICT-related courses, or licensing agencies. The owner would pay a fee, in exchange for the rights to the content and services of the portal.

The owner of the portal would most probably seek a suitable audience and might, therefore, influence the content of the portal. It is therefore essential to set standards in

order to maintain the main objectives of the portal as defined by the European Commission.

7.3 Membership Model

In the membership model, multiple companies or institutions share the ownership of the portal through their membership. The consortium of members is the main body responsible for portal sponsorship.

The membership model is the most commonly used model among ICT portals in the market and is typically combined with the sponsorship model. ICT and ICT user company industries are generally highly affected by skills and careers issues in the ICT sector, and building membership consortiums to support a portal is a very effective way of working towards their common goals in the area.

The membership model can also be combined with the public funding model. The membership model could be based on the hosting model, whereby a member's contribution might be the hosting of the portal.

7.4 Sponsorship Model

The sponsorship model is very commonly used in the different ICT and other portals in the market, generally combined with the membership model. It is based on one or various companies or institutions of the ICT, or any other, sector, interested in sponsoring these kinds of projects, in exchange for visibility on the portal. The desired visibility does not necessarily have commercial grounds, but the sponsors generally look for image, making a social contribution to projects of a certain concept. It can be expected that the sponsor's business will have links to the ICT sector or educational topics, but the sponsor will not be able to use the portal for its own business purposes.

The sponsoring agreement would bind the sponsors for a specific duration. Many ICT companies, such as Cisco, Microsoft, and IBM, are sponsors of most of the main ICT-related portals all over Europe and the world.

The sponsorship model can also be based on an agreement to contribute content or services towards the portal, if applicable.

7.5 Advertisement Model

The main source of financing in the advertisement model is based on the inclusion of advertising on the homepage and/or in the different areas of the portal. The advertisement model sells communication, in the form of a spot on the portal for business advertisement, and can be applied to the portal as a whole or to single areas of the portal. Advertisements can also be used for the Newsletter, without appearing on the portal.

A possible collaboration with other portals through links might be part of the advertisement model when charging to place the icon of the other portal. It can also be based on a content contribution agreement. An agreement with the advertisers will be made in the short or medium term, allowing for changes and updates. This model in order to generate sufficient advertisement funding requires significant traffic (number of unique visitors) on the portal to make it worthwhile for advertisers.

7.6 End-user Subscription Model

This model is based on the sale of services, and the portal could be sustained through a subscription to one or several tangible assets of the portal.

Initially, the main tangible asset of the portal would be the e-Publication. Considering the ongoing progress expected in the ICT skills domain, the distribution of a paper-based publication, to be received by key stakeholders (policy-makers from Member States or HR and training managers) at their desks, could be their main channel of communication about latest news and changes.

Users could also be charged to use the workspace and frameworks on an annual membership basis, or by individually charging the use of the Career and CV Development Tools. Nevertheless, in order to make the portal work, and turn it into the point of reference in the EU, all tools will be offered free of charge. The different free portal services and tools will attract customers and create confidence in the portal, and therefore win customers for subscription, as well as attract sponsors and advertisers.

The information received through the publication cannot be published by users (copyright); hence, stakeholders wishing to publish information received from the ICT Skills and Careers portal will apply the resource syndication model.

7.. Resource Syndication Model

The resource syndication model is based on the sale of information resources for publication to other portals or publications. The information available on the portal can come from the Resource Database, the Newsletter and the e-Publication. Possible information resources might also be the Frameworks and the Career and CV Development Tools, which could be sold to other thematic and/or regional portals. Hosting other portals might also be a form of the model.

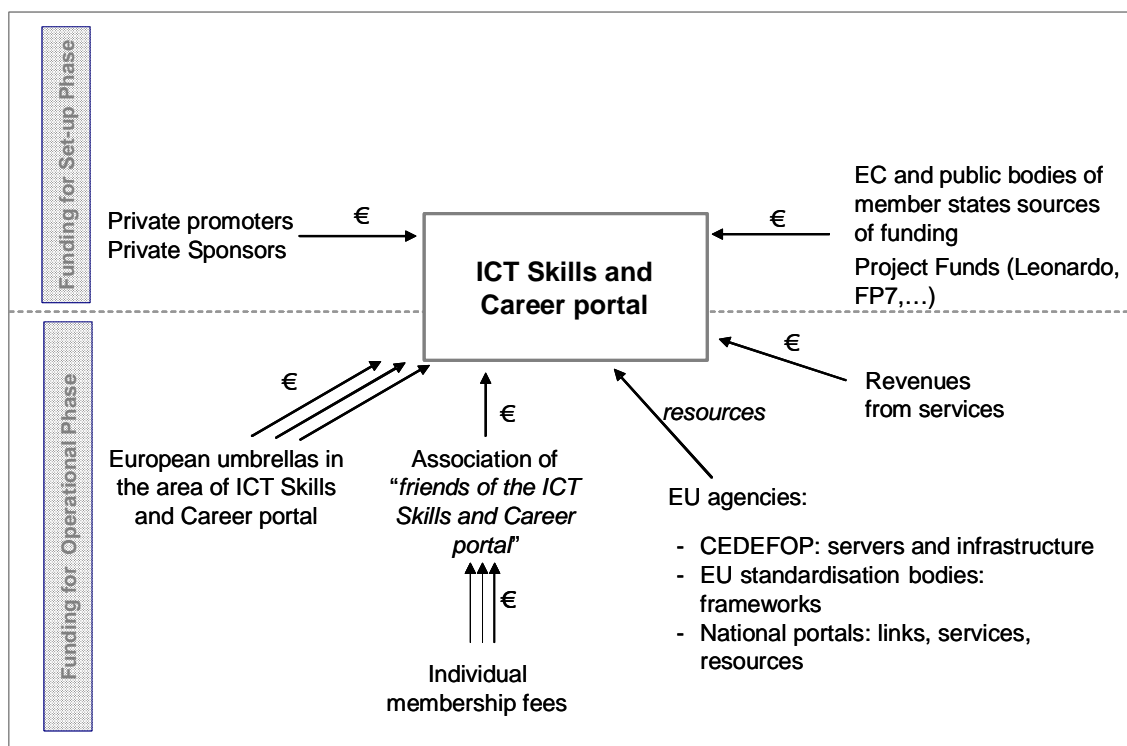
In order to avoid possible IPR issues concerning the information transferred to other portals, it is highly important to scan the transferred information, as it might not originally have been generated by the ICT Skills and Careers portal. Whilst publications and newsletters edited by the ICT Skills and Careers portal do not imply any legal problems, the information from the Resource Database might.

The following tables show the most commonly used models in the market:

	Ownership			Revenues ⁽²⁾		
	Public	Private				
	Public Funding	Industry Ownership	Member-ship ⁽¹⁾	Sponsorship	Adver-tisement	End-user subscription
CIGREF	X	X	Ü	X	X	X
Tech-Career Compass	X	X	Ü	Ü	Ü	X
IT Skills Hub	Ü	X	Ü	Ü	X	X
E-Skills UK	Ü	X	Ü	Ü	X	X
KIBNET	Ü	X	X	X	X	X
NWCET	Ü	X	Ü	Ü	X	Ü
eSCC	X	X	Ü	Ü	X	X

(1) Industry Ownership=1 owner, Membership=multiple owners
(2) Another source of revenues , the syndication model, has not been analysed

The possible scenario of business models employed for the ICT Skills and Careers portal might be as follows:



During the set-up phase, the portal will need funding from private promoters, as well as from the European Commission and other sources of public funding, such as public bodies in the different EU Member States.

Once the portal is set up and enters the operational phase, the public funding will make way for different forms of private funding. The fact that private funding will sustain the portal is the best proof that there really is a need for such a portal. European umbrella associations and industry, joined together in an association for the portal, will carry one part of the costs of portal maintenance. In addition, EU agencies will contribute resources to the portal, such as servers and infrastructure, frameworks, links and information resources.

8. PORTAL CONTENTS

As stated previously, the portal will be a point of reference for the ICT sector and issues related to ICT skills, qualifications, and the job market. It will therefore not compete with other existing portals and initiatives, but collaborate with them. Also, one of the main goals of the portal is to offer a complete range of information, links and resources.

Therefore, the portal will not only rely on its own resources, but will also import them from all the different portals and sources of information. Its contents will be a combination of portal-owned sources and imported information and resources.

Information might be published directly on the portal, or through a link, according to the kind of documentation and the agreement with the owner of the information.

A significant number of stakeholders interviewed during the research confirmed that their organisation would contribute to the ICT Skills and Careers portal with content or other tools and services. All of these stakeholders will be contacted again in order to confirm their commitment.

The following table lists the contributions some of the interviewees confirmed during the interviews:

Company/ Association	Sector	Country	Contribution
AICA	Association	Italy	career development tools
Estonian Information Technology Society (EITS)	Association	Estonia	case studies
The Communications Network (TCN)	Association	UK	content
Momentum	Association	Irish	content/links
FiCom	Association	Finland	content/testing
Dataföreningen (DFS)	Association	Sweden	organisation
CIGREF	Industry Association	France	sponsoring
European Computer Driving Licence Foundation	Certification Body	Austria	platform/business model
Prospects UK	Online Career Service	UK	content/software/systems
Ministry for Investment, Industry and IT	Public Body	Malta	content
Swedish Institute of Computer Science	Research Institute	Sweden	content
IDA, Danish Engineering	Trade Union/ Association	Denmark	content

9. SPONSORSHIP

The stakeholders' contribution in terms of content will not be enough to keep the portal alive. All interviewed stakeholders and other relevant stakeholders will be contacted regarding a financial contribution to the portal (sponsorship, membership fee).

The stakeholder survey found that 18% of the stakeholders answered that their organisation is currently providing sponsorship to one or various portals. 13% of those interviewed stated that their organisation would be willing to act as a sponsor for the ICT Skills and Careers portal. Considering the fact that the respondents still do not know the specific aims and objectives and the management structure and business model of the future portal, the indication of support from shareholders is encouraging.

The following table lists the major companies currently sponsoring one or various ICT portals:

Company	Sector
CompTIA	Association
European Computer Driving Licence Foundation	Certification Agency
Exin	Certification Agency
ProCert	Certification Agency
Cisco Systems	ICT company
EDS	ICT company
Fujitsu	ICT company
Hewlett-Packard	ICT company
IBM	ICT company
Lucent Technologies	ICT company
Microsoft	ICT company
Nortel Networks	ICT company
Novell	ICT company
Oracle	ICT company
Sun Microsystems	ICT company
Adobe	ICT company
Microsoft Corporation	ICT company
Accenture	ICT user company
Alcatel	ICT user company
Canon	ICT user company
Deloitte Touche Tohmatsu	ICT user company
Ericsson	ICT user company
Siemens	ICT user company
The Boeing Company	ICT user company
Randstad	Employment agency
Federal Ministry for Education and Research	Ministry
BIBB (Institute for Professional Education)	Public body
IG Metall	Union

One can add to the list almost 127 major ICT user companies, which are sponsoring the CIGREF portal.

Also, the national bodies and ministries of the 27 Member States could be potential sponsors of the portal.

The following national associations of ICT professionals and industry and their international umbrellas could also be potential candidates for sponsoring part of the portal:

	Name	Country	Affiliated to
FITCE	The Forum for European ICT Professionals		international umbrella
IFIP	Organisation in Information & Communications Technologies		international umbrella
IT-Star			international umbrella
CEPIS	Council of European Professional Informatics		international umbrella

	Societies		
OCG	Oesterreichische Computergesellschaft	Austria	IT-Star
FBVI	Federation of Belgian Informatics Assoc	Belgium	CEPIS
	Agoria	Belgium	
UAI	Union of Automation and Informatics	Bulgaria	CEPIS
CCS	Cyprus Computer Society	Cyprus	CEPIS
CSKI	Czech Informatics Society	Czech Republic	IT-Star; CEPIS
IKT	IKT Danmark/ ICT Branchen	Denmark	
ITEK	ITEK is the Danish trade association for it,...	Denmark	
	Dansk IT	Denmark	CEPIS
EITS	Estonian Information Technology Society	Estonia	CEPIS
FiCom	Finnish Federation for Communications and Teleinformatics	Finland	
	Finnish Information Processing Association	Finland	CEPIS
CIGREF	Club informatique des grandes entreprises françaises	France	
	Gesellschaft für Informatik e.V.	Germany	IFIP; CEPIS
CEDEFOP	European Centre for the Development of Vocational Training	Greece	
GCS	Greek Computer Society	Greece	IFIP
HEPIS	Hellenic Professional Informatics Society	Greece	CEPIS
NJSZT	John v. Neumann Computer Society	Hungary	IT-Star; IFIP
ICS	The Irish Computer Society	Ireland	CEPIS
IBEC	Irish Business and Employers Confederation	Ireland	
AICA	Associazione Italiana per l'Informatica ed il Calcolo Automatico	Italy	IFIP; CEPIS
AIP	Associazione Informatici Professionisti	Italy	CEPIS
RITI	Riga Information Technology Institute	Latvia	
LITTA	Latvian Information Technology & Telecommunications Association	Latvia	CEPIS
	Lithuanian Computer Society	Lithuania	IFIP
ITI	Information Technologies Institute of Lithuanian Computer Society	Lithuania	CEPIS
ALI	Association Luxembourgeoise des Ingenieurs	Luxembourg	CEPIS
CSM	Computer Society of Malta	Malta	CEPIS
NIRICT	Netherlands Institute for Research on ICT	Netherlands	IFIP
NGI	Nederlands Genootschap voor Informatica	Netherlands	CEPIS
	Polish Academy of Sciences	Poland	IFIP
PIPS	Polish Information Processing Society	Poland	CEPIS
APDSI	Associação para a Promoção e Desenvolvimento da ...	Portugal	IFIP
PROFIN	Associação de Profissionais de Informática	Portugal	CEPIS
ATIC	Asociația Pentru Tehnologie Informatică și Comunicatii	Romania	CEPIS
SSCS	Slovak Society for Computer Science	Slovakia	IT-Star; IFIP; CEPIS
SSI	Slovenian Society Informatika	Slovenia	IT-Star; IFIP; CEPIS
ATI	Asociación de Técnicos de Informática	Spain	IFIP
DFS	Dataföreningen	Sweden	CEPIS
	IT-Företagen	Sweden	
BCS	British Computer Society	UK	
TCN	The Communications Network	UK	FITCE

* The list is not exhaustive

Altogether, at first sight, potential sponsors can be summarised as follows:

- § 27 public bodies and ministries
- § 127 identified ICT user companies
- § 13 identified ICT companies
- § 42 national associations
- § 4 international umbrella associations

10. VALUE PROPOSITION PER STAKEHOLDER GROUP

Each of the main stakeholder groups might have different reasons for sponsoring the ICT Skills and Careers portal. But, for all of them, the services offered by a pan-European skills and qualifications portal are of major importance for their interests and businesses, and will be reason enough to participate in the sponsorship. The tables below list the value propositions for each of the stakeholder groups:

ICT INDUSTRY

Portal Examples	<ul style="list-style-type: none"> • eSCC • e-Skills UK • Tech Career Compass
Sponsors	<ul style="list-style-type: none"> • eSCC: Cisco Systems, CompTIA, Exin, Microsoft • e-Skills UK: Fujitsu, Hewlett-Packart, IBM, Microsoft,... • Tech Career Compass: Cisco Systems, CompuCom, IBM, Intel, ProsoftTraining
Main Interests	<ul style="list-style-type: none"> • Enhance attractiveness of ICT professions in order to attract candidates to the ICT sector and have a bigger pool of candidates • Facilitate work of HR departments through frameworks, making it easier to compare candidates • Career development of employees through adequate training • Facilitate movement of employees between different EU-member states (mainly Multinationals)
Solutions offered through the portal	<ul style="list-style-type: none"> • Enhancement of ICT professions thanks to Framework and information provided through Case Studies, Best Cases and Discussion Forum • Improvement of HR management and increase in job mobility thanks to Frameworks

- Since most of their employees belong to the group of ICT professionals, the ICT industry belongs to the stakeholder groups with major interest in sponsoring initiatives such as the ICT Skills and Career portal.
- As their involvement in other portals shows, ICT companies realised that it is important to contribute and participate in different initiatives in order to enhance the attractiveness of the ICT sector, and improve the professional careers and management of ICT professionals.
- Whereas various initiatives are being undertaken by ICT companies associations, none of the projects deals with the ICT job market on a pan-European level.
- Therefore it can be expected, that major ICT companies will be very interested in sponsoring such a project that helps to solve the identified problems on a pan-European level.

ICT USER INDUSTRY

Portal Examples	<ul style="list-style-type: none">• CIGREF• e-Skills UK
Sponsors	<ul style="list-style-type: none">• CIGREF: 127 major ICT user companies: Accor, Air France, Alcatel, Banque de France...• e-Skills UK: Accenture, British Telecom, John Lewis,...
Main Interests	<ul style="list-style-type: none">• Enhance attractiveness of ICT professions in order to attract candidates to the ICT sector and have a bigger pool of candidates• Facilitate work of HR departments through frameworks, making it easier to compare candidates• Career development of employees through adequate training• Facilitate movement of employees between different EU-member states (mainly Multinationals)
Solutions offered through the portal	<ul style="list-style-type: none">• Enhancement of ICT professions thanks to Framework and information provided through Case Studies, Best Cases and Discussion Forum• Improvement of HR management and increase in job mobility thanks to Frameworks
<ul style="list-style-type: none">• Being very intensive employers of ICT professionals, the ICT user industry also has a very high interest in improvements of the ICT job market. Since the importance of the ICT job market is not as obvious for ICT user companies as it is for ICT companies, it might be necessary to create interest for the issues concerning the ICT sector in order to gain their interest for sponsoring.• Whilst ICT companies are already very active portal-sponsors all over the world, the biggest ICT user industry initiatives can be found on a national basis.• Due to the importance and benefits of job mobility within the EU, the ICT Skills and Career portal should evoke interest in the major ICT user companies, mainly amongst the many multinationals, to who an improvement in the pan-European job market and mobility is of major importance, and they should be very willing candidates for sponsoring.	

PUBLIC BODIES

Portal Examples	<ul style="list-style-type: none"> • EUQuaSIT § e- Skills UK • EQF § IT Skills Hub • KIBNET
Sponsors	<ul style="list-style-type: none"> • EUQuaSIT: EU Commission • EQF: EU Commission • KIBNET: Federal Ministry for Education and Research • e-Skills UK: UK government • IT Skills Hub: Commonwealth Department of Education, Training and Youth Affairs, The National Office for the Information
Main Interests	<ul style="list-style-type: none"> • Enhance attractiveness of ICT professions to attract students and professionals • Improve job mobility, promoting standardisation and homologation of ICT skills, qualifications and titles • Use European guidelines and implement on a national level • Adapt national guidelines on an European level
Solutions offered through the portal	<ul style="list-style-type: none"> • Enhancement of ICT professions thanks to frameworks and information provided through Case Studies, Best Cases and Discussion Forum • Standardisation of skills and qualifications through Skills and Qualifications Frameworks • Europe-wide guidelines through Frameworks
<ul style="list-style-type: none"> • Due to the importance of the ICT sector for the European economy, and the high number of people employed in the sector, public bodies are interested to maintain ICT professions as an attractive option for job candidates. • The EU Commission is highly interested in facilitating job mobility within the European Union. • National bodies and ministries shall be interested in sponsoring their share of the ICT Skills and Career portal. The portal will serve them as guideline for their policies, and contribute to pan-European job mobility. • In order to be able to offer the portal contents in their national language, the national bodies shall also be willing to be the responsible for financing the translation of the portal. 	

PROFESSIONALS ASSOCIATIONS (UMBRELLAS)

Portal Examples	<ul style="list-style-type: none"> • CEPIS • KIBNET
Sponsors	<ul style="list-style-type: none"> • CEPIS: The Council of European Professional Informatics Societies • KIBNET: IG Metall (Union)
Main Interests	<ul style="list-style-type: none"> • Improve ICT job market, minimise mismatch between job offers and demands • Improve professional's job mobility between different companies and within the EU • Increase ICT professionals' market value through improved career development
Solutions offered through the portal	<ul style="list-style-type: none"> • Framework improves job mobility • CV and Career Development tools allow for proper career and CV development and improve professional's market value

- Professional Associations represent ICT professionals, defending their members' interests, mainly the optimisation of the ICT job market. The objectives of the ICT Skills and Qualifications portal will be in line with these objectives, and it can be expected they will be willing to contribute to financing the portal.
- Generally associations do not have as much financial capacity as industry has, since they depend on the contributions of their members. Still, thanks to the expected impact of the ICT Skills and Career portal on their members' professional lives, they should find the necessary resources to help financing such a helpful tool.
- Within the professional associations, it shall also be feasible to find individual sponsors amongst their members willing to contribute.

TRAINING AND CERTIFICATION BODIES

Portal Examples	<ul style="list-style-type: none"> • eSCC • Tech Career Compass
Sponsors	<ul style="list-style-type: none"> • eSCC: Cisco, Exin, European Computer Driving Licence Foundation • Tech Career Compass: Cisco, ProsoftTraining
Main Interests	<ul style="list-style-type: none"> • Homologation and standardisation of skills and qualifications in order to make the training and certification agencies more effective and achieve pan-European reach • Enhance attractiveness of ICT professions in order to maintain and increase number of clients
Solutions offered through the portal	<ul style="list-style-type: none"> • Homologation and standardisation through Skills and Qualifications Frameworks • Enhancement of ICT professions thanks to Framework and information provided through Case Studies, Best Cases and Discussion Forum

- Training and Certification Agencies highly depend on the ICT job market; their business works the better, the more professionals the sector attracts.
- Progresses in standardisation and harmonisation will make their business more efficient. Training and certification agencies need to be always up to date with the latest news, since they need to adapt their businesses constantly to new guidelines and frameworks.
- Thanks to the direct impact in their business, Training and Certification Agencies can be expected to be a willing sponsor of the ICT Skills and Career portal.

Since the benefit of the ICT Skills and Careers portal is obvious for the abovementioned stakeholder groups, and it can be expected that they will be interested in helping to sponsor the project, it is important as a next step to secure their commitment as early as possible.

11. PORTAL LANGUAGES

One of the main points that distinguishes the ICT Skills and Careers portal is the fact that it is pan-European. In order to make it accessible to all European users, it will offer its tools and information in all the official EU languages. This will make the portal unique and extremely useful for all EU citizens. Still, it implies a high cost, since not only all tools, but also the news and information, which will be regularly updated, will have to be translated every time into 23 languages. This will considerably increase the budget required for the portal. Hence, there are three possible scenarios:

- a) The budget of the portal will be sufficiently high to translate all information regularly into 23 languages
- b) The portal will have to limit translations to some (main) EU languages and/or translate selected information only

- c) The different EU Member States will be in charge of translating the portal into their language

If possible, the portal shall ensure the translation of the Frameworks, Career and CV Development Tools, Newsletter and e-Publication into all the EU languages. If the portal has to limit the translations to some EU languages or to some of the information only, it will probably lose part of the pan-European impact. Still, by carefully selecting the languages and information to be translated, the harm could be reduced to a minimum.

If it is decided to leave the translations up to the Member States, the portal might run the risk, due to a lack of interest or political/administrative burden, of not being translated into some of the EU languages. This might severely harm the pan-European uniqueness of the portal. A possible solution would be to sponsor translations into all languages for an initially defined period of time (e.g. one year), in order to position the portal in all EU countries, make it essential and afterwards leave the translations up to the Member States. In this way, the portal could prove its importance to the users, and it would be easier to involve the different governments. Also, perhaps national industries (associations) will offer to sponsor the translations.

12. MARKET ENTRY

According to the research, primary stakeholders currently scarcely use existing ICT portals and initiatives and far too often have very little knowledge about them. For example, on average, only 49% of all interviewed stakeholders are familiar with European ICT framework initiatives, and even they use them only very rarely. In general, European ICT skills and qualifications initiatives have very limited user audiences. Hence, the ICT Skills and Careers portal will need to focus on **visibility** and add significant value to its audiences to be able to build a significant and regular user-base.

The portal will gain visibility through main stakeholders and sponsors, as well as other European related portals. Since the impact and success of the implementation of the pan-European framework depends on its acceptance, primary stakeholders should be interested in supporting the use of the portal to disseminate the framework. Links in the right places are an important tool for dissemination, along with the right placement in Internet search engines (Google).

13. BUSINESS RISK AND CONTINGENCY PLAN

Initially, the main risk is not finding sufficient financial sponsors for the portal. If this happens during the start up phase, it will be necessary to analyse whether the European Commission could increase its support for the portal through a range of special projects (e.g. Leonardo, FP7, etc.). Once the portal is up and running and has proven its relevance and added value, it is more likely to identify sponsors. Alternatively, the subscription and user-based model will be applied to several of the portal areas.

- § Should it not be possible to **find collaboration (contents)** from other portals, the portal will, against the initial proposal, develop the contents itself. In that case, published resources will be limited and developed in the long run bit by bit.
- § If the **public bodies of Member States are not interested**, and **therefore do not contribute to the translations into their own languages**, the portal will be offered in English and the languages of the participating countries only.
- § If the **project proves to be more expensive than estimated**, additional sponsorship will be required and, if necessary, a subscription and user-based model will be applied.
- § If **different sponsors disagree as to the contents and political issues of the portal**, some of the sponsors might have to be substituted. The portal will always be managed according to its initial proposal and will not adapt to the needs and opinions of its sponsors.
- § In the case that **users are not aware of the portal or not interested in the portal**, it will be necessary to enhance the collaboration with other portals in order to gain visibility. Links might have to be created, and stakeholders will be involved to spread information about the portal.
- § If **users do not use the portal repeatedly**, a committee will have to review its contents, and renew if necessary.
- § If the portal has **a low number of users**, it might be necessary to decide to discontinue the portal. An initially defined number of users per defined period of time will be compared to a regular monitoring of user numbers. Additionally, market enquiries about user and stakeholder satisfaction will be carried out, and there will be a space for feedback in the portal.