

TECHNOPOLIS



Final Report for the Thematic Evaluation of the Information Society

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1 Executive Summary

This is the Final Report for the study on 'Information Society and Economic and Social Cohesion – the role of the Structural Funds', carried out for the European Commission, DG Regional Policy (contract No 2001.CE.16.0.AT.033).

The work was undertaken by a consortium made up of Technopolis Ltd, IRISI (Europe) Ltd, eris@ (The European Regional Information Society Association) and Professor Lena Tsipouri.

1.1 Background

The development of the Information Society¹ is one of the major social and economic challenges facing Europe and the rest of the world. Although the IS is becoming pervasive, the rate at which it is growing and affecting people's lives differs from region to region, and from Member State to Member State. It is certain that its development will have far-reaching consequences for every aspect of living, learning and working. The European Union needs to extend its position as one of the world leaders in the development of the IS.

Recently, there has been a move towards greater co-ordination of IS policies. At the end of 1999, the Commission launched a number of IS-related initiatives, the most important of which were e-Europe and the Strategy for Jobs in the Information Society. These were strongly endorsed by the Lisbon European Council (April 2000) and on 24 May 2000 the Commission published the Draft Action Plan: e-Europe 2002, An Information Society for All. This was adopted as a Communication: e-Europe 2002 An Information Society For All initiative², with its associated Action Plan published in June 2000, and the subsequent update in December 2000³. The new action plan "e-Europe 2005: An Information Society For All"⁴ has recently been approved. A Staff Paper has also been written highlighting progress towards achieving the e-Europe goals, and a number of internal and external projects are under way to continue this measurement.

e-Europe is comprehensive, covering virtually all of the domains which can be affected by the IS. Below the strategic aims, there are 10 areas of activity, which cover everything from enabling cheaper and faster Internet access to supporting working in the knowledge economy, to promoting e-health or e-government or e-commerce.

These types of programme are aimed primarily at the 'supply side' – the creators of knowledge and knowledge based networks and infrastructures. However, the European Commission has also been addressing the 'demand side' in its programmes.

¹ Information Society refers here to the economic, social and institutional process in which ICT related changes are embedded

² Prepared by the Council and European Commission for the Feira European Council, 19-20 June 2000

³ prepared by the European Commission for the European Council in Nice, 7-8 December 2000

⁴ Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions COM (2002) 263 final

It has achieved this through a series of targeted programmes to encourage the systematic development of regional strategies and actions to stimulate demand and thus take advantage of the opportunities offered by the IS. Most of these are pilot projects funded under Article 6 (ESF)/ Article 10 (ERDF) including the Inter-Regional Information Society Initiative (IRISI) and the Regional Information Society Initiative (RISI) which ran from 1995 to 1998, and a successor to RISI called RISI+ which is now in its concluding phase. Although strategic in approach, they have been mostly small scale.

Regional development policies for 2000-2006 have been steered towards the IS, based on a recognition that a region's competitiveness lies in its potential for innovation and that the new technologies can be an instrument for social integration - or a source of exclusion if not available to all. The IS is now regarded as an integral part of the development programmes being implemented under the SF.

The two underlying principles of this integration have been described as:

- The reorientation of structural assistance to the new technologies (human resources, innovation, etc.) rather than infrastructure, to help create the "digital reflex" that is sometimes lacking in Europe;
- The consistent and structured integration of the IS into the priority objectives of regional policy.

In addition there has been a shift from financing actions under innovative programmes to their inclusion in the mainstream funding processes – a move from 'pilot actions' to 'standard procedures'.

As part of the Reform of the Structural Funds 2000-2006, the concept of the 'mid-term review' has been introduced. The intermediate evaluation is linked to the allocation of a Performance Reserve, amounting to 4% of each national allocation which will be distributed to those programmes which, in the opinion of the Commission together with the Member States, are performing best. Each plan sets out the indicators against which it should be measured in this process. These reflect the effectiveness, management and financial implementation of the programmes and measure their mid-term results in relation to specific initial targets and also offers the opportunity for some realignment of the actions.

1.2 Aims of the study

This evaluation set out to answer three main questions:

- the actual contribution and potential – as well as major constraints – of Structural Funds interventions in relation to the development of IS in Europe (in particular to the objectives and goals of the e-Europe initiative)
- the main objectives and strategies pursued in the field of Information Society in the context of Structural Fund (SF) interventions
- the extent of disparities between regions in the area of Information Society (IS), i.e. in terms of access to main information and communication technologies (ICT)

The SF are one of the main financial instruments (accounting in total for perhaps 35% of total Community Funds) which are being used to attempt to achieve the significant targets now being set for the rapid deployment of the IS. Greece for instance has created a National Operational Programme (NOP) aiming at the enhancement of the IS, totally independent of other, more traditionally oriented Operational Programmes (OP). However, the EC needs to know more about how the SF have been used, and how they could best be used in future, to achieve maximum impact

There were a number of key issues that were investigated during this evaluation:

- How much SF investment has been committed to expenditure on IS actions, particularly for the current programming period (2000-06)?
- What types of IS activity are expected to be funded through the SF?
- What differences are there between regions (in approaches to the use of the SF, the processes of determining priorities, and in IS priorities and outcomes)?
- How effective has this IS planning been? (which implies an assessment of the effectiveness of the process and management mechanisms used to create IS priorities and to implement them).
- The importance of the IS as a regional policy priority in each policy programming period, and the differences in the importance attached to IS between the programming periods.

1.3 Method

The work consisted of three overlapping phases involving

- A census, with appropriate analyses, of all Objective 1 and Objective 2 regions based on desk and documentary research to establish (mainly) quantitative socio-economic indicators along with basic information about the structure and content of Programming Documents from an IS perspective.
- A more in-depth investigation of a sample of (ideally 50% of) Objective 1 and (ideally 25% of) Objective 2 regions. This was to be based on more detailed reading of Programming Documents followed up by field research using a structured questionnaire. This investigation was supplemented by 15 case studies of regions shown to be of special interest.
- Analysis and synthesis of the data collected and associated reporting.

1.4 Principal Findings

1.4.1 Census level analysis

Our so-called 'census' comprises data on 150 regional programmes covering all Member States except Luxembourg. We have, in addition, looked at the three National Operational Programmes (NOPs) on the information society for Greece, Portugal and Spain and, where appropriate, these are included in the analysis.

In practice, we had to work with fewer regional programmes than the 150 stated above due to the limitations, anomalies and other problems associated with the data as

there is no agreed systematic basis for the collection and reporting of regional data. Indeed, in too many circumstances, relevant data appears not to be available.

In a number of cases, we were unable to adequately match the eligible territory with appropriate regional data sets. This highlights what may be a growing trend for national authorities to negotiate regional programmes with the Commission which are more tightly targeted on specific communities (what might be termed sub-territories or areas) needing development support, rather than more blanket prescriptions covering whole territories classified neatly as NUTS II or III. Such focussing of programmes on specific communities makes good sense in many instances but, in the absence of more refined and localised data collection systems, it makes evaluation and analysis significantly more difficult. Often the indicators necessary for robust and appropriate analysis and evaluation are not available – certainly not on a regular time series basis.

In some cases, the number of regional programmes included in our analyses falls to around 70. This arises, in part, because some regions do not see the information society as a priority in terms of the Structural Funds and therefore have not included *any* measures relating to it. In other instances, however, our reading of regional programme documents indicates that the information society is indeed a priority in a Structural Funds context but we have been unable to extract information relevant to our analysis.

We emphasise that our study was not intended to evaluate the implementation, outcomes or impacts of these regional (and 3 national) programmes for 2000-06. Our analysis is based almost entirely on programme documents (mostly written in 1999). As such, our evaluation must be considered to be *ex ante* in nature and concerned mainly with the aspirations, intentions and plans of the regions.

Amongst the regional programmes and the 3 National Information Society Programmes (of Greece, Portugal and Spain), we have identified a total of 798 Programme priorities of which 130 are devoted, or contain significant measures and sub-measures relating, to the Information Society and the development or deployment of Information and Communications Technologies (ICTs) and for which the relevant financial information is available. We broadly define a priority or measure as containing information society or ICT-related content where it involves the use or development of, training in, or access to ICTs, including telecommunications infrastructure. Our definition accords closely with (and indeed incorporates) the 11 measures identified in the e-Europe 2002 Action Plan.

It is important to stress the need for caution about our estimate. We have been careful only to record financial values for sub-measures, measures or priorities where these are mainly for Information Society development. Unfortunately, programme documents often fail to provide detail below the measure level. Even at this level, measures that appear to relate primarily to ICT development may mask other activities and their related expenditures. Conversely there are almost certainly ICT-related expenditures contained within priorities and measures of which we are unaware. Moreover, other priorities and measures may contribute indirectly to information society and ICT development. A number of regions have introduced the information society as a horizontal or cross-cutting theme in their programming. In

such cases, in particular, there may well be ICT-related expenditures that we have been unable to detect from looking at Programme Documents. Such factors may, to some degree, suggest that our figure of 7.36% is an underestimate.

The 130 priorities or measures that we have identified as being committed wholly, or in large part, to information society development have been classified according to the eEurope priorities and we have weighted the frequency of these priorities/measures by the investment value of the priority or measure.

A number of points emerge from this analysis when taking all regions together.

- The regions included in our analyses have investment plans that cover most (8) of the eEurope action lines. Only in the cases of “Faster Internet for Researchers”, “secure Networks and Smart Cards”, “eHealth-Telemedicine” and “European Digital Content” is there negligible or non-existent priority.
- Most programming will have taken place in 1999 and 2000 before publication of the e-Europe Initiative (December 2000) and Action Plan (March 2001).
- Infrastructure development (“Cheaper, Faster Internet) seems to remain a priority for a substantial number of regions. Many of the regions in question are peripherally located and/or contain large rural hinterlands where population densities are low. It would seem that many of them are seeking to use their Structural Funds to remedy deficient infrastructure and to avoid worsening the digital divide, due, no doubt, to a combination of under-investment in the past, their peripheral locations, and the need to become and remain competitive.
- It is clear that “Working in the KBE and ICT Skills” and “Participation and Access for all in the KBE” are the main priorities in the programmes we have investigated. They suggest that concerns about the digital divide and human resource development for the New Economy are main concerns for the programmes that have been analysed here.
- Support for e-Commerce development is seen to be of some importance. At the time that most of the 2000-06 programmes were in preparation, e-Commerce was seen generally as of importance to increasing the competitiveness of enterprises and to achieving enhanced regional competitiveness.
- Likewise, towards the end of the 1990’s, there was a growing body of opinion, that modernisation of public services was a growing priority leading to the start of a large number of e-Government initiatives. There is some evidence here to suggest that e-Government development at the local and regional levels has become an increasing programme priority.
- There are a few investment plans regarding “Faster Internet for Researchers” and for “Youth into the Digital Age” but the relatively low priority accorded to these is probably explained by the fact that, in many Member States, these will be seen as responsibilities of the national authorities.

In the Objective 2 regions, a higher emphasis is placed on infrastructure development (“Cheaper, Faster Internet, 23% of Planned ICT investment), “Participation and access for all in the KBE” (21%) and “Accelerating e-Commerce” (42%) than is the case in the Objective 1 regions. On the other hand, Objective 1 regions that might be considered in many cases less “information society mature” than their Objective 2 counterparts, place a higher relative priority on “Working in the KBE and ICT Skills”

(17%) and “Government on line” (8.5%). The Objective 1 regions, unlike the Objective 2 regions, have some plans (albeit modest) to invest in “Youth into the Digital Age” (5%), “e-Health/Tele-Medicine” (2.4%), “European Digital Context” (5%) and “Intelligent Transport” (3.7%). In our view, such results are not unexpected since we suspect that Objective 1 regions are inclined to favour public services and actions needed to re-train their workforces. By contrast, Objective 2 regions favour support for enterprise and enhancement of their ICT infrastructure, both in pursuit of increased regional competitiveness.

We conclude that in broad terms the regional programmes are acting (or planning to act) in ways that will support the priorities of the eEurope 2002 Action Plan. Our analysis seems to suggest that regions’ plans for information society development are quite closely in accord with the new priorities contained in the eEurope 2005 Action Plan.

However, given the timing of the two processes we are inclined to think that regional programmers would have been more likely to design their information society actions from a different perspective. There is a growing body of opinion that a balanced information society depends on five main planks: infrastructure, access, applications and services, digital content development, and ICT skills development.

On the basis of the evidence available to us, we consider that regional information plans are generally likely to assist in the achievement of eEurope goals (both 2002 and 2005). Rectifying infrastructure deficiencies remains an important issue in many regions whilst applications such as e-Business, e-Government and e-Learning are clearly also important. At the same time, there are quite a number of regions that attach some importance on the need to stimulate demand. Quite widely, regions perceive the need for ICT skills development (not the same as e-Learning in our view and not to be confused with it) to help people to live and work in the Knowledge-Based Economy. Other areas of development are not overlooked with a number of initiatives (albeit small in scale) in the fields of e-Health, Intelligent Transport and Digital Content Development.

We see some quite dramatic differences of approach between the aggregated regional programming priorities of different member states.

For some e-Europe priorities the proposed ICT investment is quite prominent (> 25%) and we comment on some of these cases below.

- Austria (51%), Belgium (46%), Germany (27%), Spain (40%) and Sweden (72%) each plan to commit more than 25% of their ICT Structural Funds investment on infrastructure-related development (“Cheaper, Faster Internet”). In the Austrian case, the measures in question derive from two regional programmes only – the region of Burgenland (Objective 1) and Voralberg (Objective 2). The case of Spain is dominated by the NOP proposal to upgrade the inadequate rural telecommunications network (TRAC). In Sweden, the data are drawn from two regional programmes only, Sodra Skogslansregionen and Norra Norrland (both Objective 1 but which may not be typical). However, these are quite remote and

sparsely populated regions whose economic future could be argued to depend on better infrastructure.

- In no Member State does there appear to be high importance attached to “Faster Internet for Researchers”.
- As we might anticipate, since they tend to be seen primarily as national/European responsibilities, none of the regional programmes propose investment in “Secure Networks and Smart Cards”.
- In all Member States, regional programmes place a low investment priority on “Youth into the Digital Age” since, usually, support for education systems is mainly a national competence.
- Again, regional programmes in Greece (24%), France (35%), Finland (33%), Germany (26%) and Spain (33%) prioritise “Participation and access for all in the KBE” which reflects, we think, a more widespread concern about the digital divide and overcoming alienation and disaffection in disadvantaged communities and amongst disadvantaged groups.
- “Accelerating e-Commerce” is a high priority for regional programmes in five Member States: Austria (34%), France (33%), Greece (40%), Italy (32%) and highest in the UK (47%).
- “Government on line” appears on this evidence to be a major priority in the Italian programmes. This conclusion is drawn primarily from the planned ICT Spend of the Objective 1 regions of Calabria, Campania, Molise, Sicily and Sardinia and the Objective 2 region of Apulia. The measures in question are typically of the kind “Promotion and development of IS through innovation and improvement of the Public administration's efficiency”.
- E-Health/Tele-Medicine are not seen as major priorities in the context of regional Structural Funds programmes as yet. Again, however, we might anticipate that national OPs for the information society (especially in Greece, for example) and nationally-funded initiatives will be proactive in developing applications in this domain.
- In the regional programmes of only four Member States did we find evidence of planned investment in “European Digital Content” – and in none of these is it seen as a major priority. In many instances in these countries (France, Germany, Greece and Portugal) there would appear to be a particular emphasis on the development of digital content to promote tourism products.

In general terms, we find little evidence in this data to suggest that any obvious programming patterns (in terms of priorities) exist amongst groups of Member States (e.g. Cohesion Countries versus the rest).

As part of our analysis, we have investigated a number of factors in the hope of identifying some of the determinants of the levels of investment in, and thus priority attached to, information society development at the regional level through the Structural Funds.

- we would be inclined to predict that an Objective 1 region will spend more per capita on ICT than an Objective 2 region.
- small (and therefore more coherent) regions are, on average, likely to commit more to ICT developments per capita than do larger regions.

- regions in the South appear to have planned to commit more in per capita terms to information society investment than regions in the North. Such differences (over 30% more Planned ICT Spend per capita on Objective 1 regions than in Objective 2) may, however, be accounted for simply by the predominance of Objective 1 regions in the South and the fact that Objective 1 funding levels are higher.
- the differences in planned ICT Spend per capita between regions of high and medium population density are not especially marked, but regions of low population density plan to commit the significantly higher per capita levels of investment in ICTs.

A number of approaches have been taken by regions in seeking to shape their way to the Information Society. We have sought to identify the ways in which regions have, if at all, incorporated the information society into their Structural Funds planning. Broadly speaking, we can classify these into 4 groups as below.

- those which treat the IS as one priority amongst many (e.g. Valencia). We classify these as **vertical** approaches.
- those that have dedicated a single National Operating Programme (such as Portugal, Spain and Greece) or cross cutting Theme to IS actions (e.g. South Yorkshire). We classify these as **horizontal** approaches.
- those which combine the above (such as Wales), so there is **both** a cross cutting IS theme as well as the IS being part (or all) of vertical priority.
- those which treat the IS as a separate element in some/all of the priorities might be described as fragmented in their approach, representing **neither** a vertical nor horizontal approach.

Just over **half of the regions have chosen to incorporate the Information Society wholly or in part as a cross-cutting (i.e. horizontal) theme**⁵ - that is, either as a horizontal theme or in combination with a vertical priority.

NOPs for the information society in Greece, Portugal and Spain are of significant size and in the Greek case the NOP (OPIS) dwarfs the sum of the information society actions in the 13 regional OPs. Whilst we have estimated that the 150 or so regions making up our 'census' plan to spend in the region of €10.6 billion on information society actions, the 3 NOPs in Greece, Portugal and Spain alone account for almost €4.5 billion. These NOPs are, by their very nature, horizontal actions since they cover a wide variety of information society actions in a top-down coordinated manner. In the crudest of terms, we estimate that the 3 NOPs on the information society will increase the average ICT Spend per capita in southern regions with horizontal programmes by about € 150 per head.

Transversal national programmes are difficult to manage in these countries. In particular, the time and effort taken in proper coordination may delay implementation and some compromises may be necessary if problems of slow absorption are to be avoided. At the same time, we think such programmes have many merits and time taken to plan and implement their effective delivery should be well rewarded in time.

⁵ In many cases, the Information Society was one of a number of such themes (mainly Equal Opportunities and Sustainable Development) suggesting that the Commission's guidance has been taken seriously.

1.4.2 The Sample

In addition to collecting data on a census basis, we have endeavoured to look in greater depth at a sample of regions.

Our five main criteria, and the questions related to each, were concerned with (1) management of the programme, (2) the nature of the decision-making processes that led to the choice of priorities, (3) the appropriateness (e.g. balance) of decisions regarding proposed information society investments, (4) mainstreaming (and consistency) with other regional, national or European policies, and (5) the quality of proposals for implementation (including target setting, monitoring and evaluation etc.). Those regions that took part in the IRISI or RISI initiatives perform above average in terms of our evaluation of their programming processes perhaps since, to some degree, the so-called RISI methodology has become quite widely accepted as a sound, comprehensive and successful approach to regional information society development.

1.4.3 Input from the regions

The low level of response, despite repeated follow-up means that it is not really possible to draw up any statistically significant conclusions on the results. Nevertheless it is possible to identify certain patterns based on the data and also on the conversations we had as part of the follow-up process.

- No patterns could be discerned among the level of IS support or the percentage of this financed by the Structural Funds. This would seem to reflect differences in interpretation of the “Information Society” with some using very specific interpretations, and others considering that nearly all activities have some aspect relating to the Information Society.
- There was a lack of information on IS indicators at a regional level.
- In terms of IS maturity and the trend, the regions all reported a significant development from the previous period. Only one felt they were starting from zero and three felt they had reached full maturity.
- In terms of the relative importance of the Information Society between the two programming periods, most respondents felt it had become significantly more important, four slightly more important and only one reported no change.

1.4.4 Lessons for good practice

- In general some note had been taken of the previous programme and the ex-ante evaluation, but in many cases the IS was not specifically mentioned in either, thus this was a new area of intervention. Where it had been taken into account this was more likely to be in terms of the identification of specific targets than in the areas of shaping the priorities or arrangements for monitoring and evaluation
- In general the plans had very little material in regarding baseline IS information. In some cases regions have commissioned specific studies to complement the programming process or as part of a wider IS strategy development process.
- Generally speaking there was evidence of widespread consultation over the plan itself, often as a result of comments in the ex-post evaluation of previous programmes, but the level of specific IS consultation was less well defined.
- the extent to which planned impacts were clearly identified was extremely limited.

- In most cases there was evidence that the results of the SWOT analysis had been taken broadly into account. The number of instances where this had then led to specific actions was less marked
- Only in a few cases did we find examples of specific actions for monitoring and evaluation elements with a specific IS focus.

1.5 Conclusions and recommendations

The conclusions highlight a number of important issues which can be acted on to improve both the general level of the information available on IS issues at both regional and European levels, and can contribute to the improvement of the planning process in subsequent periods. This is important since although one of the main aims of the study is to contribute to the mid-term review, in real terms many of the issues raised need to be taken up now in order to be adequately addressed in the next programming period. Of course, it is important to remember that these are based on what the regions set out as planned activity, and takes no account of implementation either in terms of process or impact on the ground.

1.5.1 Conclusions

Structural Funds investment in information society actions has increased. We have estimated, on the basis of our investigation of 150 regional programmes and 3 national programmes for the information society that the Structural Funds can be expected to co-finance a total of just under EUR 16 billion of information society investment in the period 2000-06. Of the EUR 16 billion, we estimate that the EU contribution is about 60% (or about EUR 10 billion). Of the total EU Structural Funds budget, this amounts, in approximate terms, to about 4 to 4.5% across both Objective 1 and Objective 2 regions.

Regions are tending to adopt coherent and strategic approaches to information society planning – amongst the 74 regions that we identified as having a priority for information society development in their programming, *the majority (almost three quarters) have adopted a coherently planned and strategic approach*. A higher proportion of Objective 1 regions has adopted a structured and strategic approach to programming the information society. However, about half of the regions investigated do not appear to prioritise information society development (or had provided no financial information regarding it).

In terms of National and Regional Programming, national programmes for the information society have provided leadership in some Cohesion Countries. As such, they *represent coordinated and top-down approaches* and, in the Greek and Portuguese cases at least, were a response to concerns regarding a lack of management and administrative competences at the regional level. Ongoing dialogue between the national authorities and the regional partnerships is critical in these cases and wherever possible, national programmes need to be adapted in terms of regional implementation to emphasise region-specific needs and priorities.

The choice between bottom-up and top-down approaches to regional information society development is dictated, in part, by the degree of regional administrative skills in general and IS-maturity in particular, but effective coordination between the national and regional levels will be essential.

The design of national programmes and their management arrangements, as well as their relationship to regional programmes, are shaped by the 'IS-maturity' of regions. Strategies for the information society at national and regional levels, as well as Structural Funds programming in the wider context of regional development, could be better coordinated and reported.

In terms of factors determining the scale and ambition of regional programmes for the Information Society, Objective 1 regions plan to invest more per capita in information society actions than do Objective 2 regions. However it may be that the variation between Objective 1 and 2 regions may be explained by variations in funding and funding regimes alone. Smaller regions are investing more (per capita) in information society development than larger regions, which may be because such regions feel better able to marshal the key players behind a strategy for change and, in addition, may feel that the scale of the challenge is more achievable.

We have found clear evidence that the more sparsely populated a region and/or the more peripheral its location, the greater is the likelihood that its plans for Structural Funds expenditure on information society development is greater than in regions located nearer the core of Europe or regions that are more densely populated.

For the sake of completeness we endeavoured to evaluate other potential determinants of regions' planned investment (per capita) in information society measures, amongst them education and unemployment levels. However, we were unable to establish any evidence of a link between these.

We found substantial variations between regions in respect of planned information society investment through the Structural Funds, from those that have no apparent plans for the information society to those committing very significant resources (up to 38% of Total Structural Funds expenditure in one case) in support of their information society ambitions.

As regards the Information Society priorities of the regions, regional programming priorities for the information society were broadly consistent with the priorities of the *eEurope* 2002 Action Plan. Taken as a whole the main priorities were

- enhancement of infrastructure,
- access and participation for all to diminish the digital divide,
- the acceleration of, and support for, e-commerce (especially for SMEs), and
- the development of skills for work in the knowledge-based economy

Whilst these are generally consistent with the *eEurope* 2002 priorities, we think it unlikely that the ROPs were influenced much (if at all) by them since programmes were drafted mostly before the publication of the first *eEurope* initiative.

We found clear indications that Objective 2 regions favoured infrastructure enhancement, acceleration of e-Commerce development, and encouragement for Participation and Access in the Knowledge-Based Economy relative to Objective 1 regions. The Objective 1 regions, on the other hand, placed relatively greater

emphasis on investments relating to working in the knowledge-based economy and the development of ICT skills, and government on-line.

Some eEurope priorities are less relevant to regional needs and opportunities than others and we conclude that there are better and more relevant ways of classifying information society actions at least from a regional development perspective. We consider there is a need to develop and promote a more coherent framework for regional information society development and to formulate an approach to indicators and benchmarking that (a) are better related to regional development agendas and (b) which will remain constant through time to allow time series data to be developed. In particular, we think there needs to be better 'mapping' between eEurope indicators and the priorities of regional development and cohesion.

Almost without exception, regions tended to favour what we consider to be *supply-side* information society measures including infrastructure development, support for e-Commerce, e-Learning and e-Government, and indeed we were surprised by the extent to which regions, especially those with Objective 2 status, prioritised enhancement of their telecommunications infrastructure. If accelerated broadband development and take-up are critical to the economic development and competitiveness of Europe and its regions, then new policy questions and challenges arise which, thus far, have been inadequately addressed. In the context of cohesion and regional policy, we may be facing the threat of a growing digital divide unless steps are taken to prevent this. However, in the absence of adequate indicators of demand, we find it difficult to see how the needs of enterprises and citizens can be met through appropriately crafted information society measures.

Some programmes incorporate information society measures in a highly focused way whilst others adopt a broader-based approach. We think neither is right and neither is wrong. The issue must be judged in the specific (and largely unique) circumstances and context of each region and its needs and priorities at a given point in time.

As regards more general aspects of structural funds programming and programme management in the context of information society planning we noted that Programme documents have evolved over earlier CSFs towards a common broad approach and style of presentation. However, we found these documents lack a common approach and format with regard to data collection and reporting and there is no unique and mandatory system for data transmission to the Commission. We have also detected a trend, compared to the earlier programme period, for there to be increasing fragmentation (especially in Objective 2 regions) in defining eligible areas and sub-territories which will make the problems of data collection yet more difficult and costly and potentially impair attempts at effective evaluation. We are struck by the slowness of the Structural Funds programming, approval and implementation processes in the face of fast-changing technologies and to changes in demand. In this context, there is a need to develop flexible strategies, and to incorporate regular monitoring, evaluation and review mechanisms. Our evaluation of the sample regions indicated that these management and implementation issues were the weakest amongst the criteria that we evaluated.

1.5.2 Recommendations

As the implementation of the Structural Funds relies heavily on the principle of partnership, we have attempted to address our recommendations to each of the relevant levels. The full report contains some 42 recommendations addressed to the key actors, and also to the Candidate Countries.

The recommendations to the **Commission** relate to:

- **Programming issues**, specifically that programming documents should be more specific, take into account the overall context of the Region's information society strategy, and that the process should be more flexible and streamlined enabling evolution with the changing IS environment.
- **Evaluation and monitoring**, where there is a need for a thorough ex-post evaluation of the RISI regions' programmes, for a review of the impact of the growth in broadband access on inclusion and cohesion policies and on the digital divide. The mid term review should evaluate the effectiveness of implementation arrangements, and the continued relevance of the IS actions to the needs and priorities of the region, and look specifically at those programmes that do not have a specific commitment to IS investment in their programming documents. The national IS programmes should also be reviewed due to their scale and their potential interest to other Member States and the candidate countries.
- **Data, indicators and benchmarking**, where the Commission could offer encouragement and promote activities of regions attempting to develop this activity.
- **Policy issues**, where the Commission should ensure that the ongoing development of the eEurope Action Plan and its implementation should take the regional dimension more strongly into account to ensure that ICTs are at the service of the individual, enterprises, communities and regions. It should also take advantage of its privileged role as overall observer to bring together information and good practice relating to regional information society development, to encourage regions to cooperate more in sharing good practice and to continue and improve the co-ordination of its own IS related policy instruments.

Recommendations to the **Member States** relate to the need to improve systems of regional data collection, and to co-ordinate effectively between the different levels of government in terms of design, planning and implementation. Where there are national IS Programmes, the implementation mechanisms need to be carefully followed up. Member States should also consider carefully the potentially conflicting demands of good strategic planning and implementation compared to speed of absorption of funds, enabling regions to take a strategic view and potentially achieve greater success in the longer term.

Recommendations to the regions focus on:

- **Programming, Planning Processes and Regional Capacity** where there is a need for an *explicit planning process based on an underlying methodology* that engages all sectors of the community with a strategic, holistic and integrated perspective. Information society proposals need to be carefully selected and based on a good justification linked to a sound analysis of the implementation context

and the territory-specific needs and opportunities with clear links to any region-wide integrated strategies. The less IS-mature regions should invest time and effort in strategy development and building regional development capacity. More and deeper inter-regional networking could assist in this. Where regions adopt a horizontal approach to information society programming (either on its own or in combination with a vertical approach), effective implementation arrangements are an absolute necessity to secure appropriate funds to ensure that targets are achieved and ambitions are realised.

- **Information Society priorities** should be driven by regional need and demands – where there is a national OP, regions should avoid the temptation to attempt to increase their success in securing a share of budgets allocated to national priorities except insofar as these meet clearly identified *regional* priorities. All regions, but especially those that are sparsely populated or in peripheral locations, should monitor developments to protect themselves against a widening digital divide. Regions should more readily be willing to adopt innovative approaches to the use of the Structural Funds, focusing their investments on the wealth-creating sectors of the future, and they should place greater emphasis on demand stimulation measures.

For the **candidate countries** we recommend that Information society planning should be strategic in its approach taking into account all sources of funding, with a clear, comprehensive and transparent articulation between national and regional planning and implementation. In preparing their strategies and plans for information society development, candidate Countries should aim to ensure an adequate allocation of funds to ensure conditions for effective take-off in which (mostly) private investment will sustain appropriate development. This funding should be accompanied by an assessment of both the risks associated with the commitment of such funds and the ability to achieve desired outcomes and impacts.

Information Society planning should focus as much on (ICT) demand stimulation as on supply-side measures. Particular and ongoing efforts should be made to develop good planning processes that reflect user needs (at local, regional and national levels) by favouring a bottom-up approach that is open, participative, representative and partnership-based with a view to building a consensus behind priorities for action. In particular, there is a need to achieve an adequate focus for investment, avoiding the pitfalls of fragmentation and spreading resources too thinly across too many priorities.

Finally, there is an overall need, affecting **all players**, for a common set of core indicators relating to information society development, which go beyond basic availability, usage and cost data, and that can be used at European, National and importantly, at regional levels and which take into account the regional development agendas.

2 Introduction & Background to the Evaluation

This is the Final Report for the study on 'Information Society and Economic and Social Cohesion – the role of the Structural Funds', carried out for the European Commission, DG Regional Policy (contract No 2001.CE.16.0.AT.033).

The work was undertaken by a consortium made up of Technopolis Ltd, IRISI (Europe) Ltd, eris@ (The European Regional Information Society Association) and Professor Lena Tsipouri.

2.1 Structure of the report

This report contains the following sections: an introduction to the study and to the policy context regarding both the Information Society (IS) and the Structural Funds (SF), an outline of the aims and objectives of the study, a description of the methodology and the issues arising, a discussion of the principal findings and a set of conclusions and recommendations. In the annex will be found the regional profiles and case studies referred to in the text, and the principal survey instruments.

2.2 The Information Society policy context

The development of the Information Society⁶ is one of the major social and economic challenges facing Europe and the rest of the world. Although the IS is becoming pervasive, the rate at which it is growing and affecting people's lives differs from region to region, and from Member State to Member State. We do not know yet just how radically the IS will transform daily lives but it is certain that its development will have far-reaching consequences for every aspect of living, learning and working. Therefore, citizens, businesses, governments and the European Commission need to engage actively with the changes that are already under way in order to shape the future. The European Union needs to extend its position as one of the world leaders in the development of the IS.

Since the Delors' White Paper and the 1994 Corfu Summit, in response to this new challenge, the European Commission has been creating programmes and policies to ensure that a balanced approach is taken to the development of the IS across all regions of the European Union. Special attention has been paid to the Less Favoured Regions (LFRs), as they are most vulnerable to the changes taking place but in relative terms they have potentially the most to gain. Following the Bangemann Report, early studies for the universal service and the cohesion perspectives of the effects of telecommunications formulated ideas on the assessment of the issue. Reports to the G7 and the United Nations Committee for Science and Technology for Development have contributed to the design of a methodology linking globalisation, IS and development. However as technologies change so rapidly, such exercises need to be renewed constantly.

⁶ Information Society refers here to the economic, social and institutional process in which ICT related changes are embedded

More recently, there has been a move towards greater co-ordination of IS policies. At the end of 1999, the Commission launched a number of IS-related initiatives, the most important of which were e-Europe and the Strategy for Jobs in the Information Society. These were strongly endorsed by the Lisbon European Council (April 2000) and on 24 May 2000 the Commission published the Draft Action Plan: e-Europe 2002, An Information Society for All. This was adopted as a Communication: e-Europe 2002 An Information Society For All initiative⁷, with its associated Action Plan published in June 2000, and the subsequent update in December 2000⁸. The new action plan “e-Europe 2005: An Information Society For All”⁹ has recently been approved. A Staff Paper has also been written highlighting progress towards achieving the e-Europe goals, and a number of internal and external projects are under way to continue this measurement. An example of the latter is the Statistical Indicators for Benchmarking the Information Society (SIBIS) which aims to create a number of indicators which can be used across the Union to measure the IS in general, paying particular attention to the 10 priority areas contained within the e-Europe documents.

e-Europe is comprehensive, covering virtually all of the domains which can be affected by the IS. It is a hierarchical programme. At a high level the areas are:

- Cheaper, faster, secure Internet
- Investing in people and skills
- Stimulate use of the Internet

Below these strategic aims, there are 10 areas of activity, which cover everything from enabling cheaper and faster Internet access to supporting working in the knowledge economy, to promoting e-health or e-government or e-commerce. Each of the 10 domains has a series of activities (typically 6 or so), which can be ‘measured’. Success in moving along the IS ‘continuum’ from ensuring universal access to telephone services at the lowest end to a leading global role as a demonstrator society encompassing everything from R&D activities to social inclusion at the top end, is a complex business.

The Commission recognises this, and has initiated a wide variety of IS and ICT related programmes to help foster the best environment to encourage the development of particular aspects of the IS. We must also recognise that we are in the midst of the process, and it is only relatively recently that co-ordinated steps have been taken to try to objectively understand Europe’s collective position, and its strengths and weaknesses. Programmes have taken various forms. They range from the creation of specific Research and Technological Development (RTD) Framework Programmes designed to stimulate technical communications development and the training of ICT specialists¹⁰, to the creation of more market oriented programmes such as INFO2000,

⁷ Prepared by the Council and European Commission for the Feira European Council, 19-20 June 2000

⁸ prepared by the European Commission for the European Council in Nice, 7-8 December 2000

⁹ Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions COM (2002) 263 final

¹⁰ However, as a sign of the growing ‘maturity’ of the topic, the focus of the 5th Framework RTD Programme has shifted towards market exploitation of European RTD at the local and regional levels, rather than on research and technological development per se.

which was designed to act as a catalyst for the development of a European multimedia industry.

Both these types of programme are aimed primarily at the ‘supply side’ – the creators of knowledge and knowledge based networks and infrastructures. However, the European Commission has also been addressing the ‘demand side’ in its programmes. It has achieved this through a series of targeted programmes to encourage the systematic development of regional strategies and actions to stimulate demand and thus take advantage of the opportunities offered by the IS. Most of these are pilot projects funded under Article 6 (ESF)/ Article 10 (ERDF) including the Inter-Regional Information Society Initiative (IRISI) and the Regional Information Society Initiative (RISI) which ran from 1995 to 1998, and a successor to RISI called RISI+ which is now in its concluding phase. As such, although strategic in approach, they have been mostly small scale. It is now clear that the SF have a major role to play in the IRISI and RISI regions in enabling their priorities for action to be implemented in such a way that critical mass of demand and positive socio-economic impacts are achieved. SF investments are necessary to catalyse latent demand, which although potentially huge, is still currently relatively weak in some regions. They are also required to encourage the sustainable supply of IS related content and services to meet the growing and future demand, particularly in regions with a more developed IS strategy.

In more general terms, there has been a rapid recent growth of Business-to-Business and Business-to-Consumer services in the EU. While the EU as a whole lags well behind the US in IS applications, some areas are catching up rapidly. The market conditions in developed regions have matured and many IS activities have become profitable and competition has developed accordingly. However, this situation does not apply in the Less Favoured Regions, where the market still often does not justify intervention, except for very basic services, such as connectivity and Internet access¹¹.

All these factors mean that the IS is now placed higher than ever on the EU agenda and developing the digital economy and its applications are seen as critical to competitiveness and job protection/creation. At the same time the Commission is acutely aware of social issues - especially improving cohesion and reducing the ‘digital divide’ – and maintaining equality of opportunity as far as possible.

2.2.1 Mainstreaming in the 1994-99 programme

Regional development policies for 2000-2006 have been steered towards the IS, based on a recognition that a region's competitiveness lies in its potential for innovation and that the new technologies can be an instrument for social integration - or a source of exclusion if not available to all. The IS is now regarded as an integral part of the development programmes being implemented under the SF.

The two underlying principles of this integration have been described as:

¹¹ An interesting example of this can be found in the INFO2000 programme, where LFR's were offered funding at a higher level than other regions. However, this did not appear to increase the number of applications for funding, or the number of successful awards.

- The reorientation of structural assistance to the new technologies (human resources, innovation, etc.) rather than infrastructure, to help create the "digital reflex" that is sometimes lacking in Europe;
- The consistent and structured integration of the IS into the priority objectives of regional policy.

In addition there has been a shift from financing actions under innovative programmes to their inclusion in the mainstream funding processes – a move from 'pilot actions' to 'standard procedures'.

2.2.2 Regional Information Society Initiatives

The Regional Information Society Initiative (RISI), was an innovative action (under the European Regional Development Fund: Article 10 and the European Social Fund: Article 6) designed to investigate how to maximise the benefits which the IS can provide. The initiative was based in part on the success of the pre-pilot Inter-Regional Information Society Initiative (IRISI) which had been launched in late-1994.

In broad terms, it was concerned with not only with the infrastructure and technologies but also with the human and societal impacts. The RISI project commenced in late 1995 and by mid-1996 a total of 23 eligible (less favoured) regions had been selected. The individual regional initiatives (22 finally agreed contracts) commenced later that year or early in 1997. The eligibility criteria for both RISI and IRISI required that regions should have Less Favoured Region (LFR) status in recognition of their need to catch up in terms of economic performance and social cohesion with their more prosperous counterparts and that the IS might provide a paradigm for such accelerated development. In part, however, it was also recognised that such regions needed to develop their strategic planning competence and development capability and the RISI project provided a vehicle to assist this.

The 22 RISI regions used a common methodology, based on public-private partnership and commitment of key regional actors, to develop strategies and action plans for the promotion of the IS within Less Favoured Regions. Support structures (in the form of Accompanying Measures) were also put in place by the European Commission to assist the RISI process.

In addition to the IS Initiatives, there were a number of other related or overlapping actions such as the Regional Innovation and Technology Transfer Strategies and Infrastructures (RITTS) programme which was launched by the Commission in 1994, under the Innovation programme run by DG XIII-D (now Enterprise DG) in Luxembourg.

This was 'designed for policy makers and regional development organisations to help them in assessing the technology transfer support infrastructure in their region, developing strategies and implementing actions aimed at improving the quality of linkages between the services provided by the regional funding agencies on the one hand and the needs of regional firms on the other (especially SMEs)'. A related programme was run by DG XVI (now known as Regional Policy DG), RIS (Regional Innovation Strategies) with the main differences between the two programmes being the focus of RIS on ERDF assisted areas and the stronger requirements for developing

partnership of key actors and on the embedding of results in the SF planning frameworks. Aspects of both of the process and the content of these programmes have a relevance to IS issues.

2.2.3 The e-Europe Initiatives and Lisbon conclusions

The last decade has seen a multitude of rapid technological advances that have turned the global communication concepts of the past on their heads and have been termed the Information Age Revolution.

Within this framework of radical change, towards the end of 1999 the European Union recognised the need to realign itself as a digitally cohesive unit. Three fundamental objectives were set out as the part of an *e*-Europe initiative:

- To bring every citizen, home, school and business/administration, into the digital age and online.
- To create a digitally literate Europe, supported by an entrepreneurial culture ready to finance and develop new ideas.
- To ensure the whole process is socially inclusive, to build consumer trust and to strengthen social cohesion.

However, the practical application of such an ambitious series of goals needed to be supported on all levels – political, economical and social – so as to establish the project as a ‘real’ opportunity for integration and advancement.

The core factors affecting Europe were a variety of unresolved issues:

- Expensive, insecure and slow internet access,
- A mostly digitally illiterate population,
- A lack of dynamism and service-orientated culture
- An under-active public sector.

The first e-Europe initiative was launched to build on the already established policy framework and to prioritise the realignment of key factors in the European digital environment.

A strategic plan was set out in ten different areas:

- European youth into the digital age
- Cheaper Internet access
- Accelerating E-commerce
- Fast Internet for researchers and students
- Smart Cards for secure electronic access
- Risk capital for high-tech SMEs
- E-participation for the disabled
- Healthcare online
- Intelligent transport
- Government online

The general impression is that although important achievements were made as a result of *e-Europe 2002*, much had to be done in order to meet the Lisbon objectives. A new *e-Europe 2005 Action Plan* was thus drawn up.

Whereas the earlier *e-Europe 2002 Action Plan* focused on extending internet connectivity across Europe, *e-Europe 2005* concentrates on translating this into improved economic productivity and better, more accessible services for all European citizens, underpinned by secure, widely available broadband infrastructure.

The Action Plan has two groups of actions that reinforce each other. On the one hand services, applications and content, covering both online public services and e-business. On the other hand the underlying broadband infrastructure and security matters. It sets the following main goals for Europe by 2005:

- Modern online public services, particularly e-government, e-learning and e-health
- A dynamic e-business environment
- Widespread availability of broadband access at competitive prices
- A secure information infrastructure.

A number of initiatives will address both sides of 'demand and supply' equation simultaneously actions on e-government, e-health, e-learning and e-business, for example, will foster the development of new services, as will the targeted use of purchasing power by public authorities. On the supply side, meanwhile, a number of actions focusing on broadband and security, such as the establishment of a Cyber-Security Task Force and activities in Less Favoured Regions, should advance the roll-out of infrastructure.

The new action plan will continue the approach followed in *e-Europe 2002*: defining clear targets and benchmarking progress towards them, co-ordinating and accelerating the adoption of new legal measures, and re-orienting existing programmes towards these priorities. In addition, more emphasis has been placed on identifying and promoting good practices and on overall coordination. The action plan sets out how a wide range of EU programmes, such as the Structural Funds, the forthcoming e-Learning programme and eTEN, could be used to reach the objectives. From 2004 onwards the list of indicators will also serve as a basis for the Candidate Countries.

2.2.4 The forthcoming Mid-Term Review

The concept of the 'mid-term review' was introduced as part of the Reform of the Structural Funds 2000-2006. While an intermediate evaluation was part of the implementation of the previous generation funds, this generation has added the concept of a Performance Reserve, amounting to 4% of each national allocation which will be allocated to those programmes which, in the opinion of the Commission together with the Member States, are performing best. Each plan sets out the indicators against which it should be measured in this process. These reflect the effectiveness, management and financial implementation of the programmes and measure their mid-term results in relation to specific initial targets.

As part of this process, the programme managing authority must carry out a mid term evaluation, performed by an independent assessor, and forwarded to the Commission

no later than 31 December 2003, following discussion with the Monitoring Committee. As this review will look at the initial results of the operation, their consistency with the ex-ante evaluation and the relevance of the targets, it also offers the opportunity for some realignment of the actions.

2.2.5 The implication for Candidate Countries.

The EU Candidate Countries also have an action plan in the form of *e-Europe+*, which was launched by the Prime Ministers of the Candidate Countries at the Göteborg European Council.

The *e-Europe+* action plan aims to accelerate the reform and modernisation of the economies in the EU candidate countries, to encourage capacity and institution building, to improve overall competitiveness, and to enhance social cohesion. Good co-operation between the EU and candidate countries on IS issues is seen as supporting the EU enlargement process and making relevant information and knowledge available to citizens and the private sector.

A first progress report on the implementation of the *e-Europe +* action plan in the Candidate Countries was recently presented (Ljubljana, June 2002) based on data collected by the Candidate countries and written with the assistance of the European Commission. It shows the IS is already present in the EU Candidate Countries and that clear and tangible commitments to develop it further have been put in place.

National strategies and programmes have been developed in the Candidate Countries and implementation of relevant EU *acquis* (on telecommunications and e-commerce in particular) is well on track. In particular, telephone and mobile penetration rates are high, there are ambitious programmes for computers in schools, and significant progress has been made on e-Government. However, the cost of Internet access varies widely, PC costs are often prohibitive for home users, and little data is as yet available on areas such as e-commerce.

3 Aims and Objectives of THEMIS

This evaluation set out to answer three main questions:

- 1 What is the actual contribution and potential – as well as major constraints – of Structural Funds interventions in relation to the development of IS in Europe (in particular to the objectives and goals of the e-Europe initiative)?
- 2 What are the main objectives and strategies pursued in the field of Information Society in the context of Structural Fund (SF) interventions?
- 3 What is the extent of disparities between regions in the area of Information Society (IS), i.e. in terms of access to main information and communication technologies (ICT)?

The SF are one of the main financial instruments (accounting in total for perhaps 35% of total Community Funds) which are being used to attempt to achieve the significant targets now being set for the rapid deployment of the IS. Greece for instance has created a National Operational Programme (NOP) aiming at the enhancement of the IS, totally independent of other, more traditionally oriented Operational Programmes (OP). However, the EC needs to know more about how the SF have been used, and how they could best be used in future, to achieve maximum impact. This study looks specifically at the first question.

Previous evaluations, for example of IRISI and RISI, have focused primarily on strategy-building *processes* rather than on the effectiveness of regions in using their SF to achieve desired socio-economic *impacts*. The work currently ongoing to benchmark the IS via the e-Europe initiative is still in its formative stages. The whole methodological question of deriving robust benchmarks is complicated, but increasingly important so that policymakers, policy deliverers, citizens and businesses can all see the impacts and benefits of significant amounts of funding. Equally, it is just as important to identify problem areas, where progress has been less than hoped for, and to develop plans to overcome barriers or bottlenecks. The whole process is one of learning, of striving for continual improvement, rather than one of judgement or creating a 'blame' culture.

It is now clearly an opportune moment to try to unravel the complexities of using SF to drive forward the IS for economic and social change across Europe. Further urgency is given to this, as under the New Regulations 'decentralised programming' has been introduced (for the period 2000-06) which means that Member States largely determine the content and priorities for Single Programme Documents (SPD) and not the Commission.

In the Conference 'Information Society and Economic, Social and Territorial Cohesion', held in Lyon in December 2000, the Commission stressed that the IS is a valuable means for enhancing the competitiveness of regions and the creation and maintenance of stable jobs. Some preliminary investigative work suggested that the regions did not put much emphasis on this, as only 28 regions received formal support for IS initiatives - representing less than 2% of the support offered by the SF (of

which only 0.3% is for demand stimulation). Applications range from very successful, long term projects, like Futuroscope in France, to less ambitious, more mainstream standard applications. The situation is changing as some Member States have set themselves ambitious targets for 2000-2006. At the moment, in some regions there is also a higher demand for IS-related content and services than supply, leading to a new set of problems, such as digital inclusion and finding ways of sustaining developments.

In summary, the Commission wishes to obtain data relating to the existence of differences between regions in terms of access to ICT infrastructure, applications and services. It would like to understand how regions are using (or planning to use) SF to promote and implement IS strategies and actions, and the extent of current and future SF contributions to embedding the IS in regions. Equally importantly, the Commission would also like to identify the barriers and constraints to using SF as a tool to promote and enhance the widespread acceptance and use of the IS.

There were a number of key issues, which the Commission indicated that they would like to have investigated during this evaluation. These were:

- How much SF investment has been committed to expenditure on IS actions, particularly for the current programming period (2000-06)?
- What types of IS activity are expected to be funded through the SF?
- What differences are there between regions (in approaches to the use of the SF, the processes of determining priorities, and in IS priorities and outcomes)?
- How effective has this IS planning been? (which implies an assessment of the effectiveness of the process and management mechanisms used to create IS priorities and to implement them).
- The importance of the IS as a regional policy priority in each policy programming period, and the differences in the importance attached to IS between the programming periods.

To achieve these aims the study attempted to address the following key issues:

- The extent of disparities between regions in the area of IS, i.e. in terms of access to main ICT?
- The main objectives and strategies pursued in the field of IS in the context of SF interventions?
- The actual and planned contribution - as well as major constraints - of SF interventions in relation to the development of the IS in Europe (in particular to the objectives and goals of the e-Europe initiative)? How do regional IS plans map onto the e-Europe objectives?
- The linkages and the coherence of SF-supported actions in the area of IS with other relevant Community programmes and instruments.

The study concentrated on Objective 1 regions, but also looked at some Objective 2 regions for the current programming period (2000-06). We also reviewed the objectives of other Community Initiatives (such as INTERREG and URBAN), and looked at a small sample of projects to evaluate the extent to which such programmes are consistent with SF policies and actions as they relate to the IS.

4 Methodology

Based on the Tender Proposal, it was agreed that the work would consist of three, overlapping, phases involving

- A census, with appropriate analyses, of all Objective 1 and Objective 2 regions based on desk and documentary research to establish (mainly) quantitative socio-economic indicators along with basic information about the structure and content of Programming Documents from an Information Society IS perspective.
- A more in-depth investigation of a sample of Objective 1 and Objective 2 regions. This was to be based on more detailed reading of Programming Documents followed up by field research with key regional personnel, relevant Commission officials, and experts in the field of regional development and IS. This investigation would be supplemented by case studies of regions shown to be of special interest.
- Analysis and synthesis of the data collected and associated reporting.

4.1 Sampling Strategy

It was agreed that the evaluation would concentrate on Objective 1 regions, but would also look at some Objective 2 regions for the current programming period (2000-06). Accordingly a sampling strategy was used which led to the following approach for the desk research:

- Available OPs from all Objective 1 and Objective 2 regions were ‘Skim-read’ for the period 2000-06.
- A 50% sample of these Objective 1 regions, together with 25% of the Objective 2 regions then benefited from a more in-depth reading and analysis of OPs. This was conducted for the current programming period (2000-06). The task involved approximately 55 regions.
- However, in order to elicit some data about the 1994-99 programming period (for both Objective 1 and Objective 2 regions), specific questions were asked during the fieldwork phase (see below).

Skim-reading was defined as capturing a limited amount of key data, sufficient to help us answer some of the Commission’s key questions early on in the project in order to ‘steer’ later work. This included information to enable us to ‘classify’ a region, data on the regions’ IS Strategic Priorities and their planned expenditure on IS. This ‘census’ approach to Skim-reading all the available OPs meant that we could draw conclusions for the entire data set for the current programming period. By entering this data into spreadsheets we were able analyse it in several ways at a later date to pick out patterns and interesting ‘messages’.

However, this relatively swift reading of all SPDs was insufficient to obtain a really rich understanding and interpretation of regions’ approaches to all aspects of the IS

and to the processes involved in creating SPDs, OPs and PCs. Therefore we selected a subset of regions to investigate in more depth.

One of the major problems was to construct a definitive list of regions where the plans had been agreed, since there was sometimes a lag between approval and making them publicly available. Indeed in the case of the IS Programme for Spain (which is obviously significant for this study) the OP and PC were still not finally approved and we had to work from draft programmes.

Below we present a table of Objective 1 regions and the number of regions that were included in the sample.

Exhibit 1 Table of 2000-06 Objective 1 programmes

Objective 1 Region	Objective 1 in Transition Region	Number of Obj 1 Regions	Number of Obj 1 regions in Sample
Austria: Burgenland		1	0
Belgium	Hainaut	1	0
Finland: Eastern Finland, and Northern Finland		2	1
France: Guadeloupe, Martinique, French Guyana and Reunion	Corsica, Valenciennes, Douai & Avesnes	6	1
Germany: Brandenburg, Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt and Thuringia	East Berlin	6	1
Greece: East Macedonia, Thrace, Central Macedonia, West Macedonia, Thessaly, Epirus, Ionian Islands, western Greece, continental Greece, Peloponnese, Attica, North Aegean, South Aegean and Crete (in other words, the whole country)		13 plus the Greek Horizontal IS OP = 14	9
Italy: Campania, Apulia, Basilicata, Calabria, Sicily and Sardinia	Molise	7	3
Ireland: Border Midlands and Western	South and East	2	2
Netherlands	Flevoland	1	0
Portugal: North, Centre, Alentejo, Algarve, Azores and Madeira	Lisbon and the Tagus Valley	7 PLUS the national IS OP = 8	5
Spain: Galicia, Principado de Asturias, Castille-Leon, Castille-La Mancha, Extremadura, Valencia, Andalusia, Murcia, Ceuta, Melilla and the Canary Islands	Cantabria	11 PLUS the national IS OP = 12	4
Sweden: Norra Norrland, Södra Skogslän (multi-regional programmes)		2	1
United Kingdom: South Yorkshire, West Wales and the Valleys, Cornwall and Isles of Scilly and Merseyside	Northern Ireland, Highlands & Islands	6	3
Total regional SPDs plus the national horizontal programmes		68	30

Source: adapted from InfoRegio website

We identified approximately 93 available Objective 2 regional programmes, and we looked at 25% of these in depth, using the same type of sampling strategy as outlined for the previous table.

Exhibit 2 Table of Objective 2 programmes in 2000-06

Region	Number of Regions	Sample Size
Austria: Kärnten, Niederösterreich, Oberösterreich, Salzburg, Steiermark, Tirol, Wien	8	1
Belgium: Antwerp, Liege, Limburg, Namur, East Vlaanderen, Brussels, West Vlaanderen	7	1
Denmark: one national programme	1	1
Finland: Southern Finland, Western Finland, Åland Islands	3	1
France: Alsace, Aquitaine, Auvergne, Basse-Normandie, Bourgogne, Bretagne, Centre, Champagne-, Franche-Comté, Haute-, île-de-France, Languedoc-Roussillon, Limousin, Lorraine, Midi-Pyrénées, Nord - Pas-de-Calais, Picardie, Poitou-Charentes, Provence-Alpes-Côte d'Azur, Rhône-Alpes	21	5
Germany: Arnsberg, Berlin (partially), Braunschweig, Bremen, Düsseldorf, Gießen, Hamburg, Hannover, Karlsruhe, Kassel, Lüneburg, Mittelfranken, Münster, Niederbayern, Oberfranken, Oberpfalz, Rheinhessen-Pfalz, Saarland, Schleswig-Holstein, Stuttgart, Tübingen, Unterfranken, Weser-Ems	11	2
Italy: Abruzzo, Emilia-Romagna, Friuli-Venezia Giulia, Lazio, Liguria, Lombardia, Marche, Piemonte, Toscana, Trentino-Alto Adige, Umbria, Valle d'Aosta, Veneto	14	6
Luxembourg: Grand Duchy	1	0
Netherlands: South Netherlands, North Netherlands (plus 2 national programmes)	2	1
Spain: Aragón, Cataluña, Comunidad de Madrid, Comunidad Foral de Navarra, Islas Baleares, La Rioja, País Vasco	7	3
Sweden: Öarna region, Västra region, Norra region, Södra region	4	1
UK: East Midlands, East Wales, East of England, East of Scotland, London, North East of England, North West of England, South East England, South West of England, South of Scotland, West Midlands, Western Scotland, Yorkshire and the Humber	14	5
TOTALS:	93	23

Source: adapted from InfoRegio website

4.2 Methodology for reading and analysing documents

Reading the SPDs primarily provided qualitative information – contextual, and descriptive material. However, they also contained quantitative data – such as socio-economic or demographic statistics, targets, and finances. It was necessary to combine both in order to understand:

- **Baselining:** what is the current situation? Available in monetary figures and words, but numerical indications play a key role in illuminating the status quo and providing justification for the proposals and priorities.
- **Options and Measures:** what is a region going to do to improve its situation? Again available in figures and words, but with descriptive text providing the main element

- Management: how will a region monitor and measure its change in performance? Combining both figures and facts, but this time with numbers tending to come to the fore as a means of providing ‘evidence’ of measured improvements, although the accompanying text usually provides the enlightening ‘how’ to explain the performance figures.

4.2.1 Census Approach

To start with, a ‘census’ was conducted by skim-reading all available Objective 1 and Objective 2 regional OPs for 2000-06 to collect the same set of limited data for each region for analysis. The data the researchers were aiming to collect was as follows:

- Baseline Characteristics – regional characteristics – taken from the OP and supplemented where necessary from other sources such as Eurostat
- IS Priorities and Investments – taken from the OP
- IS Priorities – based on judgements made by the Consortium research team on the basis of their reading of OPs.

In terms of the quantitative data, this proved to be a complex issue since there is no consistency of the data that is provided across the programmes– not even a coherent set of key data. Data from Eurostat was therefore used to complete the picture, and also to compare with the data from the region for consistency etc. However, especially in the case of the Objective 2 regions, this was not always possible since some of the programme regions differ significantly from the statistical regions. Considerable efforts were made to compensate for this wherever possible.

Even in terms of the financial data, it was not always possible to identify IS related expenditure. Where a measure relates wholly or mainly to IS the whole expenditure has been taken. Where IS is a marginal element, specific figures for spend have not identified in the database. However, in many cases it was simply not possible to assess the extent of expenditure involved.

For these reasons, and in order to achieve a more representative set of data, input from the DG Regio database of indicators was used, looking at the following indicators:

- Workforce flexibility, innovation, information and communications (24)
- Telecommunications Infrastructure and IS (32) broken down into
 - Telecommunications Infrastructure and IS (not allocated)
 - Basic Infrastructure
 - ICT (including security and safe transmission...)
 - Services and applications for the citizen (health, admin and education)
 - Services and applications for SMEs (e-commerce and transactions, education...).

Unfortunately although this data is recorded by programme, analysis is only currently available at the national level. However, it does provide some input to the overall analysis. It should be noted that this data reflects the Member States’ estimate of intended expenditure, rather than any actual figures. In this aspect it does not differ from the figures that were extracted from the regional plans.

4.2.2 In-depth Analysis

Once the census exercise was complete, the OPs of a subset of these regions, again for the period 2000-06, were examined in more depth. This task represented 30 out of the 69 available Objective 1 plans in 2000-06, and 23 out of the 93 Objective 2 programmes during the same period. The exercise provided summary digests of each region, their approach to IS, their predicted expenditures etc, which was used during the synthesis and analysis stage.

Consideration of these data aimed to provide an analytical framework, a basis upon which to start to draw conclusions. In effect a mini-summary per SPD was developed. However, by their nature, these summaries also reflect the gaps in the basic documents.

4.3 Questionnaires and Case-Studies

Further questions and issues needed to be covered which were not addressed by the documents, and which needed to be explored further, using questionnaires and direct questions during fieldwork in selected regions. In addition, views and feedback from Commission representatives and a small number of experts in regional development and the IS were gathered.

The tasks were:

- To obtain a picture of the baseline situation in terms of ICT provision and access in each of the sampled regions at the beginning of the period 2000-06
- To ascertain how the current programming period differs to the previous one in respect to IS priorities and policy making processes, along with the identification cases of good practices, identification of barriers and constraints and how they were/might be resolved.
- To obtain more in-depth information from the sample case study regions on the reasons behind their choices for IS activities, priorities and budgetary allocations
- To obtain a view from the EC on regional use of SF for the IS (disparities, good practices, etc)
- To obtain a view from regional development experts in the IS on good practices, etc

With regional policy makers/senior administrators, the researchers sought to identify both hard 'baseline' data regarding the distribution of IS infrastructure, access levels and applications use, and 'softer' information about the process behind the creation of SPDs/OPs (with regard to the final choice of IS priorities and activities). For example, they attempted to find out more about the rationale underlying any changes in priorities between the programming periods.

The IS/regional development policy experts helped inform the work by providing good practice ideas and identifying exemplar regions based on their own experiences.

4.4 Regional Case Study and Baseline

Respondents in the sample of 53 Objective 1 and 2 regions questions were questioned on the following topics:

- Baseline information on ICT provision and access
- The IS Strategy Creation Process
- Evaluation and Monitoring Mechanisms
- Policy Shifts between 1994-99 and 2000-06

The purpose of this activity was to obtain information which is not contained (or is only partially covered) in the OPs or SPDs or PCs. This information aimed at providing the context in which decisions were made regarding the creation of the IS elements of the OP, as well as providing a picture of the realities of ICT access and provision in the region (baselining).

A questionnaire was sent by email to respondents identified by the Commission Desk Officers in all of the sample regions. This was followed up by telephone contact and further emails. However, the response rate remains disappointingly low. This may reflect a lack of importance attributed to the subject, or merely an overload of work on the part of the respondents (this view was given by several during the follow-up process). Even when responses were obtained, they were often incomplete and thus not very helpful.

4.5 Regional Taxonomy

The objective of creating regional taxonomies was to group regions according to different criteria, as a way of seeing whether regions with similar characteristics highlight the same IS policy priorities, or not. This was attempted in a number of ways but it was not entirely a straightforward exercise due, among other things, to data limitations. Further information can be found in the section on analysis, below.

4.6 IS Taxonomies

Following on from this analysis of regions, it was considered necessary to group the stated IS priorities of each region. As outlined in the proposal, and despite the fact it was introduced after many of the OPs were created, a decision was made to use the *e-Europe* communication as the basic reference framework. This is because it is an acknowledged flagship initiative of the Commission, it is being rolled out into the Member States and is being used in a variety of other consultancy and research projects.

4.7 Key Issues

Throughout the process, availability of data has been a major problem. This was the case at all levels from the actual availability of the plans themselves – reflecting delays in the negotiation process, among other factors – to the absence of consistent data within them once they were received. To some extent this is due to the fact that the IS as an issue has been evolving in parallel with the plans and their implementation, thus the project was attempting to look for answers to questions that were not initially posed, or in some cases even mooted.

An additional problem is that at regional level there is a lack of harmonised indicators. This problem is not specific to this study, indeed it has been recognised in the related area of regional innovation.

Finally, the level of response from the regions was very disappointing. It is not clear what has contributed to this, but during follow-up conversations it was expressed as a combination of overwork and “survey fatigue”, together with specific institutional problems in some regions.

5 Principal Findings

5.1 Census (Macro-Level) Analysis

5.1.1 Introduction

Our so-called ‘census’ comprises data on 150 regional programmes covering all Member States except Luxembourg as shown in Table 5.1 below.

**Exhibit 3 Structural Funds Programmes Investigated
by Member State (N = 150)**

Member State	Regional Programmes Investigated
Austria	9
Belgium	9
Denmark	1
Finland	1
France	25
Germany	15
Greece	13
Ireland	2
Italy	21
Luxembourg	0
Netherlands	4
Portugal	7
Spain	19
Sweden	6
UK	18
TOTAL	150

We have, in addition, looked at the three National Operational Programmes (NOPs) on the information society for Greece, Portugal and Spain and, where appropriate, these are included in the analysis.

In practice, we have had to work with fewer regional programmes (N) than the 150 stated above due to the limitations, anomalies and other problems associated with the data. Whilst over time, a relatively common approach to the structure and general contents of programme documents (Single Programme Document, Operational Programme and Programme Complement) appears to have evolved, there is no agreed systematic basis for the collection and reporting of regional data. Indeed, in too many circumstances, relevant data appears not to be available.

It has also been the case that a number of regional programmes had not, at the time the data were collected, published the detailed financial breakdown of their programmes that we needed for this analysis.

One of the reasons that we have often been working with fewer than 150 regional programmes is that, in a number of cases, we have been unable to adequately match the eligible territory with appropriate regional data sets. This is especially the case with Swedish programmes and highlights what may be a growing trend: namely, for national authorities to negotiate regional programmes with the Commission which are more tightly targeted on specific communities (what might be termed sub-territories of areas) needing development support, rather than more blanket prescriptions covering whole territories classified neatly as NUTS II or III. Such focussing of programmes on specific communities makes good sense in many instances but, in the absence of more refined and localised data collection systems, it makes evaluation and analysis significantly more difficult. Whilst national and regional authorities may be ready to define specific sub-territories as being in need of EU regional aid as measured by average income per capita, too often the other indicators necessary for robust and appropriate analysis and evaluation are not available – certainly not on a regular time series basis.

In terms of our brief, our main focus of attention and analysis has been on the use of Structural Funds in Objective 1 and 2 regions. The results of our analyses reported below are mostly confined these specific uses of the Structural Funds. We have not, as agreed, sought to incorporate Objective 3 ESF funding in our analyses since these are national programmes and probably cannot be meaningfully analysed *ex-ante* from a regional perspective.

Of course, our evaluation has also specifically targeted the use of the Structural Funds in supporting information society actions at the regional (or territorial level). Again, immense difficulties arise with the data – most of which have been derived from regional programme documents. Unfortunately, due to the nature of programming and programme documents, there are (as yet) no precise and unambiguous means to define and quantify regions' plans with respect to information society development. Whilst many programme documents make reference to information society development (or development of the knowledge-based economy through adoption of ICTs), often as a high overall priority, specification of specific related measures or sub-measures, and the accompanying financial details, is either absent or difficult to disentangle from other actions.

In some cases, the number of regional programmes included in our analyses falls to around 70. This arises, in part, because some regions do not see the information society as a priority in terms of the Structural Funds and therefore have not included *any* measures relating to it. In other instances, however, our reading of regional programme documents indicates that the information society is indeed a priority in a Structural Funds context but we have been unable to extract information relevant to our analysis. In some regions where the information society is clearly a priority – even a high priority – descriptions of specific information society measures can be found. This has allowed us to evaluate such programmes from a qualitative perspective but in a number of cases detailed financial allocations for these measures cannot be found. Either they are incorporated with other measures (e.g. in a priority

described as Regional Technology Development or Developing the Knowledge-Based Economy) and we cannot disentangle the financial allocations or (at the time) the financial allocations are not stated.

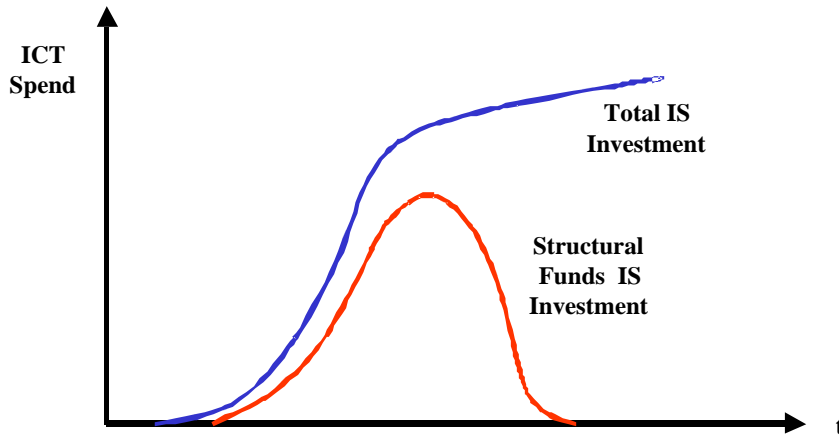
Despite the many difficulties and pitfalls associated with the data, we believe that the results derived provide some useful understandings hitherto unavailable. In general terms, we consider our conclusions to be *moderately* sound but a more robust results based on more rigorous scientific analysis will have to await the availability of much-improved data.

We emphasise that our study was not intended to evaluate the implementation, outcomes or impacts of these regional (and 3 national) programmes for 2000-06. Our analysis is based almost entirely on programme documents (mostly written, we imagine, in 1999). As such, our evaluation must be considered to be *ex ante* in nature and concerned mainly with the aspirations, intentions and plans of the regions.

Finally, in this introductory section, we draw the reader's attention to the fact that our work has been concerned to analyse and evaluate regional information society development within, and through, the 2000-06 Structural Funds Objective 1 and 2 Programmes. We emphasise that other financial instruments and, especially, market forces also have an impact on regional information society development and that, within the context of overall regional development, the Structural Funds may have only a small contribution to make. Where regions plan to commit only a small allocation of their Structural Funds (or none at all) to information society actions, it cannot be assumed that little or no information society development is taking place, is planned, or is expected. In fact, a low priority on information society development in Structural Funds programming *for this period* may, in some regions, result from a significant (and successful) investment in information society actions in the previous period. The Highlands & Islands region (of Scotland, UK), for example, is a case in point. Likewise, some regions may be able to use regional and national funds to finance their information society strategies and, in consequence, the information society may not appear as a priority (or, indeed, at all) in their Structural Funds Programming. In an ideal world, we would need to investigate all aspects of regional information society developed, including all other private and public investment. Unfortunately, within the scale and scope of our brief and in light of data availability at the regional level, we have not been able to do this.

Our analysis is, therefore, by way of being a snapshot of intentions and plans – no more. The information available to us to make comparisons between programme periods (1994-99 and 2000-06) has been exceedingly limited. From our reading and understanding of the 2000-06 regional programme documents, and from our knowledge derived from other sources, we know that some regions are now more advanced (or more mature) in terms of information society development. *A priori*, we would expect the information society to be a lower priority in the programming of such regions than would be the case in a less advanced or mature region. In this sense, the Structural Funds are often viewed as having a kick-start and catalytic effect, pump-priming information society development in conditions of weak demand so as to create the conditions in which market forces are encouraged and enabled to take over. (see Fig. 5.1 below).

Exhibit 4: The Catalytic Effect of the Structural Funds on Overall IS Investment



5.1.2 Some General Characteristics of the ‘Regions’ Investigated

The break-down by Objective status of the regional programmes investigated was as follows:

Exhibit 5 : Programmes Investigated by Objective Status (N = 150)

Objective Status	Full	In transition	TOTAL
Obj 1	55	8	63
Obj 2	50	37	93
TOTAL	105	45	150

These regions vary considerably in size and, for the purpose of subsequent analysis, we have classified them as small, medium or large in terms of population as indicated in Exhibit 7 below.

Exhibit 6: Size of Regions according to Population (N = 150)

Regions	N
Small (< 1 mill.)	55
Medium (1 mil. - 2 Mill.)	39
Large (> 2 Mill.)	56
TOTAL	150

We have also classified the regions for which we have the relevant data according to a number of other economic, demographic and ‘geographic’ criteria as shown in Exhibits 8 to 10 below. Note that GDP data were not available in the case of some regional programmes. Also note that for the Objective 2 regions the data refers to the whole region, not just the eligible areas.

Exhibit 7: Regional GDP per capita (N = 138)

Regional GDP per capita	Obj 1	Obj 2	TOTAL
Low (< 0.5SD below Av)	34	3	37
Medium (Av - 0.5SD < GDP p.c. < Av + 0.5SD)	22	18	40
High (> Av + 0.5SD)	3	58	61
TOTAL	59	79	138

Unemployment in the census regions for which we have data (N = 153) varies considerably but was reported, on average, as 10.48% (Standard Deviation: SD = 6.12) – ranging from a reported 1.8% (EuroStat) in Centro Region, Portugal, to 33.1% in the La Réunion (French Overseas Territory). In addition to collecting data regarding unemployment levels, we have also endeavoured to acquire information about recent unemployment trends (over the previous 5 years) but this is less easily obtained. The table below shows a cross-tabulation of unemployment levels (High, Medium, Low¹²) by unemployment trends (Increasing, Static, Decreasing).

Exhibit 8: Regions (N = 119) classified by Unemployment Level and Unemployment Change by Objective Status

Unemployment Change	Unemployment Level (%)									ALL
	HIGH			MEDIUM			LOW			
	Obj 1	Obj 2	TOTAL	Obj 1	Obj 2	TOTAL	Obj 1	Obj 2	TOTAL	
Increasing	8	0	8	11	15	26	8	19	27	61
Static	2	0	2	1	4	5	1	2	3	10
Decreasing	13	2	15	3	15	18	5	10	15	48
TOTAL	23	2	25	15	34	49	14	31	45	119

We have also classified the regions as being located in the North and South of Europe¹³ since there exist hypotheses that regions in the South, mainly in the Cohesion Countries, are less mature in their approached to information society development than those in the North. The breakdown of the census regions was as follows.

¹² Low is taken as less than 6%, medium is 6.1-12% and high is greater than 12%

¹³ Taken on a geographical basis by country with the exception of France.

Exhibit 9: Regions (N = 150) classified by Objective Status and Location

Location	Obj 1	Obj 2	TOTAL
South	44	29	73
North	19	58	77
TOTAL	63	87	150

We have sought to develop a measure that indicates the extent to which a region is peripheral or in which a significant proportion of the population is isolated and has to travel considerable distances to the main population centres. Few of the Programming Documents (just 24) indicate the percentage of the regional population living in rural areas but we have been more successful in establishing data on population density that is reported in the majority of Programming Documents. This may serve as an adequate proxy for peripherality and isolation.

However, we have looked also at a regional peripherality index¹⁴ and an accessibility index¹⁵ from other sources and we have used the latter, derived from the European Spatial Development Perspective (ESDP) report, for some of the analysis to be reported in a later section.

5.1.3 The Scale of Information Society Investment

Amongst the regional programmes and the 3 National Information Society Programmes (of Greece, Portugal and Spain), we have identified a total of 798 Programme priorities of which 130 are devoted, or contain significant measures and sub-measures relating, to the Information Society and the development or deployment of Information and Communications Technologies (ICTs) and for which the relevant financial information is available. We broadly define a priority or measure as containing information society or ICT-related content where it involves the use or development of, training in, or access to ICTs, including telecommunications infrastructure. Our definition accords closely with (and indeed incorporates) the 11 measures identified in the e-Europe 2002 Action Plan.

For the regional and national programmes taken together, information society actions account for an estimated expenditure of EUR 15.849 billion. This is made up of approximately EUR 11.5 billion in the ROPs and EUR 4.4 billion in the 3 NOPs. For the regional and national programmes analysed, total Structural Funds expenditure (EU, Other Public and Private) amounts to EUR 216,044 billion. **This suggests that 7.36% of Structural Funds Programme expenditure is devoted to the Information Society.** The full data are presented in Exhibit 10 below.

¹⁴ Carsten Schürmann and Ahmed Talaat, 'Towards a European Peripherality Index', Final Report to DG Regio, IRPUD, November 2000

¹⁵ The European Spatial Development Perspective (ESDP), The Committee on Spatial Development, Potsdam, May 1999.

Exhibit 10: Overall Financing of Information Society development

	N	Spend on ICT				TOTAL SPEND
		EU	Public	Private	Total	
Obj 1 South	44	1,683.4 48.2%	1,158.2 33.2%	651.2 18.6%	3,795.7	83,899.4
Obj 1 North	19	836.7 40.0%	610.5 29.2%	646.3 30.9%	2,093.4	62,049.7
Obj 1 TOTAL	63	2,520.1 45.1%	1,768.7 31.7%	1,297.5 23.2%	5,889.0	145,949.1
Obj 2 South	29	354.9 32.2%	350.1 31.7%	398.4 36.1%	1,174.5	24,271.8
Obj 2 North	64	752.3 36.7%	886.0 43.3%	408.7 20.0%	4,397.6	41,390.2
Obj 2 TOTAL	93	1,107.1 35.1%	1,236.1 39.2%	807.1 25.6%	5,572.2	65,662.1
ALL	156	3,627.3 41.5%	3,004.8 34.4%	2,104.6 24.1%	11,461.2	211,611.2
Greece		1,702.2	567.4	569.5	2,839.1	2,839.1
Portugal		316.2	309.0		625.2	625.2
Spain		446.6	522.8		969.3	969.3
TOTAL	159	6,092.3 46.3%	4,404.0 33.4%	2,674.1 20.3%	15,894.9 7.36%	216,044.8

It suggests that the Commission's efforts to mainstream the Information Society from the mid- to late-1990s onwards have been hugely successful. It certainly exceeds by a considerable margin the estimate of between 1 and 2% of Structural Funds expenditure for the previous programming period quoted by Commissioner Barnier at the Lyon Conference (December 2000). It is more in line with, but still exceeds, the estimate of approximately 5% cited more recently for Objective 1 regions¹⁶. We have replicated the analysis only for the regions where we have identified an IS spend with the following results:

¹⁶ COM 2001 378 (final) The Results of the Programming for the Structural Funds for 2000-06, (Objective 1 regions).

Exhibit 11 Total co-financed expenditure on IS in regions with identified IS expenditure

Only for Region with +ve identified IS Spend						
	N	Spend on ICT				TOTAL SPEND
		EU	Public	Private	Total	
Obj 1 South	25	1,683.4 48.2%	1,158.2 33.2%	651.2 18.6%	3,795.7	43,386.1
Obj 1 North	15	836.7 40.0%	610.5 29.2%	646.3 30.9%	2,093.4	43,224.9
Obj 1 TOTAL	40	2,520.1 45.1%	1,768.7 31.7%	1,297.5 23.2%	5,889.0	86,611.1
Obj 2 South	12	354.9 32.2%	350.1 31.7%	398.4 36.1%	1,174.5	12,354.0
Obj 2 North	23	752.3 36.7%	886.0 43.3%	408.7 20.0%	4,397.6	21,605.8
Obj 2 TOTAL	35	1,107.1 35.1%	1,236.1 39.2%	807.1 25.6%	5,572.2	33,959.8
ALL	75	3,627.3 41.5%	3,004.8 34.4%	2,104.6 24.1%	11,461.2	120,570.9
Greece		1,702.2	567.4	569.5	2,839.1	2,839.1
Portugal		316.2	309.0		625.2	625.2
Spain		446.6	522.8		969.3	969.3
TOTAL	159	6,092.3 46.3%	4,404.0 33.4%	2,674.1 20.3%	15,894.9 12.72%	125,004.6

This gives a higher figure of 12.72%, although it is important to stress the need for caution about our estimate. We have been careful only to record financial values for sub-measures, measures or priorities where these are mainly for Information Society development. Unfortunately, programme documents often fail to provide detail below the measure level. Even at this level, measures that appear to relate primarily to ICT development may mask other activities and their related expenditures.

Conversely, as indicated above, there are almost certainly ICT-related expenditures contained within priorities and measures of which we are unaware. Moreover, other priorities and measures may contribute indirectly to information society and ICT development. As will be reported later, a number of regions have introduced the information society as a horizontal or cross-cutting theme in their programming. In such cases, in particular, there may well be ICT-related expenditures that we have been unable to detect from looking at Programme Documents (SPDs, OPs, or PCs). Such factors may, to some degree, suggest that our figure of 7.36% is an underestimate.

Finally we have attempted to estimate the proportion of the Structural Funds expenditure on IS measures as follows:

Exhibit 12: Structural Funds expenditure on IS measures

	EU ICT Spend	TOTAL EU SPEND
Obj 1 South	1,683.4 11.0%	15,290.4
Obj 1 North	836.7 3.2%	26,081.7
Obj 1 TOTAL	2,520.1 6.1%	41,372.1
Obj 2 South	354.9 9.0%	3,933.0
Obj 2 North	752.3 10.3%	7,313.4
Obj 2 TOTAL	1,107.1 9.8%	11,246.4
ALL	3,627.3 6.9%	52,618.5

It should be noted that this does not include the 3 national programmes, which are by definition almost 100% depending on how the technical assistance element is treated. However we estimate that Total their EU ICT Spend is equal to EUR 6,092.3 million Compared to a total EU Programme Spend of EUR 57,052.2 giving a proportion of EU Contribution dedicated to ICT of 10.7%.

In general terms, we report planned Programme expenditure for all regions whose documents we have read as follows and from which we have been able to extract the relevant data.

Exhibit 13: Programme Finance (EUR billion) for Census Regions (N = 149)

	N	EU	Other Public	Private	TOTAL
Objective 1	61	72.481 48.3%	47.228 31.4%	30.468 20.3%	150.177
Objective 2	88	26.246 33.0%	30.264 38.0%	23.088 29.0%	79.598
TOTAL	149	98.727 43.0%	77.492 33.7%	53.557 23.3%	229.775

The total expenditure in Exhibit 12 (EUR 229,775 million) is different to that quoted previously (EUR 216,044 million). The latter figure of EUR 216,044 refers to the aggregate expenditure by priority where we have an adequate breakdown of financial data at priority and measure level. The former figure given above is taken from aggregate tables of programme finances for which we have more data.

5.1.4 The Nature of Information Society Investment vis-à-vis eEurope

In this section we describe the approach that we took in seeking to assess the relative priority that regions placed in their programming on the various domains of information society and related ICT-based activity.

For the regions where the appropriate financial data is available to us at the priority and/or measure level, we have coded information society and ICT-related activities according to the eEurope classifications¹⁷.

Exhibit 14: eEurope Priority Classification

Code	Classification
1	Cheaper, Faster Internet
2	Faster Internet for Researchers
3	Secure networks and smart cards
4	Youth into the digital age
5	Working in the KBE and ICT skills
6	Participation and access for all in the KBE
7	Accelerating e-commerce
8	Government on line
9	e-health/telemedicine
10	European digital content
11	Intelligent transport

The 130 priorities or measures that we have identified as being committed wholly, or in large part, to information society development have been classified according to the eEurope priorities shown above, and the distribution of these measures (in percentages) is as shown below.

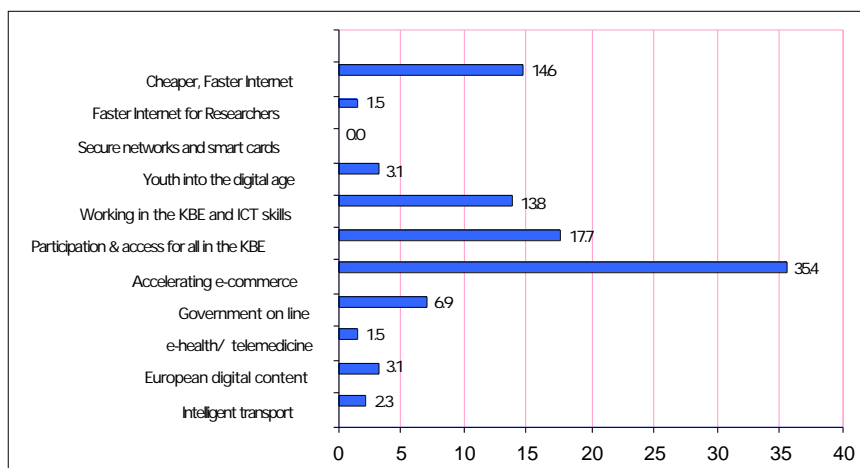
Exhibit 15: Distribution of eEurope Priorities/Measures

eEurope Priorities	Freq (%)
Intelligent transport	2.3
European digital content	3.1
e-health/telemedicine	1.5
Government on line	6.9
Accelerating e-commerce	35.4
Participation & access for all in the KBE	17.7
Working in the KBE and ICT skills	13.8
Youth into the digital age	3.1
Secure networks and smart cards	0.0
Faster Internet for Researchers	1.5
Cheaper, Faster Internet	14.6

¹⁷ eEurope Action Plan, 2000-02.

These priorities or measures and these are illustrated in percentage terms (to reflect their relative importance) in the chart below.

Exhibit 16: Relative Importance of eEurope Priorities in Regional Programmes (% of Measure Frequency)

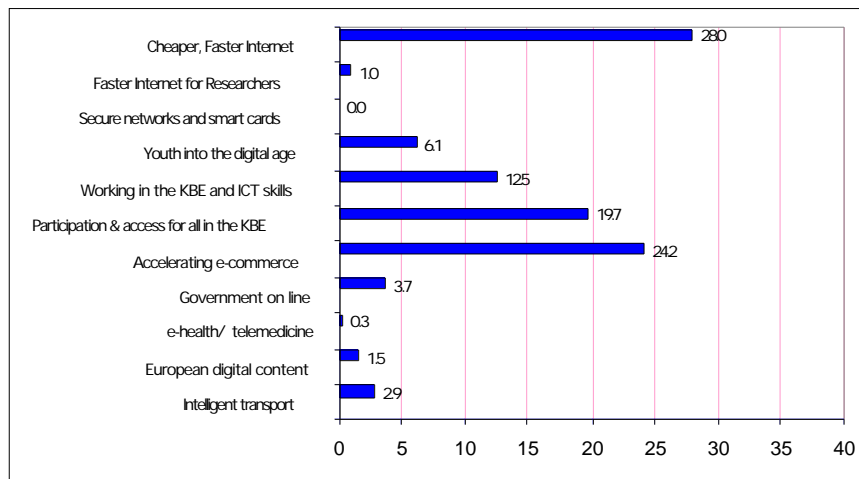


Of course, priorities and measures vary considerably in size and financial value and, for this reason, we have also weighted the frequency of these priorities/measures by the investment value of the priority or measure. The results are shown in Exhibits 16 and 17 below.

Exhibit 17: eEurope Priorities weighted by Planned ICT Spend

eEurope Priorities	Freq by Value (%)
Intelligent transport	2.9
European digital content	1.5
e-health/telemedicine	0.3
Government on line	3.7
Accelerating e-commerce	24.2
Participation & access for all in the KBE	19.7
Working in the KBE and ICT skills	12.5
Youth into the digital age	6.1
Secure networks and smart cards	0.0
Faster Internet for Researchers	1.0
Cheaper, Faster Internet	28.0

Exhibit 18: eEurope Priorities weighted by Planned ICT Spend



A number of points emerge from this analysis when taking all regions together.

- The regions included in our analyses have investment plans that cover most (8) of the eEurope action lines. Only in the cases of “Faster Internet for Researchers”, “eHealth-Telemedicine” and “Intelligent Transport” is there negligible or non-existent priority.
- Regional planning and programming might have been conditioned by the e-Europe Action Plan and its associated priorities. However, in practice, we think this unlikely since most programming will have taken place in 1999 and 2000 before publication of the e-Europe Initiative (December 2000) and Action Plan (March 2001).
- Infrastructure development (“Cheaper, Faster Internet) seems to remain a priority for a substantial number of regions. Regional programme documents rarely use this phrase but talk instead, typically, about infrastructure and telecommunications network development. That this should be so high a priority runs somewhat counter with the guidelines regarding Structural Funds use in the current programme period that state that infrastructure development is not a priority. However, many of the regions in question are peripherally located and/or contain large rural hinterlands where population densities are low. This being the case, it would seem that many of them are seeking to use their Structural Funds to remedy deficient infrastructure and to avoid worsening the digital divide, due, no doubt, to a combination of under-investment in the past, their peripheral locations, and the need to become and remain competitive. In addition, however, we suggest that ICT infrastructure investment is more tangible than many other types and may consequently be of greater political appeal.
- It is clear that “Working in the KBE and ICT Skills” and “Participation and Access for all in the KBE” are the main priorities in the programmes we have investigated. They suggest that concerns about the digital divide and human resource development for the New Economy are main concerns for the programmes that have been analysed here.
- Less surprisingly, support for e-Commerce development is seen to be of some importance. Given the nature and pace of information society development since the mid-1990s, we can detect certain trends in the pattern of development. Certainly, at the time that most of the 2000-06 programmes were in preparation, e-Commerce was seen generally as of importance to increasing the

competitiveness of enterprises and to achieving enhanced regional competitiveness.

- Likewise, towards the end of the 1990's, there was a growing body of opinion, including that of most Member State governments, that modernisation of public services was a growing priority and we see at that time the start of a large number of e-Government initiatives. There is some evidence here to suggest that e-Government development at the local and regional levels has become an increasing programme priority.
- There are some investment plans regarding "Faster Internet for Researchers" and for "Youth into the Digital Age" but the relatively low priority accorded to these is probably explained by the fact that, in many Member States, these will be seen as responsibilities of the national authorities.

eEurope Priorities by Objective Status

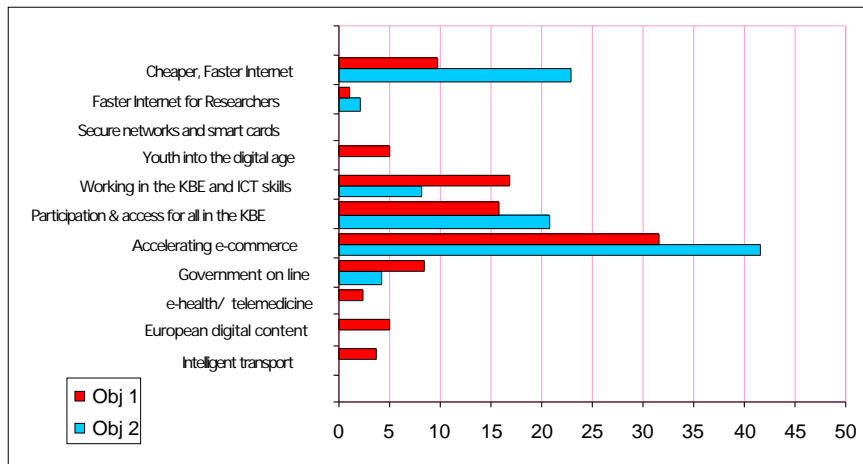
We had anticipated that programming priorities would differ between Objective 1 and Objective 2 regions on the grounds that the needs of Objective 1 regions, as less mature in information society terms, are different to those of Objective 2 regions.

Exhibit 19: Relative Importance of eEurope Priorities by Objective

	Obj 1 (%)	Obj 2 (%)
Intelligent transport	3.7	0.0
European digital content	4.9	0.0
e-health/telemedicine	2.4	0.0
Government on line	8.5	4.2
Accelerating e-commerce	31.7	41.7
Participation & access for all in the KBE	15.9	20.8
Working in the KBE and ICT skills	17.1	8.3
Youth into the digital age	4.9	0.0
Secure networks and smart cards	0.0	0.0
Faster Internet for Researchers	1.2	2.1
Cheaper, Faster Internet	9.8	22.9

The same data are represented graphically in the chart below.

Exhibit 20: Relative Importance of eEurope Priorities by Objective Status

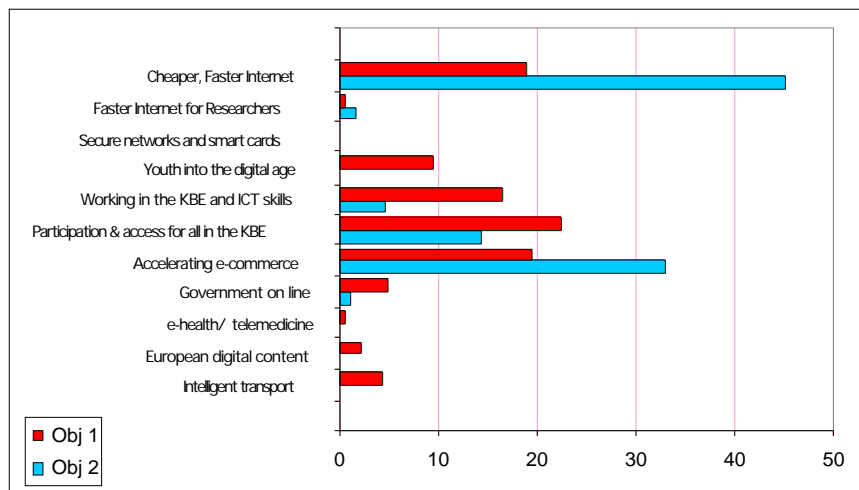


Again, when we look at the regions' eEurope priorities, weighted by planned ICT Spend, separately for Objective 1 and Objective 2 regions, certain differences of approach are discernible.

Exhibit 21: Relative Importance of eEurope Priorities by Objective Status, weighted by Planned ICT Spend

	Obj 1 (%)	Obj 2 (%)
Intelligent transport	4.5	0.0
European digital content	2.3	0.0
e-health/telemedicine	0.5	0.0
Government on line	5.1	1.1
Accelerating e-commerce	19.7	32.8
Participation & access for all in the KBE	22.5	14.5
Working in the KBE and ICT skills	16.6	4.8
Youth into the digital age	9.4	0.0
Secure networks and smart cards	0.0	0.0
Faster Internet for Researchers	0.6	1.7
Cheaper, Faster Internet	18.9	45.1

Exhibit 22: Relative Importance of eEurope Priorities by Objective Status, weighted by Planned ICT Spend



In the Objective 2 regions, a higher emphasis is placed on infrastructure development (“Cheaper, Faster Internet, 23% of Planned ICT investment), “Participation and access for all in the KBE” (21%) and “Accelerating e-Commerce” (42%) than is the case in the Objective 1 regions. On the other hand, Objective 1 regions that might be considered in many cases less “information society mature” than their Objective 2 counterparts, place a higher relative priority on “Working in the KBE and ICT Skills” (17%) and “Government on line” (8.5%). The Objective 1 regions, unlike the Objective 2 regions, have some plans (albeit modest) to invest in “Youth into the Digital Age” (5%), “e-Health/Tele-Medicine” (2.4%), “European Digital Context” (5%) and “Intelligent Transport” (3.7%). In our view, such results are not unexpected since we suspect that Objective 1 regions are inclined to favour public services and actions needed to re-train their workforces. By contrast, Objective 2 regions favour support for enterprise and enhancement of their ICT infrastructure, both in pursuit of increased regional competitiveness.

We conclude that in broad terms the regional programmes are acting (or planning to act) in ways that will support the priorities of the eEurope 2002 Action Plan. Whether this was by design we rather doubt since most programmes will have been developed before the Action Plan was endorsed. Not surprisingly, some of the eEurope priorities do not feature strongly in the regional programmes and perhaps we should be a little surprised at the extent to which the regions appear to be planning enhancement of ICT infrastructures.

Alternative Approaches to Classification of Information Society Actions

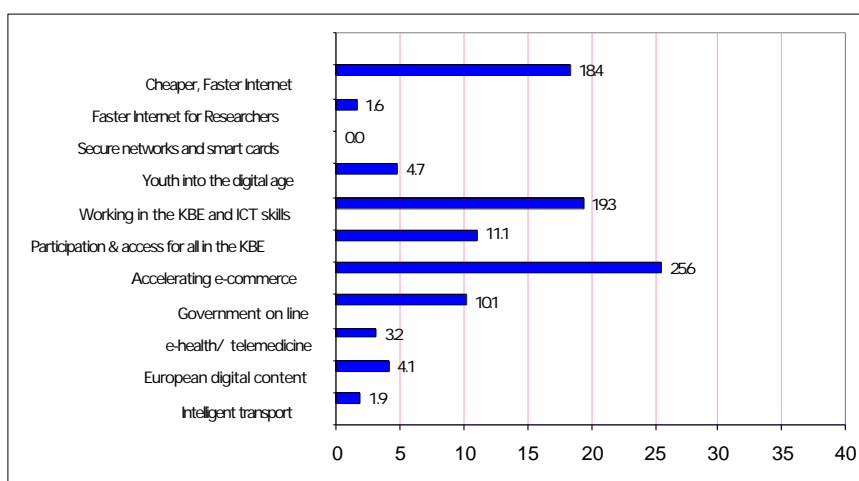
In the foregoing analyses we have, in each case, classified the priority or measure to a single eEurope code. In many instances, if not most, regional programming is not this simple. In practice, priorities and measures entail a range of actions and their effects fall within different domains. In order to gain a clearer picture, we have used some alternative classification schemes that are described below.

The first of these alternatives to classification entailed scoring each relevant measures according to any number of the eEurope codes that, in our interpretation, were

applicable (rather than uniquely to a single code as before). The results of this approach are shown in the Exhibits below.

Exhibit 23: Frequency of eEurope Priorities using a Multiple Classification Scheme

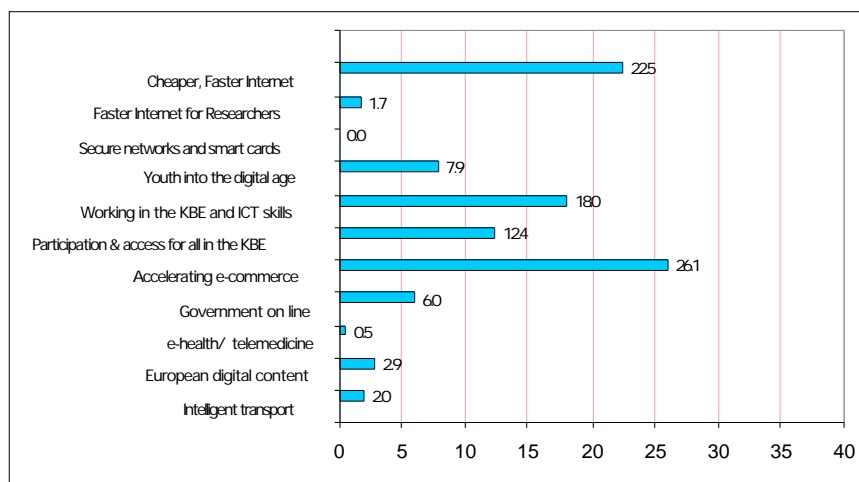
	Freq (%)
Intelligent transport	1.9
European digital content	4.1
e-health/telemedicine	3.2
Government on line	10.1
Accelerating e-commerce	25.6
Participation & access for all in the KBE	11.1
Working in the KBE and ICT skills	19.3
Youth into the digital age	4.7
Secure networks and smart cards	0.0
Faster Internet for Researchers	1.6
Cheaper, Faster Internet	18.4
	0.0



As before, variations in the value of priority and measures should be taken into account and we have, therefore, also computed weighted frequencies using the value of the priority. The results of these computations are displayed below.

Exhibit 24: Frequency of eEurope Priorities using a Multiple Classification Scheme, weighted by ICT Spend

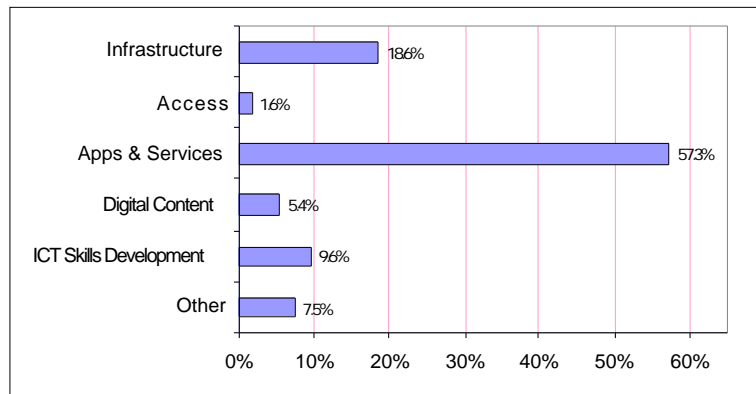
	Freq by Value (%)
Intelligent transport	2.0
European digital content	2.9
e-health/telemedicine	0.5
Government on line	6.0
Accelerating e-commerce	26.1
Participation & access for all in the KBE	12.4
Working in the KBE and ICT skills	18.0
Youth into the digital age	7.9
Secure networks and smart cards	0.0
Faster Internet for Researchers	1.7
Cheaper, Faster Internet	22.5



Bearing in mind that, in most regions, programming for 2000-06 will have been largely completed before the announcement and endorsement of the eEurope 2002 Action Plan, we are inclined to think that regional programmers would have been more likely to design their information society actions from a different perspective. There is a growing body of opinion that balanced information society depends on five main planks: infrastructure, access, applications and services, digital content development, and ICT skills development. We have used such a classification – using multiple scoring again – and the results are shown in Exhibit 24. For sake of completeness, we have added a catch-all ‘Other’ category that includes stimulation of demand for ICTs through awareness raising, demonstration, training and so on.

Exhibit 25: A 5-Way Classification Scheme for Information Society Actions weighted by Planned ICT Spend

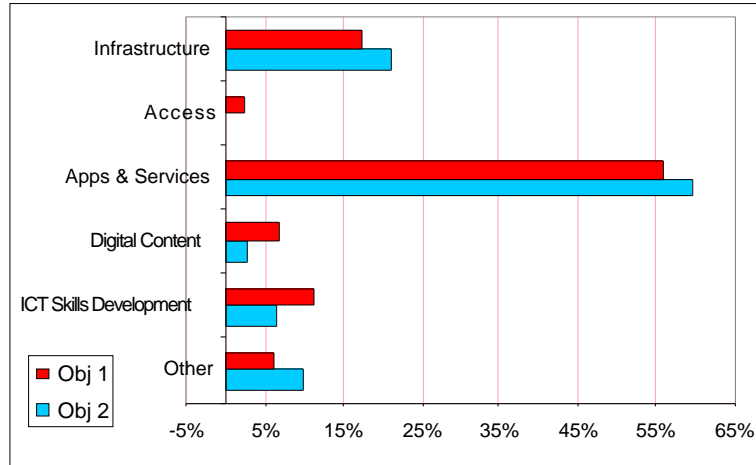
	Freq by Value (%)
Infrastructure	18.6%
Access	1.6%
Apps & Services	57.3%
Digital Content	5.4%
ICT Skills Development	9.6%
Other	7.5%



We have replicated this analysis separately for Objective 1 and Objective 2 regions. The results are shown below.

Exhibit 26: A 5-Way Classification Scheme for Information Society Actions weighted by Planned ICT Spend, and by Objective Status

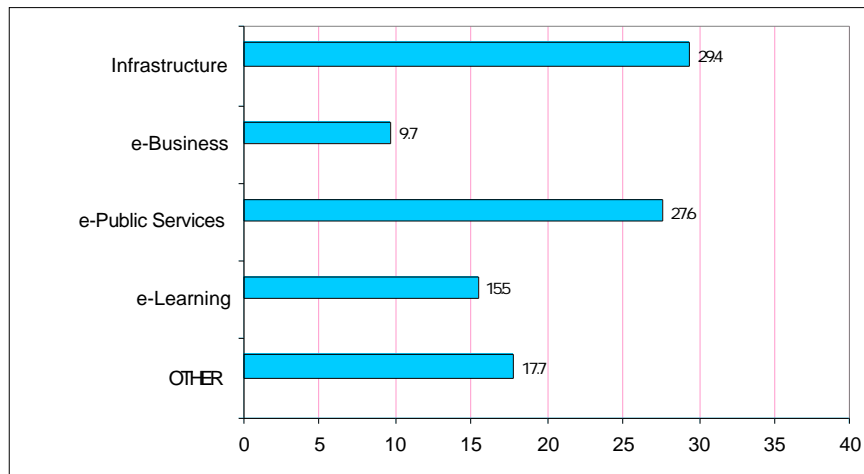
	Freq by Value (%)	
	Obj 1	Obj 2
Infrastructure	17.2%	21.2%
Access	2.4%	0.0%
Apps & Services	56.1%	59.6%
Digital Content	6.9%	2.7%
ICT Skills Development	11.2%	6.6%
Other	6.2%	9.9%



Finally, at the request of the Commission, we carried out a classification of the 130 information society priorities/measures using a four-way classification system comprising: infrastructure, e-Business, e-Government (to include e-Services) and e-Learning. We have added a fifth category of ‘Other’ to accommodate actions that do not fit the four classes. Again, multiple scores were used where a priority or measure spanned two or more of the codes. Yet again, we have weighted the code frequencies by the value of the relevant total planned spend for the priority/measure. The results are displayed in Exhibit 26 below.

Exhibit 27 : A 4-way Classification of Proposed Information Society Actions, weighted by Planned ICT Spend

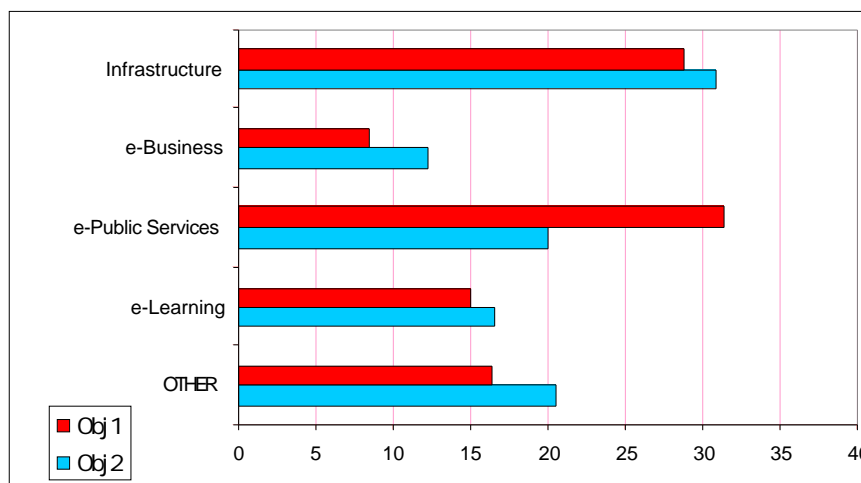
	Freq by Value (%)
Infrastructure	29.4
e-Business	9.7
e-Public Services	27.6
e-Learning	15.5
OTHER	17.7



Finally, once again, we have analysed the data using this 4-way classification according to the Objective status of the regions. The results are shown in Exhibit 27 below.

Exhibit 28 : A 4-way Classification of Proposed Information Society Actions, weighted by Planned ICT Spend, by Objective Status

	Freq by Value (%)	
	Obj 1	Obj 2
Infrastructure	28.8	30.7
e-Business	8.5	12.3
e-Public Services	31.3	20.0
e-Learning	15.0	16.5
OTHER	16.4	20.4



Whilst these alternative approaches demonstrate some variability to the relative emphases planned by regions with regard to information society actions, they broadly point in the same directions. The last analysis seems to suggest that regions' plans for information society development are quite closely in accord with the new priorities contained in the eEurope 2005 Action Plan.

On the basis of the evidence available to us, whose results have been presented here, we consider that regional information plans are generally likely to assist in the achievement of eEurope Goals (both 2002 and 2005). Rectifying infrastructure deficiencies remains an important issue in many regions whilst applications such as e-Business, e-Government and e-Learning are clearly also important. At the same time, there are quite a number of regions that attach some importance on the need to stimulate demand. Quite widely, regions perceive the need for ICT skills development (not the same as e-Learning in our view and not to be confused with it) to help people to live and work in the Knowledge-Based Economy. Other areas of development are not overlooked with a number of initiatives (albeit small in scale) in the fields of e-Health, Intelligent Transport and Digital Content Development.

There are some differences in priorities between Objective 1 and Objective 2 regions although these vary according to the classification scheme used. Nonetheless, we could conclude that Objective 2 regions – perhaps having already stronger development and markets – appear to emphasise infrastructure development and e-Business more than do the Objective 1 regions. Conversely, Objective 1 regions appear to favour e-Public services, access and participation, and working in the Knowledge-Based Economy relative to Objective 2 regions.

eEurope Priorities by Member State

We have also broken down by Member State the data on planned ICT Spend. In one case (Belgium), we consider the measure information and related financial data to be inadequate to make useful judgements. In two other cases (Ireland and Sweden), we have found only 2 ICT-related measures in the regional programmes we looked at and so these results are inevitably unreliable. The analysis is shown for a selection of Member States in Exhibit 28 and in table form (Exhibit 29) overleaf.

Exhibit 29: eEurope Measures, weighted by ICT Spend, by Member State

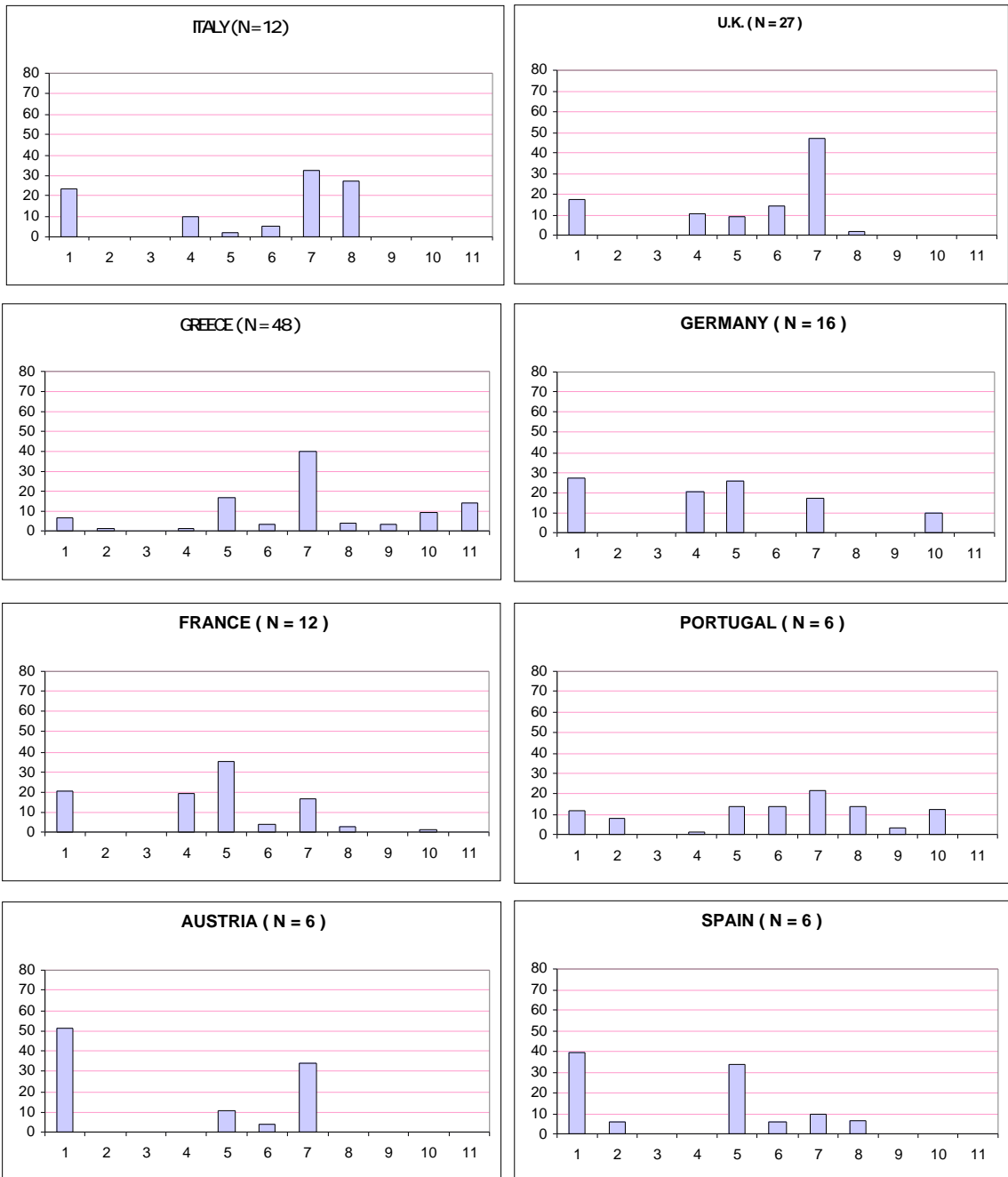


Exhibit 30: eEurope Measures, weighted by ICT Spend, by Member State

eEurope Priority	CODE	Austria	Belgium	France	Finland	Germany	Cyprus	Ireland	Italy	Portugal	Spain	Sweden	UK
		6	2	12	1	16	48	2	12	6	6	2	27
Cheaper, Faster Internet	1	51.2	45.9	20.8		26.8	7.0	16.7	23.4	11.8	39.5	71.9	17.3
Faster Internet for Researchers	2						1.3	16.7		7.7	5.6		
Secure networks and smart cards	3												
Youth into the digital age	4			19.3		20.2	1.4		9.6	1.5			10.6
Working in the KBE and ICT skills	5	10.3	45.9	35.1	33.3	25.7	16.6	16.7	1.8	13.9	33.6		9.1
Participation & access for all in the KBE	6	4.2	4.1	4.2	33.3	0.1	3.0	16.7	5.1	13.9	5.6	28.1	13.9
Accelerating e-commerce	7	34.3	4.1	16.9	33.3	16.9	40.3	16.7	32.5	21.6	9.6		47.0
Government on line	8			2.5		0.1	4.3	16.7	27.5	13.9	6.1		2.1
e-health/telemedicine	9						3.1			3.5			
European digital content	10			1.4		10.2	9.2			12.3			
Intelligent transport	11						13.8						

The table above and the preceding thumbnail graphs indicate that groups of regions according to their Member States reflect different priorities. In fact, from these charts, we see some quite dramatic differences of approach between the (aggregated) regional programming priorities of different member states.

We have highlighted those eEurope priorities where the proposed ICT investment is quite prominent (> 25%) and we comment on some of these cases below.

- Austria (51%), Belgium (46%), Germany (27%), Spain (40%) and Sweden (72%) each plan to commit more than 25% of their ICT Structural Funds investment on infrastructure-related development (“Cheaper, Faster Internet”). In the Austrian case, the measures in question derive from two regional programmes only – the region of Burgenland (Objective 1) and Voralberg (Objective 2). The case of Spain is dominated by the NOP proposal to upgrade the inadequate rural telecommunications network (TRAC). In Sweden, the data are drawn from two regional programmes only, Sodra Skogslansregionen and Norra Norrland (both Objective 1 but which may not be typical). However, these are quite remote and sparsely populated regions whose economic future could be argued to depend on better infrastructure. We note, also, that investment in infrastructure development is quite high in Italy (23%) but the result is dominated by the plans of one region only - Campania (Objective 1). However, this is described as “*supporting enterprise’s investments on ICT infrastructures*” and it is arguable if this means Cheaper, Faster Internet in the eEurope sense.
- In no Member State does there appear to be high importance attached to “Faster Internet for Researchers”.
- As we might anticipate, since they tend to be seen primarily as national/European responsibilities, none of the regional programmes propose investment in “Secure Networks and Smart Cards”.
- In all Member States, regional programmes place a low investment priority on “Youth into the Digital Age” since, usually, support for education systems is mainly a national competence.

- Again, regional programmes in Greece (24%), France (35%), Finland (33%), Germany (26%) and Spain (33%) prioritise “Participation and access for all in the KBE” which reflects, we think, a more widespread concern about the digital divide and overcoming alienation and disaffection in disadvantaged communities and amongst disadvantaged groups.
- “Accelerating e-Commerce” is a high priority for regional programmes in five Member States: Austria (34%), France (33%), Greece (40%), Italy (32%) and highest in the UK (47%).
- “Government on line” appears on this evidence to be a major priority in the Italian programmes. This conclusion is drawn primarily from the planned ICT Spend of the Objective 1 regions of Calabria, Campania, Molise, Sicily and Sardinia and the Objective 2 region of Apulia. The measures in question are typically of the kind “Promotion and development of IS through innovation and improvement of the Public administration's efficiency”.
- E-Health/Tele-Medicine are not seen as major priorities in the context of regional Structural Funds programmes as yet. Again, however, we might anticipate that national OPs for the information society (especially in Greece, for example) and nationally-funded initiatives will be proactive in developing applications in this domain.
- In the regional programmes of only four Member States did we find evidence of planned investment in “European Digital Content” – and in none of these is it seen as a major priority. In many instances in these countries (France, Germany, Greece and Portugal) there would appear to be a particular emphasis on the development of digital content to promote tourism products.

Inspection of Exhibit 29 above suggests that regional programmes in each member state tend to focus on two or three main priorities. Whilst we suspect there is some evidence for this, such a conclusion may be misleading based on the evidence presented here. This evidence needs to be treated with some caution for two reasons: first, the regional programmes of Greece, Portugal and Spain are likely to be ‘shaped’ by the existence of large national OPs for the information society and as such cannot be compared directly with the regional programmes of other Member States; and, second, we have aggregated the regional data and there are almost certainly differing priorities from one region to another.

In general terms, we find little evidence in this data to suggest that any obvious programming patterns (in terms of priorities) exist amongst groups of Member States (e.g. Cohesion Countries versus the rest).

5.1.5 Potential Determinants of Information Society Investment

As part of our analysis, we have investigated a number of factors in the hope of identifying some of the determinants of the levels of investment in, and thus priority attached to, information society development at the regional level through the Structural Funds.

We began by looking to see if ICT investment levels differed significantly between Objective 1 and Objective 2 regions. In doing this, we tried to estimate planned ICT Spend both on a per capita basis and, in some cases, also as a percentage of regional GDP (where the data was available). However, the Structural Funds form a very small proportion of regions' GDP and, of this, that spent on ICT-related actions is very much smaller still. Accordingly, data on planned ICT Spend as a percentage of GDP yield very small numbers that are difficult to interpret. Accordingly, we have restricted ourselves to reporting our estimates of planned ICT Spend on a per capita basis in this section.

Of the regions investigated on our 'census' (150), we were unable in approximately half of the regions either (a) to find evidence of information society plans or (b) financial data relating to such plans. Where we have the relevant data (N = 70), the ICT Spend per capita for each region is as reported in Exhibit 30 below. In fact, the average ICT Spend per capita in Objective 1 regions (90 Euro) is almost 60% more than it is in Objective 2 regions (57 Euro).

Exhibit 31: ICT Spend per capita (Euro) by Objective Status

ICT Spend p.c.	Obj 1	Obj 2	TOTAL
N	39	31	70
Mean	89.5	56.7	75.0
SD	84.5	79.4	83.3

Mean = Arithmetic mean of ICT spend per capita
SD = Standard Deviation

This is in line with our expectations since, other things being equal, Structural Funds allocations are greater for Objective 1 regions than for Objective 2 regions.

Exhibit 31 (overleaf) shown our estimates of planned ICT Spend per capita for each of the 70 regions in the census whose programming documents indicate information society actions and that provide the necessary financial information. The data are shown in rank order and Objective 1 regions have been highlighted in blue. On this basis, we would be inclined to predict that an Objective 1 region will spend more per capita on ICT than an Objective 2 region.

Exhibit 32: ICT Spend per capita (Euro) by Region (Objective 1 regions shaded blue)

Region	ICT Spend p.c. (EUR)	Region	ICT Spend p.c. (EUR)
Border Midland and Western Region	357.8	Continental Greece	42.8
La Rioja	357.8	Algarve	42.5
South Yorkshire	308.3	Brandenburg	40.2
South Aegean	269.4	Gibraltar	37.0
Ionian Islands	241.4	Cornwall & Isles of Scilly	32.4
Baleares Islands	238.2	North West England	32.0
North Aegean	203.0	Sachsen	31.9
Vorarlberg	169.2	Centro	29.9
Western Greece	151.1	Midi-Pyrenees	27.9
Languedoc-Roussillon	149.4	Salzburg	27.2
Wallonie Urban	127.1	Steiermark	24.5
Crete	126.5	Yorkshire and the Humber	23.4
Central Macedonia	122.0	Nordrhein-Westphalen	23.3
Northern Ireland	118.9	East Midlands	22.9
Norra Norrland	118.8	Campania	22.4
Açores	117.9	Attica	22.2
Southern & Eastern Region	109.7	West Midlands	21.8
Sodra Skogslansregionen	106.0	Abruzzo	19.6
East of Scotland	102.3	Auvergne	18.0
Highlands & Islands	98.4	Oberösterreich	17.7
Western Macedonia	94.7	Réunion	16.4
Epirus	83.4	Martinique	13.8
Apulia	79.1	Norte	13.3
Wales	79.0	Niederösterreich	11.6
Limousin	74.6	Southern Scotland	9.2
Thessaly	69.2	Schleswig Holstein	7.5
Eastern Finland	68.2	Rheinland-Pfalz	7.4
Molise	65.8	Ile de France	6.9
Eastern Macedonia and Thrace	63.4	Mecklenburg-Vorpommern	6.8
Kärnten	57.3	Lisboa e Vale do Tejo	6.8
Sardinia	57.3	Marche	5.3
Bremen	55.8	Hainault	2.7
Burgenland	47.9	Liguria	2.2
Alentejo	44.5	Hessen	0.8
Peloponese	43.1	Niedersachsen	0.6

We have also investigated differences in information society investment plans in relation to population as an indicator of the size of a region, as shown in Exhibit 32, on the basis of the contention that smaller regions might find it easier to focus its attention and priorities on a single issue such as the information society. For this purpose, we have classified regions with a population less than 1 million as Small,

regions with a population of at least 1 million but less than 2 million as Medium, and the remainder (> 2 million) as Large.

Exhibit 33: Estimated Planned ICT Spend per capita (Euro) by Population Size.

ICT Spend p.c.	Small	Medium	Large	TOTAL
N	32	16	22	70
Mean	110.5	60.9	33.5	75.0
SD	93.3	80.6	37.9	83.3

In fact, this analysis does suggest quite strongly that small (and therefore more coherent) regions are, on average, likely to commit more to ICT developments per capita than do larger regions. In a small region, regional information society initiatives find it easier to mobilise the key actors and, furthermore, decision makers may feel in such cases that they really can ‘make a difference’ and have an impact provided they invest at an appropriate level. In larger regions, maintaining a coherent, strategic and region-wide approach to information society development is very much more difficult and decision makers may, in consequence, be more cautious about the levels of investment they are prepared to commit to information society actions.

There has been some concern, highlighted by recent eEurope benchmarking reports, that the Cohesion Countries are lagging behind in information society development in comparison with the rest of Europe. More specifically, this relates to regions in the (Mediterranean) South of Europe that are located in Greece, Italy, Spain, Portugal (the Cohesion Countries) and the southern regions of France. Necessarily, benchmarking reports provide indicators of results derived from earlier action or inaction. Nonetheless, by looking at location as a possible determinant of information society levels may offer some useful insights. The data are summarised in Exhibit 33 below.

Exhibit 34: Estimated Planned ICT Spend per capita (Euro) by Location

ICT Spend p.c.	South	North	TOTAL
N	35	35	70
Mean	84.9	65.0	75.0
SD	86.0	80.5	83.3

We see some evidence in these results to suggest that regions in the South appear to have planned to commit more in per capita terms to information society investment than regions in the North. This may suggest that recent benchmarking reports and the eEurope 2002 Action Plan (and especially the preparation for and negotiations in the run-up to the Lisbon Summit) may have prompted regional programmers to commit more to information society actions than otherwise might have been the case. However, we should exercise caution before accepting such a conclusion. Such

differences (over 30% more Planned ICT Spend per capita on Objective 1 regions than in Objective 2) can probably be accounted for simply by the predominance of Objective 1 regions in the South and the fact that Objective 1 funding levels are higher. On the other hand, Structural Funds' management in these Member States is especially centrally driven and it may well be the case that central governments and their national ministries have indeed prioritised (or influenced the prioritisation of) information society actions in the ROPs. In Greece, the large national information society programme (OPIS) dominates and dwarfs the ROPs and, in any event, the regions have been strongly encouraged to promote information society measures in the ROPs – not least through the offer of co-finance from OPIS. The Portuguese case is rather different in so far as regions do not exist administratively. Regional OPs have been created, but largely influenced by central government despite the (presumed) creation of Regional Monitoring Committees. In terms of information society actions in the NOP and ROPs combined, about 30% of Structural Funds is 'devolved' to the regional level. This still leaves a strong national influence – a fact very clear from the 'boiler-plate' nature of the ROPs.

We anticipated, a priori, that more peripheral regions might view the information society as an important means of overcoming the disadvantages of geography that they face. In a similar fashion, we hypothesised that regions with a significant population located in rural areas would likewise, perhaps, seek to emphasise the acceleration of the information society as a means of overcoming the isolation faced by communities in sparsely populated territories. We first looked at population density (000's per km²) and the results are shown in Exhibit 34 below.

Exhibit 35: estimated Planned ICT Spend per capita (Euro) by Population Density

ICT Spend p.c.	Low (< 75)	Medium (75 - 400)	High (> 400)	TOTAL
N	22	23	7	52
Mean	105.2	63.0	67.9	81.5
SD	102.6	72.9	107.3	91.7

Whilst the differences in planned ICT Spend per capita between regions of high and medium population density are not especially marked, the table shows clearly that regions of low population density plan, or feel the need, to commit the significantly higher levels of investment in ICTs. In reality, of course, densely populated areas are both easier and cheaper to serve in ICT terms than sparsely populated areas. In particular, we would expect the private telecommunications operators to be active in the more populated areas thereby obviating the need for publicly financed interventions. By contrast, in rural and peripheral areas, where the market operates less well (if at all) in most cases, the need for public intervention – including through the use of Structural Funds, subject to respecting rules for State Aid and Competition Policy – can generally be justified.

Given the emphasis in the eEurope 2005 Action Plan on broadband development and widespread access to it, we suggest that there may be a growing pressure for regions

with more sparsely populated territories to use Structural Funds for telecommunications infrastructure investment.

We also constructed a measure of peripherality for regions based on the European Spatial Development Perspective (ESDP) Report. This gives a classification of NUTS III regions based on transport accessibility. The index we have constructed ranges from 1 to 6 to reflect the 6 classes used by the ESDP. Where necessary, we have exercised judgement in determining the index for particular regions – particularly where we are dealing with NUTS II regions. In our analysis, we have classified the peripherality of regions as being High (Index < 2.5), Medium (2.5 ≤ Index < 4.5), or Low (Index ≥ 4.5). The results of our analysis are shown in Exhibit 35 below.

Exhibit 36: Estimated Planned ICT Spend per capita (Euro) by Peripherality

ICT Spend p.c.	Index of Peripherality			TOTAL
	High (< 2.5)	Medium (2.5 - 4.5)	Low (> 4.5)	
N	28	30	12	70
Mean	86.6	73.2	52.0	75.0
SD	67.1	95.0	88.0	83.3

In terms of planned ICT Spend per capita, we see a distinct difference between regions of high, medium and low peripherality. As expected, we see higher planned ICT Spend in High peripheral regions compared to Medium peripheral regions, and also higher planned ICT Spend in Medium peripheral regions compared to Low peripheral regions. Whilst we argued that highly peripheral regions might see ICT investment as a higher priority than others, some caution is needed in reaching this conclusion since the costs of provision in such regions are higher than elsewhere.

A further factor that might explain differences in ICT Spend by regions is the extent of unemployment. Whilst we do not necessarily suggest a causal link between unemployment and ICT Spend (per capita) – since other factors could explain it – we are inclined to think that regions with high unemployment may place a high priority on ICT training and other related soft measures to tackle a skills gap, to make their region more attractive for inward investment, and to better prepare citizens for the New Economy. Again, we created a simple 3-way classification of unemployment levels: High (> 10%), Medium (less than 10% but 5% or more), and Low (< 5%). The results are shown below.

Exhibit 37: Estimated Planned ICT Spend per capita (Euro) by Unemployment (%)

ICT Spend p.c.	High (< 2.5)	Medium (2.5 - 4.5)	Low (> 4.5)	TOTAL
	N	22	33	
Mean	72.3	79.6	68.5	75.0
SD	62.5	102.1	66.2	83.3

In fact, the data do not support the notion that unemployment could be a determinant of planned ICT spending levels in the Structural Funds. This, at first, seems strange since the regions with the highest unemployment tends to be regions with Objective 1 status and therefore with more funding available. On the other hand, our analysis excludes consideration of the Objective 3 (ESF) provision managed at Member State level in support of the National Action Plans for Employment. This may contribute to a lower than expected use of ERDF/ESF provision for information society development in the ROPs of regions with higher levels of unemployment.

We have looked, too, at the relationship between ICT Spend and Education Attainment. For the latter we have chosen as an indicator the percentage of the regional population who attain graduate status (ISCED = 7). Again, we have created a 3-way classification for this variable: High (> 25%), Medium (17% - 25%), and Low (< 17%).

Exhibit 38: Estimated Planned ICT Spend per capita by Higher Education Attainment

ICT Spend p.c.		% with Educational Attainment (ISCED = 7)			
		Low (< 17%)	Medium (17 - 25%)	High (> 25%)	TOTAL
Objective 1	N	21	7	7	35
	Mean	87.4	102.3	97.5	92.4
	SD	73.5	103.6	118.9	87.2
Objective 2	N	10	12	8	30
	Mean	41.4	90.1	28.2	57.3
	SD	50.8	111.2	31.9	80.6
TOTAL	N	31	19	15	65
	Mean	72.6	94.6	60.5	76.2
	SD	69.7	105.7	88.6	85.4

In this instance, no systematic pattern is apparent to us except to note that, in both Objective 1 and 2 regions, it is in those regions with Medium high education attainment that ICT spending tends to be the highest and the figures for planned ICT Spend per capita appear to be generally lower in regions with the highest percentage in terms of educational attainment. However, the standard deviations are relatively large and we doubt there is any consistent significant difference between the means except in the case of the Medium group in Objective 2 regions. We draw attention to the fact that our estimate of planned ICT Spend per capita is below the average in Objective 1 regions with Low education attainment. Whilst our classification of education attainment is undoubtedly crude and we should not place too much dependence on these results, we think this result is matter for concern since ICTs may well offer a more efficient and cost-effective means to deliver education and to raise participation and attainment levels. The result might be explained by arguing that such regions may be more peripherally located with an economy dependent more than average on agriculture and tourism. In such cases, the region may lack the planning

capacity and leadership resources to understand and accept the potential of the information society for regional development.

We have investigated also the possibility of a relationship between IS Spend and participation in the IRISI or RISI¹⁸ initiatives. In total, 28 regions took part on these initiatives but we have the relevant financial data for slightly less than half of them. These regions began and mostly completed their initiatives during the last Programme period (1994-99) and we were interested to observe whether such past actions in any way distinguished these regions from others in the current Programming period. The results are presented below.

Exhibit 39: Estimated Planned ICT Spend per capita by IRISI/RISI Participation

	RISI Regions	Non-RISI Regions	TOTAL
N	13	57	70
Mean	48.0	81.1	75.0
SD	32.8	90.0	83.3

Finally, we have attempted some multi-variate analyses. The results of these are generally disappointing but we report them here briefly for completeness. We consider, however, that with more time further careful analysis might reveal some more systematic patterns in the census data.

We attempted two forms of multi-variate analysis: single equation regression models and cluster analysis.

Three linear regression models were estimated, as follows.

1. Dependent variable: Planned IS Spend per capita
 Independent variables: GDP per capita
 Unemployment rate
 Overall activity rate
 Service sector activity rate
 Population density (1000 persons per square km)
 Education level (% receiving tertiary education)
 Objective status
 Use of vertical programming approach
 Use of horizontal programming approach

¹⁸ IRISI (The Inter-Regional Information Society Initiative), 1994-97 involved 6 regions, which followed a common methodology in formulating a regional information society strategy and action. In 1996, 22 further regions formed the RISI (Regional Information Society Initiative) project and followed a similar methodology.

2. Dependent variable: Planned IS Spend as percentage of GDP
Independent variables: As above

3. Dependent variable: Total IS Spend
Independent variables: GDP
Population
Unemployment rate etc., as above

Each of the above was carried out using:

- a) all cases with no missing data
- b) a subset of (a) above comprising those cases with non-zero Planned IS Spend.

None of the regression models produced highly significant results. However, there are indications of some explanatory power in the form of probability (p) values associated with some variables being less than 0.05, indicating a less than 5% probability of a chance association. Of the equations estimated, the ‘best’ fit is obtained from 1(b) – with Planned IS Spend per capita as the dependent variable, and including only cases with non-zero IS Spend. Results were as follows.

Exhibit 40: Results of a Single Equation Regression Model to Explain Estimated Planned ICT Spend per capita

<i>Regression Statistics</i>	
Multiple R	0.481
R Square	0.232
Adjusted R Square	0.099
Standard Error	0.240
Observations	62.000

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	1.740	0.615	2.830	0.007
GDP/ POP	0.000	0.000	-1.831	0.073
Unemployment (From Eurostat)	-0.031	0.014	-2.192	0.033
Activity Rate overall (Eurostat)	-0.019	0.008	-2.394	0.020
Activity rate service sector (Eurostat)	-0.004	0.004	-0.925	0.359
Population Density (Persons per Km2) (Eurostat)	0.000	0.000	0.490	0.626
Educational Attainment (% with tertiary education)	0.017	0.006	2.964	0.005
Objective Status	0.096	0.101	0.948	0.348
Programming Approach Vertical	-0.081	0.074	-1.098	0.277
Programming Approach Horizontal	0.089	0.073	1.223	0.227

A further regression using only the four independent variables with significant t- (or p-) values produced the following:

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	1.3358	0.5587	2.3908	0.0201
Unemployment	-0.0292	0.0131	-2.2177	0.0305
Activity Rate overall	-0.0183	0.0079	-2.3175	0.0240
Education	0.0103	0.0051	2.0283	0.0471

We can draw only the most tentative conclusions from these analysis but they seem to suggest (*weakly*) that higher per-capita IS expenditure is positively associated with higher educational attainment, and inversely with unemployment and activity rates. Further analyses and consideration of other models would be required to draw more definitive conclusions.

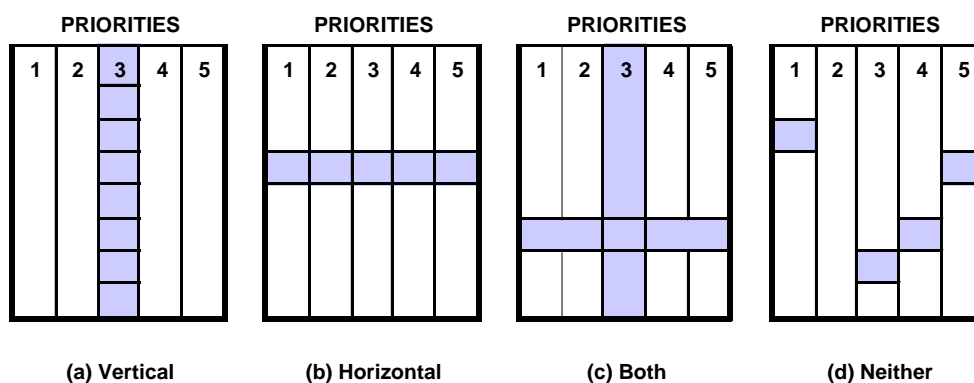
We carried out some preliminary cluster analyses of the complete data set and whilst the formation of three and four clusters did emerge, the pattern underlying these clusters is, as yet unclear. Further analysis and interpretation would be required before useful results (if they exist) could be found and reported.

That the results reported in this section should be less clear-cut than might have been hoped for should, perhaps, not be surprising. The oft-cited diversity of regions should be reflected in their programming and this may, in part, explain why relatively few systematic patterns have been found in the data. Moreover, the information society is in itself a complex and quite ubiquitous phenomenon and we should not expect 'neat' results to emerge from such analyses – at least not without significant further effort.

5.1.6 The Structure of Programmes

A number of approaches have been taken by regions in seeking to shape their way to the Information Society. In our reading of programming documents, we have sought to identify the ways in which regions have, if at all, incorporated the information society into their Structural Funds planning. Broadly speaking, we can classify these into 4 groups as shown in Fig. 5.4 below.

Exhibit 41: Classification of Approaches to Programming the Information Society into Structural Funds Documents.



We thus have

- those which treat the IS as one priority amongst many (e.g. Valencia). We classify these as **vertical** approaches.
- those that have dedicated a single National Operating Programme (such as Portugal, Spain and Greece) or cross cutting Theme to IS actions (e.g. South Yorkshire). We classify these as **horizontal** approaches.
- those which combine the above (such as Wales), so there is **both** a cross cutting IS theme as well as the IS being part (or all) of vertical priority.
- those which treat the IS as a separate element in some/all of the priorities might be described as fragmented in their approach, representing **neither** a vertical nor horizontal approach.

In our reading of the programming documents, we have been able to classify 147 regional programmes according to this four-way classification as shown below.

Exhibit 42: Classification of Regional Approaches to Structural Funds Programming of the Information Society (N = 146)

Programming Approach	Obj 1	Obj 2	TOTAL
Vertical	15	15	30
Horizontal	9	26	35
Both	23	20	43
Neither	14	24	38
TOTAL	61	85	146

Programming Approach	Obj 1 (%)	Obj 2 (%)
Vertical	24.6	17.6
Horizontal	14.8	30.6
Both	37.7	23.5
Neither	23.0	28.2
TOTAL	100.0	100.0

In the case of the 38 regions that did not adopt a vertical and/or a horizontal approach (i.e. classed as ‘Neither’), we judge that they have attached no special importance to development and promotion of the Information Society. The remainder, the vast majority (108 or 73%), have each recognized in different ways the importance of the Information Society in their programming. Just over **half of the regions have chosen to incorporate the Information Society wholly or in part as a cross-cutting (i.e. horizontal) theme**¹⁹ - that is, either as a horizontal theme or in combination with a vertical priority. This, perhaps, begs the question as to why the proportion of planned Structural Funds expenditure devoted to ICT is not, in fact, greater than the 7.36% that we have estimated. At this early stage, we offer three possible explanations:

1. The ‘in vogue’ nature of the Information Society in European Policy and funding terms may have tempted regional decision makers to use the Information Society as a ‘hook on which to hang’ other developments and projects which they favoured but which might otherwise appear less attractive (to the Commission).

¹⁹ In many cases, the Information Society was one of a number of such themes (mainly Equal Opportunities and Sustainable Development) suggesting that the Commission’s guidance has been taken seriously.

2. Regional decision makers may have recognized the importance that has been attached to the Information Society in European Policy terms but have either found it difficult to express this in useful and concrete ways in their programming or, alternatively, have not been persuaded of the usefulness of such investment (relative to other priorities) and are merely paying 'lip-service' to the Information Society in their programme documentation.
3. Regional decision makers have, in many cases (78), adopted the information society as a horizontal priority or cross cutting theme in their programming. Of these, 35 regions have the Information Society *only* as a horizontal theme/priority and, in such cases, the dominance of other sectoral (vertical priority) interests may have 'crowded out' potential investment in the Information Society.

In general terms, we are inclined to the view that the information society should properly be treated as a cross cutting theme in programming but there is a real risk that good intentions may not be realized in appropriate cross-programme financial engineering. Review of the Regional Profiles reveals that in two U.K. regions (Merseyside and Wales), the Managing Authorities have established panels/committees and propose to appoint full-time managers for the information society (and other) cross cutting themes. This may help ensure that information society aspirations through the Structural Funds are fulfilled. However, it does not guarantee it and for the majority of regions in which the information society is a cross cutting theme, we have found no evidence (as yet) of similar arrangements.

With the data are expressed in percentage terms by column (see above), there appear to be no especially strong or striking differences in programming approach as between Objective 1 and Objective 2 regions. We note, however, that Objective 1 regions would appear to have had a greater inclination to adopt vertical and combined (Both) approaches (25% and 38%) than did Objective 2 regions (18% and 23% respectively). On the other hand, Objective 2 regions were more disposed to opt for a straight horizontal approach (31%) than were Objective 1 regions (15%).

In terms of the South-North split, we find that Southern regions (in Portugal, Spain, Italy Greece and South of France) were more inclined to adopt a straightforward vertical (32%) and both a vertical and horizontal approach (37%) than was the case with their Northern counterparts (9% and 23% respectively) - see Exhibit 42 below. By contrast, the regions in the North displayed a greater propensity to programme the information society as a horizontal priority or crosscutting theme (32% as opposed to 15%). In addition, Northern regions were more than twice as likely to adopt neither a horizontal not a vertical approach (36%) than were their southern counterparts (15%).

These differences between North and South with respect to programming approaches to the information society may, in part, be explained by the greater incidence of Objective 1 regions in the South than the North. We suggest that, because they face less critical economic conditions than do Objective 1 regions, Objective 2 regions have less need (and fewer Structural Funds resources with which) to programme the information society in a strategic fashion. We presented evidence in Section 5.1.3 that suggested that Objective 1 regions, having larger programmes (and projects) spanning a wider range of ICT domains, have a greater requirement (and incentives) to adopt a coordinated and strategic approach.

Exhibit 43: Programming Approaches by Location, shown by percentage of Regions (N =146)

Programming Approach	SOUTH	NORTH	TOTAL	Programming Approach	SOUTH (%)	NORTH (%)
Vertical	23	7	30	Vertical	32.4	9.3
Horizontal	11	24	35	Horizontal	15.5	32.0
Both	26	17	43	Both	36.6	22.7
Neither	11	27	38	Neither	15.5	36.0
TOTAL	71	75	146	TOTAL	100.0	100.0

We have also investigated the potential effects of these different approaches to programming the information society at the regional level in terms of planned Structural Fund programme expenditure on information society actions. These, again with the split between southern and northern regions, are shown in Exhibits 43 to 46 below.

The first of these (Exhibit 43) shows aggregate planned expenditure on ICTs through the Structural Funds programmes for all regions, regions in the North and in the South according to their programming approach to the information society. As before, we emphasise that the expenditure data covers all regional programme financial sources (EU, other public, and private finance). Again, we see the estimated aggregate planned ICT expenditure figure of Euro 10.6 billion for the set of 146 regional programmes on which we have been able to acquire the relevant data.

Exhibit 44: Aggregate ICT Spend by Programming Approach and Location (N=146)

Programming Approach	Average Regional ICT Spend per capita								
	SOUTH			NORTH			TOTAL		
	N	Mean	SD	N	Mean	SD	N	Mean	SD
Vertical	6	46.5	56.2	3	109.0	8.6	9	67.3	54.5
Horizontal	2	137.6	142.3	12	72.6	86.4	14	81.9	91.8
Both	20	137.6	93.1	10	35.3	39.0	30	83.8	85.9
Neither	7	36.7	39.5	10	72.4	109.7	17	57.7	87.6
TOTAL	35	84.9	86.0	35	65.0	80.5	70	75.8	83.3

As might be anticipated, the largest portion (more than 50%) of the total of ICT expenditure occurs in those regions that have chosen to adopt *both* a vertical and horizontal approach to their information society planning. Again, there are some differences between the South and the North. The pattern of southern regions adopting straight vertical or combined vertical/horizontal approaches (16% and 72% respectively) exceeding those of northern regions (8% and 43% respectively) is

repeated. And, again, we note that northern regions adopting a horizontal stance or none at all plan to spend more on information society actions (30% and 18% respectively) than regions in the South (5% and 6% respectively).

Of course, regions vary according to many factors of which, perhaps, size is the most important in this context. Exhibit 44 below shows planned ICT expenditure on a per capita basis, using population as a proxy for size. The figures displayed are the average planned ICT Spend per capita for the group of regions in each cell.

Exhibit 45: Estimated Planned ICT Spend per capita by Programme Approach & Location (N = 146)

	Average Regional ICT Spend per capita								
	SOUTH			NORTH			ALL		
	€	N	SD	€	N	SD	€	N	SD
Vertical	52.7	22	181.7	65.8	8	82.8	56.2	30	160.0
Horizontal	23.8	10	75.3	66.5	24	151.6	54.0	34	134.0
Both	118.1	24	125.0	54.4	19	164.5	90.0	43	145.5
Neither	24.3	11	44.9	31.7	28	74.0	29.6	39	66.6
TOTAL	67.2	67	136.5	51.2	79	125.6	58.5	146	130.5

From this arguably more appropriate perspective, we see that planned ICT Spend per capita for programmes adopting a horizontal approach in the North is more than twice that of the southern regions (Euro 16 against Euro 24) whilst the opposite is true for the combined vertical/horizontal approach (Euro 55 against Euro 118). The above table includes all regions investigated except where we have been unable to obtain population data. It includes, therefore, those regions which show zero planned ICT spend – either because none is planned or because the programming documents do not identify such spend adequately. The previous table is replicated below (Exhibit 45) but, this time, only for regions (about half) where we have ICT spend data.

Exhibit 46: Average ICT Spend per capita by Programming Approach and Location (N=70)

Programmin g Approach	Average Regional ICT Spend per capita								
	SOUTH			NORTH			TOTAL		
	N	Mean	SD	N	Mean	SD	N	Mean	SD
Vertical	6	46.5	56.2	3	109.0	8.6	9	67.3	54.5
Horizontal	2	137.6	142.3	12	72.6	86.4	14	81.9	91.8
Both	20	137.6	93.1	10	35.3	39.0	30	83.8	85.9
Neither	7	36.7	39.5	10	72.4	109.7	17	57.7	87.6
TOTAL	35	84.9	86.0	35	65.0	80.5	70	75.8	83.3

Restricting the analysis to these 70 regions, we see that southern regions planned to spend more on information society actions (on a per capita basis) than the North in all

cases except where programming the information society was more of an *ad hoc* process (neither vertical not horizontal).

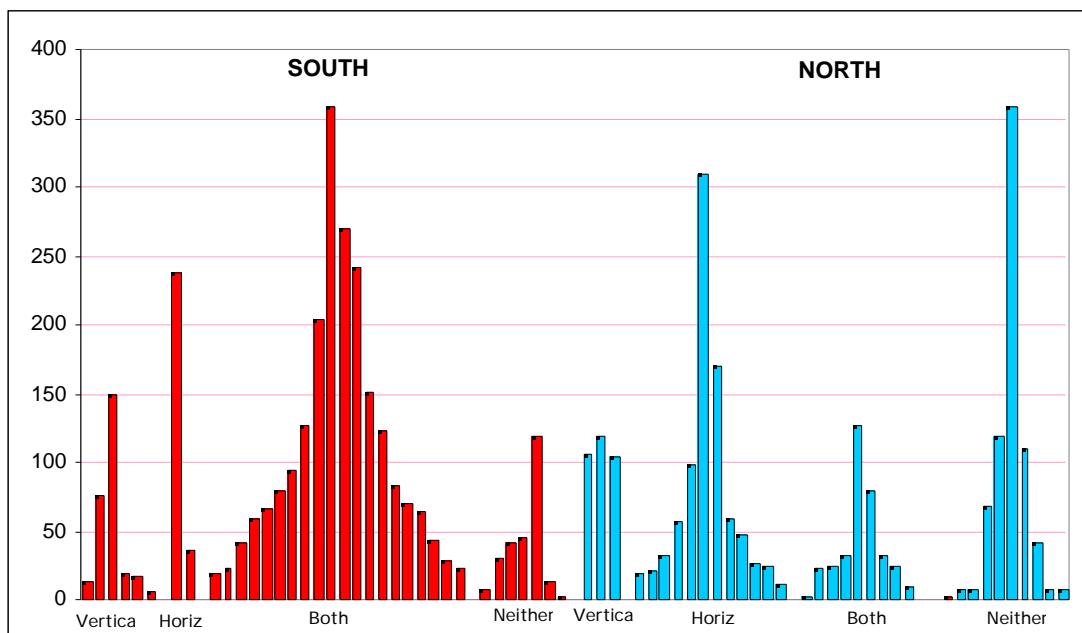
We also conducted (at the Commission’s request) similar analyses in which planned ICT Spend was expressed as a percentage of each region’s (annual) GDP, the results of which are shown below in Exhibit 46. Because the percentages are very small, the figures quoted have been multiplied by a factor of 1000 to aid interpretation. This confirms the patterns shown in Exhibit 45 above.

Exhibit 47: Planned ICT Spend as % GDP by Programming Approach and Location (N = 142)

	Average Regional ICT Spend as % of GDP								
	SOUTH			NORTH			ALL		
	%GDP	N	SD	%GDP	N	SD	%GDP	N	SD
Vertical	0.403	22	1.424	0.280	5	0.435	0.380	27	1.292
Horizontal	0.150	9	0.449	0.301	25	0.682	0.261	34	0.626
Both	1.084	24	1.359	0.306	19	0.925	0.740	43	1.237
Neither	0.235	11	0.435	0.175	27	0.421	0.193	38	0.420
TOTAL	0.588	66	1.230	0.256	76	0.655	0.410	142	0.977

The individual regional data for planned ICT Spend as a percentage (times 1000) of regional GDP for the subset of 70 regions with identified information society actions are shown in chart form below as Exhibit 47.

Exhibit 48: Planned ICT Spend as % GDP by Programming Approach and Location (N = 72)



National Operational Programmes and the Horizontal Approach

As explained in a previous section, NOPs for the information society in Greece, Portugal and Spain are of significant size and in the Greek case the NOP (OPIS) dwarfs the sum of the information society actions in the 13 regional OPs. Whilst we have estimated that the 150 or so regions making up our 'census' plan to spend in the region of €10.6 billion on information society actions, the 3 NOPs in Greece, Portugal and Spain alone account for almost €4.5 billion. These NOPs are, by their very nature, horizontal actions since they cover a wide variety of information society actions in a top-down coordinated manner. These 3 member States are also, of course, located in the South of Europe and so it is necessary to adjust upwards the appropriate cells of the foregoing tables. Computationally, this is difficult to do because of the overlap of the concerned population and the fact the same populations will, in some case, benefit both from the *horizontal* National OPs and from programmes adopting a different approach (i.e. Vertical, Both or Neither) at the regional level. In the crudest of terms, we estimate that the 3 NOPs on the information society will increase the average ICT Spend per capita in southern regions with horizontal programmes by about €150 per head.

5.1.7 National Operational Programmes for the Information Society

As part of our evaluation, we have looked at the three NOPs for the information society of Greece, Portugal and Spain. Each is the subject of a short case study that can be found in the annexes. However, since they are large programmes, we have included them in parts of our analysis of the census data, especially in our estimation of the proportion of Objective 1 and 2 Structural Funds that is planned to be devoted to the information society. The purpose of this short section is to reflect on the nature of these programmes, their relationship to regional programmes and programming, and to highlight some issues to which they give rise.

These national programmes are, despite their seeming similarities, quite different – both in content and, it would seem, in the processes that led to their formulation. The main purposes in developing national OPs for the information society (OPIS or POSI according to language) appears to be two-fold. First, they deal with those aspects of information society development that are either solely, or predominantly, within the competence of the national authorities (such as infrastructure development) and in which one would suppose that greater efficiency and effectiveness could be achieved through a national initiative. Besides infrastructure – which plays an important part in the Spanish programme – modernisation of the public administrations and public services appears to be an area of information society development that is common to all three. Whilst this applies at all levels of public administration and services – local, regional and national – there appears to be a presumption of the need for a top-down approach which may well be justified. The second and related purpose of these national programmes is based on a perceived need for effective coordination that can only be provided at the national level. Whilst health care, for example, tends to be managed at national, regional and local levels – according to the services in question – management of health care systems tends to be viewed as a national responsibility. Where a national government sees the need for modernisation of the whole system and seeks to provide leadership in progressing this, it seems appropriate to devise a national programme to ensure that the necessary coordination and cooperation takes place. In all cases in these programmes, state ministries are assigned responsibilities

for appropriate elements of the programme and have a key leadership and coordinating role to play.

The main emphasis in the Spanish programme is on “increasing Internet adoption among citizens, administration and businesses”, largely through infrastructure development to replace the old and inadequate rural TRAC telecommunications network. However, the programme covers a number of measures broadly consistent with the priorities of eEurope. The Greek programme emphasises new processes and the need for coordination and synergies and has four main priorities: Education & Culture, Citizens’ Services & Quality of Life, Competitiveness & Employment, and Communications Development to promote universal access for citizens, especially in the more peripheral regions. The main emphasis in the Greek OPIS appears to be on modernising the Greek public administration systems. The Portuguese programme (POSI) builds on a 1997 Green Paper on the information society and on rolling out the largely successful Digital Cities initiative. The aims are broad-based and, again, are broadly consistent with the eEurope Action Plan. The priorities are aimed at safeguarding and improving the environment, development of the knowledge based society and innovation, and promotion of equality between women and men. It is comprised of a number of strategic elements: integration of Portugal into the world and European economies, enhanced competitiveness, safeguarding nature and biodiversity, and promoting solidarity and cohesion.

While each programme is different, they do share a horizontal (or transversal) approach. Each argues the need for a coordinated and holistic approach to information society development. In the largely centralised systems of both Greece and Portugal, in which regional competences and capacities are limited, this is understandable. In the Spanish case, however, where the autonomous regional governments have significant legal and administrative competences, the case is not so compelling. Nonetheless, these national information society programmes do seek to ensure that other national OPs and the regional OPs take on board national priorities relating to information society development. In this sense, the transversal and top-down approach may be appropriate in three Member States in which information society development and take-up is amongst the lowest in the European Union.

The processes that underpin the development, formulation and implementation of these national OPs, vis-à-vis the regional programmes, as well as related issues of timing, would seem to be of critical importance. Each case, however, needs to be judged on its merits.

The Greek OPIS appears to have been developed in parallel with, or even after, the regional OPs. However, the quality of the ROPs with respect to information society development was especially weak and the Greek Government, through the National Ministry for the Economy (NMEC), instigated a new process to bring the regions both ‘up to speed’ and in line with the national programme. This entailed a consultative and partnership-based process in each region (supported by expert consultants financed by the NMEC) to conduct a baseline audit and assess relevant international good practice, to develop a region-specific information society strategy within the context of OPIS and eEurope, and to agree on the basis of a broad consensus a set of priorities and an action plan. The fundamental approach adopted in Greece is essentially very sound and is designed to strengthen regional and institutional

planning capacity for the future. Its success, however, will be crucially dependent on how well the process is implemented at the regional level.

By contrast, the Spanish NOP (also called OPIS) appears to have been developed independently of, and without any significant consultation with, the regions. Furthermore, unlike Greece, Spain is made up of both Objective 1 and 2 regions and the OPIS is targeted only on the Objective 1 regions. However, ROPs are subject to the administrative approval of Madrid and regional information society measures and targets appear to have been designed consistently with the national programme. At this time, the Spanish NOP for the information society has still to receive approval from the European Commission.

In Portugal, with the exception of the peripheral island regions of Madeira and the Azores, the concept of regions and regional programming is quite new. Nonetheless, seven regional territories have been defined and about 30% of the Structural Funds budget is allocated to regional actions. In this context, like Greece, the purpose of the national initiative appears to be supportive of developing planning capacity in the new regions. In fact, the information society programme was conceived as a basic programme which, as well as implementing its own actions, would provide a strategic impetus for information society investments in the other OPs. The programme sets out clearly where the perceived links are with the other NOPs - for example, the Health OP has a measure that is specifically related to ICT – and there are also links to the ROPs in the mainland and the ultra-peripheral regions.

In all three cases, we would draw attention to the obvious need for effective liaison and close cooperation between regional actors and the national authorities. In particular, within these contexts, it is important to understand that three types of actions are planned: (a) national actions, financed from the OPIS, mainly designed for the benefit of national bodies and the services they provide; (b) national actions, financed from the national programme, targeted on beneficiaries in the regions; and (c) regional actions, financed through the regional programmes, for the benefit of the regional population. All three, but especially the latter two, will have beneficial impacts on the regions but the efficiency and effectiveness of these measures will depend heavily on coordinated implementation.

Without doubt, transversal national programmes are difficult to manage in these countries. In particular, the time and effort taken in proper coordination may delay implementation and some compromises may be necessary if problems of slow absorption are to be avoided. At the same time, we think such programmes have many merits and time taken to plan and implement their effective delivery should be well rewarded in time.

5.1.8 Other EU initiatives

5.1.8.1 The Community Initiatives

In addition to the mainstream programmes, there are a series of Community Initiatives, which also invest, in regional or local actions. These are:

Initiative	Budget in billion Euro
INTERREG	4.9
LEADER	2.0
EQUAL	2.8
URBAN	0.7
TOTAL	10.3

Each initiative has a set of specific objectives in which the information society also has a role to play. We have not looked specifically at these initiatives but some summary information on the main regional initiatives is included in the interests of completeness.

5.1.8.2 INTERREG

INTERREG III is a Community initiative that aims to stimulate interregional co-operation in the EU between 2000-06. It is financed under the European Regional Development Fund (ERDF). The current phase is designed to strengthen economic and social cohesion throughout the EU, by fostering the balanced development of the continent through cross-border, transnational and interregional co-operation. Special emphasis has been placed on integrating remote regions and those that share external borders with the candidate countries. An indicative allocation of the budget by Member State is as follows:

Member State	Million Euro
BE	104
DK	34
D	737
EL	568
E	900
F	397
IRL	84
I	426
L	7
NL	349
A	183
P	394
FIN	129
S	154
UK	362
Network	47
EUR15	4875

INTERREG III is made up of 3 strands:

Strand A : cross-border co-operation between adjacent regions aiming to develop cross-border social and economic centres through common development strategies. The priorities for action under this strand are:

- Promotion of urban, rural and coastal development

- Strengthening the spirit of enterprise
- Developing small and medium-sized enterprises, including those in the tourism sector
- Developing local employment initiatives
- Assistance for labour market integration and social inclusion
- Initiatives for encouraging shared use of human resources, and facilities for research and development, education, culture, communication, health and civil protection
- Measures for environmental protection, improving energy efficiency and renewable energy sources
- Improving transport, information and *communication networks and services*, water and energy systems
- Increasing co-operation in legal and administrative areas
- Increasing human and institutional potential for cross-border co-operation

Strand B: transnational co-operation between national, regional and local authorities aims to promote better integration within the Union through the formation of large groups of European regions. Here the priorities for action are:

- Drawing up regional development strategies at transnational level, including co-operation between towns or urban areas and rural areas
- Promoting effective and sustainable transport systems, *together with better access to the information society*. The aim here is to facilitate communication between island or peripheral regions.
- Promoting protection of the environment and natural resources, particularly water resources.

Strand C : interregional co-operation aims to improve the effectiveness of regional development policies and instruments through large-scale information exchange and sharing of experience (networks). Priority action areas relate to exchanges of experience and good practice between Member States and with third countries concerning cross-border and transnational co-operation under Strands A and B of Interreg III and co-operation initiatives in sectors such as research, technology development, enterprise, *the information society*, tourism, culture or the environment.

A brief analysis of the INTERREG programmes agreed and published shows that of the 27 programmes, 16 have been classified with Telecommunications and Information Society among their key words. An outline analysis of these programmes shows that some 28% of the total expenditure is planned for priorities, which have a strong or identified Information Society aspect.

5.1.8.3 Urban

Urban II is the Community Initiative of the European Regional Development Fund (ERDF) for sustainable development in the troubled urban districts of the European Union for the period 2000-06.

As a follow-up to Urban I in 1994-99, Urban II aims more precisely to promote the design and implementation of innovative models of development for the economic

and social regeneration of troubled urban areas. It will also strengthen information and experience sharing on sustainable urban development in the European Union.

Within this context, Urban II has the following objectives :

- to promote the design and implementation of highly innovative strategies of economic and social regeneration in small and medium-sized towns and declining areas in major conurbations
- to reinforce and share knowledge and experience on regeneration and sustainable urban development in the European Union.

A similar analysis to the above shows that of the 52 published Urban Programmes, 24 have been identified as having Information Society as a theme.

5.1.8.4 Innovative Actions

The innovative actions of the European Regional Development Fund (ERDF) are laboratories of ideas for disadvantaged regions. As the opportunities for experimentation are often limited under the main support of the Structural Funds, the innovative actions provide regional actors with the "risk space" needed to respond to the challenges set by the new economy.

During the period 2002-06, the programmes comprise measures relating to one or more of the following three strategic themes:

- knowledge-based regional economies and technological innovation;
- e-EuropeRegio: the information society and regional development;
- regional identity and sustainable development.

In 2001 3/2 of the eligible regions (more than 100) submitted a programme application of which 81 were approved and launched, with a total EU contribution of 200 million Euro. Of these 81 programmes, 57 chose "regional economies based on knowledge and technical innovation" as a theme. DG Regio has suggested that the relatively high level of activity on this topic here, as opposed to in mainstream actions relates to the difficulty of managing what can be relatively complex "soft" actions compared to larger infrastructure type projects.²⁰

5.1.8.5 EQUAL

Funded by the European Social Fund (ESF), EQUAL tests new ways of tackling discrimination and inequality experienced by those in work and those looking for a job. The key principals of EQUAL are : transnational co-operation, innovation, empowerment, thematic and partnership approach, dissemination and mainstreaming to ensure that EQUAL informs policies and practice. The activities are structured on the four pillars of the European Employment Strategy: Employability, Entrepreneurship, Adaptability and Equal opportunities for women and men. In addition EQUAL has a separate theme, which addresses the needs of asylum seekers. The European Union's

²⁰ New ways of introducing innovation in regional programmes, 3rd Conference of the Innovating Regions in Europe, June 2002

contribution to the Initiative amounts to 3,000 million euros for the period 2000-2006 and this will be matched by National funding. Of this, 23% has been earmarked for projects in theme 3, which includes 3F “adaptation to change and New Information Technologies”.

5.1.8.6 Leader+

The total Community contribution to Leader+ in this period will be EUR 2,020²¹ million, financed by the EAGGF-Guidance Section. Leader+ is aimed at encouraging and supporting high quality and ambitious integrated strategies for local rural development. It will also put a strong emphasis on co-operation and networking between rural areas. All rural areas of the EU are, in principle, be eligible under Leader+. The priority themes for Leader+, given the opportunities and constraints facing rural areas, are:

- the use of new know-how and new technologies to make the products and services of rural areas more competitive,
- improving the quality of life in rural areas,
- adding value to local products, in particular by facilitating access to markets for small production units via collective actions,
- making the best use of natural and cultural resources, including enhancing the value of sites of Community interest selected under Natura 2000.

The strategy proposed in each development plan must be structured around one or more of the above themes.

5.1.9 Objective 3/ESF

This new Objective brings together the previous Objectives 3 and 4 and takes as its starting point the new title on employment introduced by the Amsterdam Treaty. It assists regions throughout the EU except those covered by Objective 1, taking into account the general needs of areas facing structural difficulties with regard to economic and social conversion.

Within the framework of the European Employment Strategy, about 60 billion Euro of EU funds will be available through ESF over the 7 years of the programmes to:

- promote greater economic and social cohesion across the EU;
- promote job creation and competitiveness across the EU by investing in skills development;
- support the specific labour market development needs of those regions lagging behind the rest of the EU;
- underpin the commitments made at the Lisbon European Council to promote a dynamic knowledge-based economy;
- provide the necessary investment in people and training infrastructure to complement development and introduction of new technologies;
- ensure that all people have an equal chance to share in the benefits of economic growth;
- bridge the employment gap between men and women.

²¹ Source DG Agriculture

Maximising the potential from information and communication technologies (ICT) is regarded as crucial to strengthening the competitiveness of companies within Europe. As a result, many programmes encourage a more effective transfer of technology to SMEs through employee training, support for the development of IT networks and improving collaboration between SMEs and ICT research and development centres.

The structural funds will make a major investment in IT in schools, together with the training of teachers and trainers. Developing multi-media training packages and a range of distance and open learning methods to promote the development of IT skills in SMEs are a feature of a number of programmes.

The new ESF programmes reflect the increasing concern to confront what has become known as the digital divide, the exclusion of certain groups from the potential benefits of emerging ICT. Programmes give a commitment to widen access to new information technologies, although we have not analysed the implementation of this in any detail and thus cannot comment on how concrete this commitment is in practice.

According to the information recorded to date by DG Regio in their indicators database, IS expenditure as part of the overall Objective 3 expenditure can be broken down as follows:

Exhibit 49: IS Expenditure for Objective 3

	Total Obj 3 by country	Total Obj3 IS Expenditure (MEURO)	%IS Expenditure by Country
Germany	4,756	828	17.41%
Belgium	765	153	19.97%
Spain	2,222	765	34.45%
France	2,222	765	34.45%
Italy	3,887	778	20.01%
Netherlands	1,750	0	0.00%
Austria	548	90	16.37%
Finland	418	120	28.72%
UK	4,743	1,101	23.22%
Sweden	748	289	38.67%
Denmark	379	125	32.94%
Luxembourg	39	5	13.25%

5.2 The Sample.

In addition to collecting data on a census basis, we have endeavoured to look in greater depth at a 'sample' of regions. The sample was drawn with a particular focus on regions in the (predominantly Objective 1) Cohesion Countries but with a balance of regions with Objective 2 status and regions from the North.

Our methodology involved two approaches. The first entailed a more detailed reading of regional programme documents and an assessment or evaluation by the readers on

various aspects of the processes employed and the decisions (e.g. priorities) reached. The second approach with the sample regions was to carry out a questionnaire survey of key personnel in the regions associated with the programming process. This was designed to enable us to validate our own readers' evaluations, to validate the information already otherwise available to us, and to supplement such information – especially with regard to (a) the relative priority accorded to the information society, both with respect to the previous programme period and in terms of competing priorities in this period, (b) an assessment of the information society 'maturity' of selected regions, (c) the regional perception of priorities for information society development, 2000-06, in terms (for example) of the *e*Europe priorities.

Unfortunately, we have encountered considerable delays and difficulties in completing these exercises. The survey questionnaire of the regions has suffered a very low response rate. Follow up communications have been made repeatedly but with little success. In consequence, we have ended up with a smaller sample than had been planned.

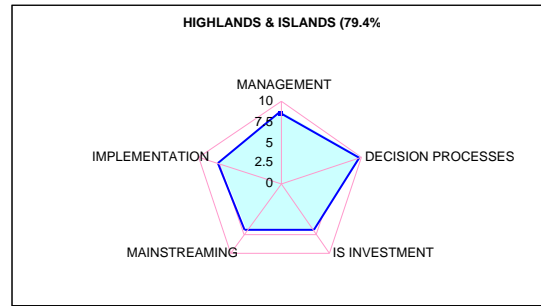
In the case of the readers' evaluation of the regional programmes, we have responses for 47 regions. The readers used a common evaluation template that comprised 5 main evaluation criteria. For each criterion, the reader was required to respond to either 3 or 4 questions relating to that criterion by choosing one from amongst a set of 3 or 4 pre-set answers (i.e. a scale from 0 – 2 or 0 – 3). In analysing the responses, we have assigned scores in the range 0 to 2 or 0 to 3 depending on whether there were 3 or 4 pre-set responses. For each criterion, the scores were totalled and re-scaled in a range 0 to 10 for consistency. The 5 re-scaled criteria scores were then totalled and expressed as a total out of a 100 (i.e. as a percentage).

Our five main criteria, and the questions related to each, were concerned with (1) management of the programme, (2) the nature of the decision-making processes that led to the choice of priorities, (3) the appropriateness (e.g. balance) of decisions regarding proposed information society investments, (4) mainstreaming (and consistency) with other regional, national or European policies, and (5) the quality of proposals for implementation (including target setting, monitoring and evaluation etc.).

A typical set of results, for the Highlands & Islands region (UK) is shown below.

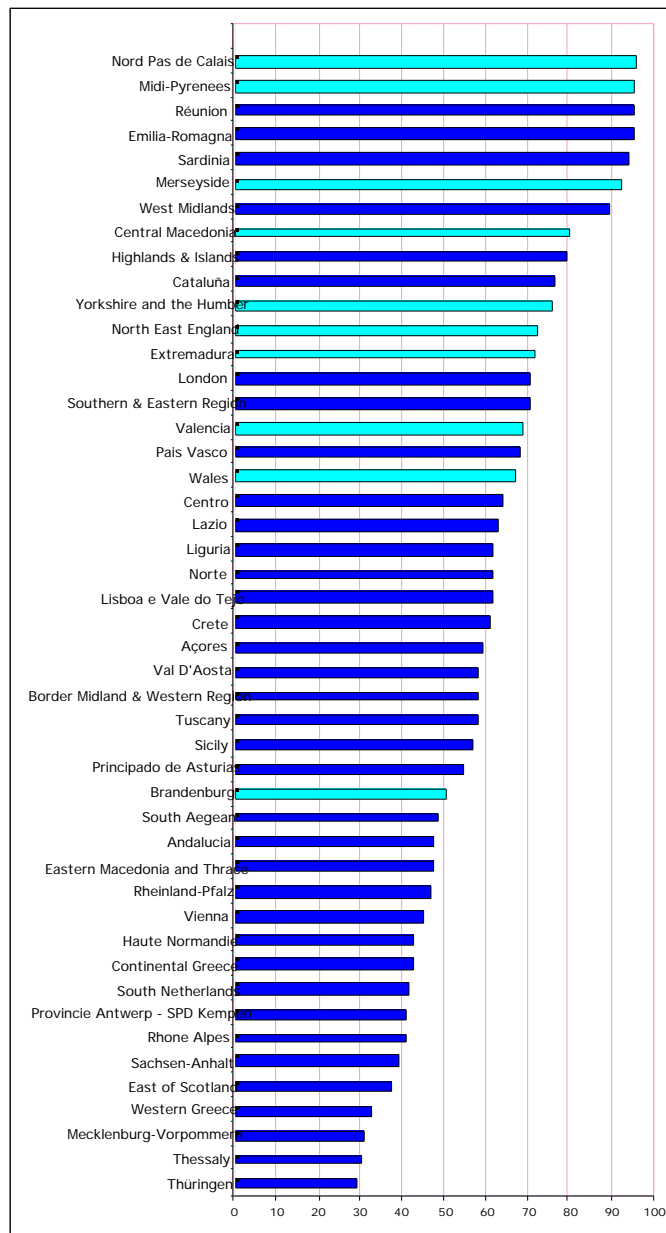
Exhibit 50: Evaluation Scores for Highlands & Islands of Scotland (UK)

Highlands & Islands	Score
1 MANAGEMENT	8.6
2 DECISION PROCESSES	10.0
3 IS INVESTMENT	6.7
4 MAINSTREAMING	6.7
5 IMPLEMENTATION	7.8
TOTAL	79.4



The complete set of results in summary form is presented below.

Exhibit 51: Evaluation Scores for All Sample Regions (N = 47)



In the foregoing chart, we have highlighted (in lighter blue) those regions that took part in the IRISI or RISI initiatives. Perhaps not surprisingly, these regions perform above average in terms of our evaluation of their programming processes since, to some degree, the so-called RISI methodology has become quite widely accepted as a sound, comprehensive and successful approach to regional information society development. In consequence, the design of our evaluation template has been somewhat influenced by this.

By the same token, if these RISI regions have adopted a sound methodology, we have to ask why, on average, their planned ICT Spend per capita is only half that of the non-RISI regions. The supposed success of RISI regions in mainstreaming the information society into regional plans and programming would lead to the opposite conclusion. In particular, we would have expected the RISI process to lead to an effective voice (and lobby) for prioritisation of information society investment in the regional programmes. We can only explain these results by suggesting that either (a) the RISI regions have, in fact, been less successful than has been supposed in their mainstreaming efforts (albeit more successful than would have been the case without their initiatives) or (b) that they have indeed mainstreamed successfully and that market forces have begun to support the acceleration of information society development and that public interventions either now takes place with less dependence on the Structural Funds or that Structural Funds interventions for information society actions are more dispersed and integrated into programmes. In the latter case, we would have found it more difficult to detect and value these.

5.3 Input from the regions

As part of this study we sent a questionnaire to the selection of regions for whom regional profiles were to be constructed. The aim of this questionnaire was to deepen and update the information on the regions and to attempt to add detail that was missing in the programming documents.

The questions focussed around the following main areas:

- Information about the region, and the extent to which they consider the IS a priority issue
- Information on the current situation
- IS maturity
- IS Strategy Development
- Monitoring and indicators
- Policy analysis

The low level of response, despite repeated follow-up means that it is not really possible to draw up any statistically significant conclusions on the results. Nevertheless it is possible to identify certain patterns based on the data and also on the conversations we had as part of the follow-up process.

5.3.1 Information about the region, and the extent to which they consider the IS a priority issue

None of the regions contacted felt that IS was not a priority. However since lack of resources was cited as the main reason for not responding to the questionnaire it is clear that for many it is merely one priority among others, and at least in administrative terms, there are no dedicated resources.

Among the respondents the reason for the priority was generally expressed in terms of the IS being a key factor underlying competitiveness and regional development.

No patterns could be discerned among the level of IS support or the percentage of this financed by the Structural Funds. This would seem to reflect differences in interpretation of the “Information Society” with some using very specific interpretations, and others considering that nearly all activities have some aspect relating to the Information Society.

5.3.2 Information on the current situation

It was clear from the discussions with the non-respondents that there was a lack of information on IS indicators at a regional level. Not having this information was a major reason for not completing the questionnaire as they felt they had not the time to research the questions and that therefore it was not worthwhile to respond.

Even among the respondents there was a significant proportion that did not have this information. Only the more advanced regions did hold quantified information on IS indicators.

This does not mean that regions do not have a good qualitative understanding of their local situation but they were not able to express this in a quantified manner.

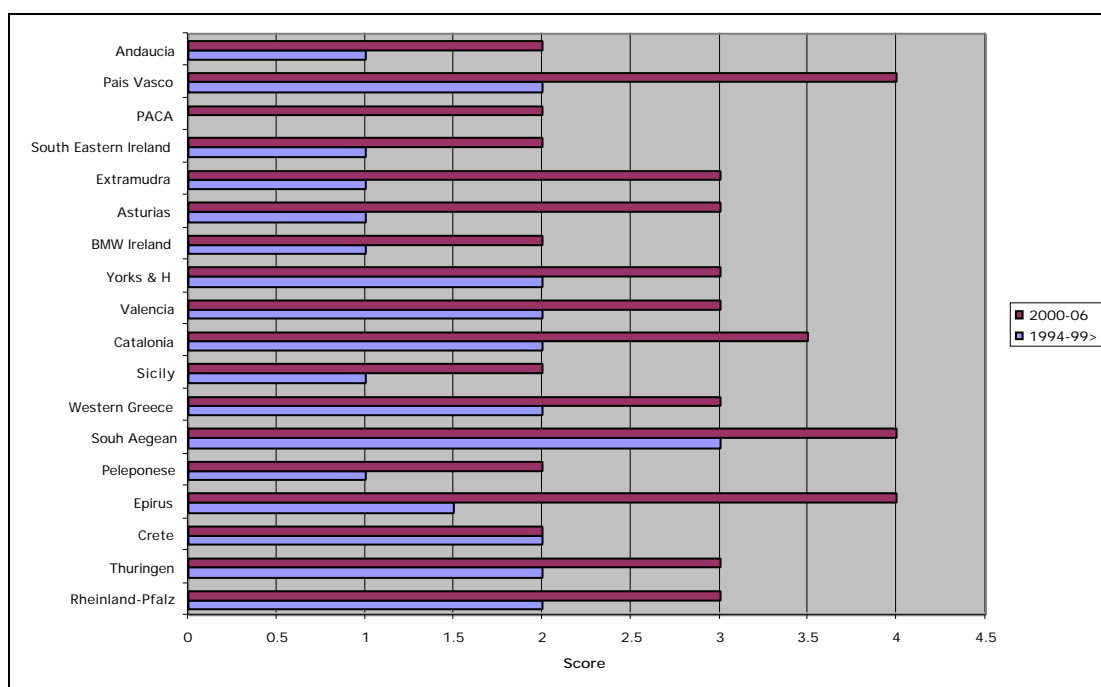
5.3.3 IS maturity

In terms of IS maturity and the trend, the regions all reported a significant development from the previous period. Only one felt they were starting from zero and three felt they had reached full maturity. The scale used for measuring maturity was as follows:

Scale

1. **early stage**, still need to develop basic infrastructure and/or widespread access
2. **developing**, basic infrastructure in place but lacking in high speed infrastructure; access, content and services are patchy
3. **intermediate**, with good infrastructure coverage and widespread access, but some skills gaps, some gaps in the range of content and e-services available, and some imbalances in the use of e-services by businesses, public sector and education providers
4. **mature**, with good infrastructure coverage, widespread access, few skills gaps, wide range of content and e-services available, e-confident citizens, businesses, public sector and education providers

Exhibit 52: Degree of IS maturity



5.3.4 IS Strategy Development

The extent to which national or European IS priorities, initiatives and actions have influenced the strategy was high among respondents – of the 14 who replied to this question, 9 said it had done so significantly and the remainder said it had moderately affected them. However for other EU initiatives (eg 5th Framework programme for R&D, MEDIA, Growth/Employment initiative, European Investment Bank i2i etc) only 2 felt it was significantly, 7 moderately and 4 very little.

5.3.5 Monitoring and indicators

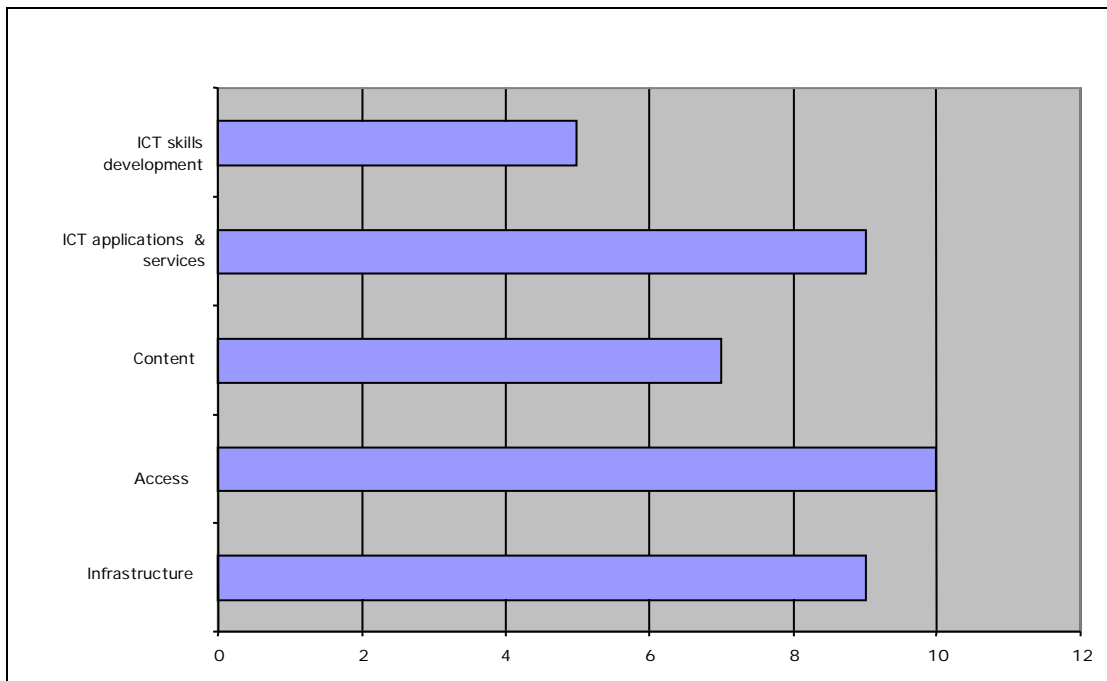
Eight of the twelve responding on this issue had at least some indicators developed for monitoring IS issues. These ranged from very basic to quite comprehensive with some regions working on increasing the coherence between local indicators and those for European interventions. Only 2 specifically cited the e-Europe priorities and one of those felt a need to complement them with further indicators. There was no clear correlation of the various indicators between regions.

5.3.6 Policy analysis

In terms of the relative importance of the Information Society between the two programming periods, eight respondents felt it had become significantly more important, five felt it was slightly more important and one reported no change. No regions felt it had declined in importance. In terms of the level of SF resources all reported an increase, 9 of more than 25% and 5 of up to 25%.

In terms of the balance of actions between the two periods only one reported a difference, the others reporting only an increase in emphasis. As an indication of the relative importance of the various components of IS activity, we also asked them to rank the relative importance of the various aspects which gave the following pattern:

Exhibit 53: Relative Importance of IS components



5.4 Some Lessons for good practice

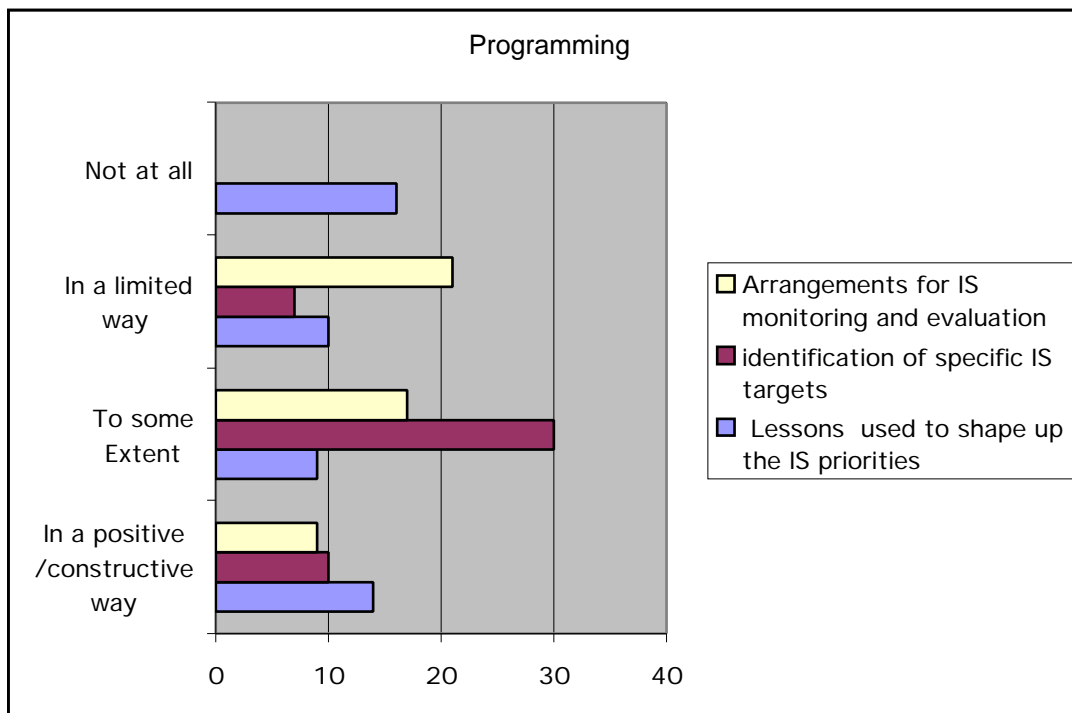
In looking at examples of good practice from the regions it has to be stressed that this relates to good practice in terms of either the documents themselves, or initiatives that have been brought out in these documents. We were looking for examples in the areas of the management of the programme development process, the nature of the decision-making process and choice of priorities, balance and consistency and plans for implementation.

5.4.1 Management of the programme

In this area we were looking for use of lessons from the 1994-99 programme and evidence that the ex-ante evaluation had been used to shape up the IS priorities of the current programme, in terms of IS project selection and identification of specific IS targets, and of robust arrangements for monitoring and evaluation of IS priorities/measures.

In general some note had been taken of the previous programme and the ex-ante evaluation, but in many cases the IS was not specifically mentioned in either, thus this was a new area of intervention. Where it had been taken into account this was more likely to be in terms of the identification of specific targets than in the areas of shaping the priorities or arrangements for monitoring and evaluation.

Exhibit 54: Factors taken into account in Programming of IS



In general the plans had very little material in regarding baseline IS information. In some cases regions have commissioned specific studies to complement the programming process or as part of a wider IS strategy development process. In others, the development of indicators forms part of the actions identified in the plan.

Examples:

- Merseyside has a separate ICT business plan, which is a document containing strategy, consultation documents and tables of actual projects and spends and acknowledges previous initiatives, such as MerseyWideWeb, and the need for review of them.
- West Midlands has undertaken an ICT survey that has been extensively used.
- Valencia has identified a gap of indicators and statistical base in the 1994-99 programme which they are trying to solve in the current programme

5.4.2 The nature of the decision-making processes

Here we were looking to identify the extent to which the region/programme priorities/measures were developed on the basis of a broad consultation and consensual process (e.g. regional IS steering committee or similar, open meetings, etc). Generally speaking there was evidence of widespread consultation over the plan itself, often as a result of comments in the ex-post evaluation of previous programmes, but the level of specific IS consultation was less well defined. In some cases the definition of the real strategy formed the first action of the programme, either in a high profile manner such as in the Greek case or at a more specific regional level.

Priorities have mostly been derived on the basis of evidence of demand and with regard to regional development priorities, although in some cases it was stated that for

some elements there was a need to explicitly stimulate user demand to meet development priorities.

Reference is nearly always made to EU and national policy (e.g. e-Europe) but what is often lacking is the picture of how the actions set out in the Programme documents relate to any other overall regional IS strategy. Thus it is difficult to judge in some cases whether the balance of IS proposals for IS development in relation to economic, social and sustainability objectives is good, well-structured and clearly thought through as it may be that only a partial picture is presented.

Examples:

- Emilia-Romagna had specific consultation in the context of the IS strategy
- Liguria has one single IS measure in the programme which focuses on the definition of the strategy
- The Greek implementation process has provided resources for each region to produce a detailed business plan for the implementation of IS in their region. This process is still underway but although it seems the results are mixed, there are lessons from the process itself.

5.4.3 The appropriateness (e.g. balance) of decisions

In this area we were seeking to identify the planned impacts of the IS measures and to extent to which the balance between actions was appropriate. In fact it was difficult to do this as, for example, the proposed level of investment was often hard to identify. In some cases the regions had made some attempt to estimate what level of overall investment was involved in the plan, but especially in the case of programmes with a strong vertical element it was not clear how this investment would be divided between the types of action or target. It would be helpful to have some standard set of categories that could be used for this type of investment.

In addition the extent to which planned impacts were clearly identified was extremely limited. To some extent this reflected an overall weakness in the plans but also a lack of generally accepted practice in the field of IS indicators.

5.4.4 Mainstreaming (and consistency) with other policies

In most cases there was evidence that the results of the SWOT analysis had been taken broadly into account. The number of instances where this had then led to specific actions was less marked although there were some opportunities identified where IS measures could potentially have been advantageous. Equally, in other cases there were other weaknesses or threats where IS was clearly not an appropriate response, but it was rare for this type of analysis to be presented. Again, the cases where these issues were recognised but the decision had been made to address them with other resources were difficult to identify.

Examples:

- In Réunion the use of IS is clearly linked both to the SWOT and to the overall regional development strategy. For example, in addition to its use as a general tool to overcome the problems of peripherality, it has been identified as an area where

export products and services can be developed, which do not suffer from the problem of costs of transport.

- Midi Pyrénées has analysed the whole programme in the light of the e-Europe and e-Learning action plans and a table of this is part of the plan. It could be replicated although it is a bit restrictive in that it relates to e-Europe priorities which will, of course change with the new action plan, but it does show how regional development priorities can be made to fit e-Europe

5.4.5 The quality of proposals for implementation

Overall these were at a fairly general level – present but not explicit, especially with respect to the information society. Only in a few cases did we find examples of specific actions for monitoring and evaluation elements with a specific IS focus. Often there is a well set out organisation and rules on how proposals will be reviewed etc – but no implementation plan for priorities as such.

Example:

- In Greece the general rule is imposed by the central government but Central Macedonia has introduced an informal monitoring mechanism for the IS to assure its best possible exploitation
- In Yorkshire and the Humber an annual review of activity associated with ICT to ‘Collate, analyse and distribute performance data to aid the learning process and inform future investment’ is planned.

6 CONCLUSIONS

In this chapter we present the conclusions that we have reached in the light of our evaluation of regional and national Structural Funds programming, 2000-06, with regard to the information society planning in Objective 1 and Objective 2 regions. The information society is a broad topic with many facets and, in the context of regional development, there are many layers of complexity. Nonetheless, we have endeavoured to structure our conclusions in a coherent fashion and, based on these, we later offer a number of recommendations targeted at the various levels of decision-making involved.

The preceding chapter summarised the principal results that derive from our analysis of the quantitative data that we have been able to collect. However, we have amassed and sought to synthesise a vast amount of information, both qualitative and quantitative, and our conclusions are based on our reflections on, and understanding of, this wider body of information.

In all, we researched the programming documents of 150 regions (Single Programming Documents, Operational Programmes, and Programme Complements) and the 3 national Operational Programmes for the information society (in Greece, Portugal and Spain). In doing so, we identified 798 programme priorities, of which 130 in 70 regions were devoted to (or strongly incorporated) information society development. We investigated in greater depth the information society programmes of a sample of 47 regions and conducted an evaluation of the planning processes in these. A questionnaire was also sent to each of these regions but the response rate was poor. Finally, from amongst the sample, we selected a smaller number of regions of particular interest for further investigation as case studies.

Our evaluation, then, has been based mainly on an assessment of programme documents, most of which were drafted around 1999. These documents state aspirations, ambitions and plans and it is these, in a programming context, that we have evaluated – not the outcomes, for which any evaluation is perhaps still too soon.

Despite the diversity of regional contexts and the variety of approaches adopted in information society programming, some clear trends and tendencies have emerged from our evaluation that suggest, encouragingly, *an increasing commitment to information society development and more coherent approaches to information society planning than in the past*. At the same time, a number of issues present themselves and we offer our conclusions and recommendations on these with the Mid-Term Review and next Structural Funds Programme in mind.

6.1 Main Trends and Tendencies

6.1.1 Structural Funds investment in information society actions has increased

Earlier estimates of the proportion of Structural Funds being allocated to information society investments had been quite low. In December 2000, at the Commission's conference on "The Information Society and Economic, Social and Territorial Cohesion 2000-06: a new opportunity" in Lyon, Commissioner Barnier reported that an estimated 1.5 to 2% of the EU's Structural Funds' contribution had been committed to information society actions in the previous period. More recently, in 2001, the Commission reported that an estimated 5% of the Structural Funds (EU contribution) was devoted to information society investment in Objective 1 regions. By contrast, we have estimated, on the basis of our investigation of 150 regional programmes and 3 national programmes for the information society that the Structural Funds can be expected to co-finance a total of just under EUR 16 billion of information society investment in the period 2000-06. This represents *an estimated 7.36% of total Structural Funds investment allocated to information society investment* and suggests that national and regional decision makers are increasingly committed to information society development. By comparison with the previous programming period and earlier estimates, we consider there are some grounds for optimism. Through this investment the Structural Funds are also making a contribution to the overall Lisbon objectives, rather than acting in isolation.

Considerable variations between regions in per capita investment levels exist, of course, from an estimated EUR 358 per capita (or 38% of Total Structural Funds expenditure) in the Border, Midlands & West region (Ireland) to zero (apparent) investment in about half of the regions that we investigated. However, it is important to emphasise that the Structural Funds account for only a part of regions' information society investment. Generalised judgements regarding information society investment plans in the current programme period are, therefore, difficult to make.

Our estimate of planned investment of the Structural Funds in information society development is more than twice the funding available through the IST Programme of the 6th Framework RTD Programme and suggests, to us, the need for the eEurope 2005 Action Plan to take more seriously the potential role of the Structural Funds in the fulfilment of its objectives. We recognise, of course, that the Structural Funds are decentralised and thus not under the control of the European Commission. Equally, however, the potential gains and synergies between regional policy and information society policy are substantial and call for significant efforts of co-ordination if they are to be fully exploited.

6.1.2 Regions are tending to adopt coherent and strategic approaches to information society planning

Amongst the 74 regions that we identified as having a priority for information society development in their programming, *the majority (almost three quarters) have adopted a coherently planned and strategic approach.*

We have classified as taking a *vertical approach* those regions that have concentrated their information society actions in a single programming priority/axis or, in some cases, have dedicated an entire priority to the information society. Others have

adopted what we term a *horizontal approach* in which information society actions are distributed throughout the priorities/axes of a programme as appropriate but within a single and clear strategic framework. Both approaches are to be commended. The horizontal approach best reflects the pervasiveness of the information society in all walks of life. From a programme management and implementation point of view, however, there is little doubt that the horizontal approach poses some challenges – not least the difficulty of ensuring that information society measures secure adequate funding in the face of strong interests from other (often powerful and well established) vested interests within each priority or axis. Changing the *status quo* can be difficult, the more so when efforts are disaggregated. By contrast, the concentration of effort implied by the vertical approach better ensures an appropriate allocation of resources but risks creating a perception that adoption of ICTs and development of the information society are the concern of a specific sector or sectors – and not of relevance to the economy and society as a whole.

Some regions (almost 30%) have adopted *both* a vertical and a horizontal approach that, in the light of the above remarks, we consider a sensible compromise provided that the existence of a vertical axis (or dedicated measures within an axis) does not weaken the resolve to ensure the implementation (where appropriate) of information society actions throughout the programme.

At any rate, all three approaches (horizontal, vertical, or a combination of both) are acceptable and, if appropriately designed, can be highly effective in producing desired impacts.

6.1.3 A higher proportion of Objective 1 regions has adopted a structured and strategic approach to programming the information society.

Many of the Objective 1 regions and a high proportion of regions in the South (where Objective 1 regions are mostly located), have adopted a horizontal approach to information society programming. We think this is a good development and paves the way to convergence but we emphasise that the problems of implementation can be greater, therefore necessitating effective management and higher administrative competences (which may sometimes be lacking).

6.1.4 About half of the regions investigated do not appear to prioritise information society development (or had provided no financial information regarding it).

Whilst half of the regions (74) have demonstrated, to varying degrees, a commitment to information society development in their programming, the remaining half (73) either display no such commitment or had failed to identify specific funding for it. This may be a cause for concern but we emphasise that the Structural Funds form just one means by which regions can accelerate their information society development. Besides having access to regional and/or national funds for such purposes, some regions will have used their Structural Funds to good effect to prioritise information society development in the *last* programme period and may judge that further prioritisation is now unnecessary, and in some regions, the private sector and public bodies may have generated conditions in which market forces are bringing forward the necessary levels of investment.

Amongst the regions in whose programmes there appears no evidence of (or no relevant financial data for) an information society priority, we find 39% of the Objective 1 regions and 57% of the Objective 2 regions. Amongst the Objective 1 regions for which there was either no information society priority or inadequate financial data, Spanish regions are the most prominent - but this may be explained by the existence of a National Operational Programme (NOP) for the information society in Spain that covers a number of applications domains. Amongst the Objective 2 regions for which we could find no evidence (or relevant data) for information society investment, French and Italian regions tend to dominate.

6.2 National and Regional Programming

6.2.1 National programmes for the information society have provided leadership in some Cohesion Countries

The existence of NOPs for the information society in 3 Cohesion countries (Greece, Portugal and Spain) recognises the need for national co-ordination and economies of scope and scale, plus effective leadership. As such, they *represent coordinated and top-down approaches* and, in the Greek and Portuguese cases at least, were a response to concerns regarding a lack of management and administrative competences at the regional level. Whilst these 3 NOPs have some features in common, they also have their differences.

From a national perspective, and in the context of the CSF, these NOPs can be regarded as horizontal programmes with measures proposed for most sectors of economy and society, and spanning many aspects of information society development. Within each, however, the priorities are mostly vertical in their orientation necessitating close cooperation with other NOPs coordinated by different ministries. In Greece and Portugal, priorities appear to have been determined in a top-down manner as a means to stimulate relevant actions that might otherwise have been lacking, or to address specific needs and priorities at the national level. In all cases, the national programmes are accompanied by the recommendation to regions to complement national activities and adapt their own regional programmes for the information society, tailored to local needs. Achieving a close articulation between national and regional levels represents a major challenge for effective programming and implementation.

6.2.2 Ongoing dialogue between the national authorities and the regional partnerships is critical

In the Greek and Portuguese cases, and despite the fact that Portugal does not as yet have regional administrations, *there has been a dialogue between the national government and the regional actors, initiated by the national authorities*, in order to articulate (and coordinate) better actions at the regional and national levels and, we think, to support the development of, and thus strengthen, appropriate competences at the regional level.

In the case of Spain, the NOP was not approved until the end of 2001 and we had to rely on earlier documents that, in any event, did not elaborate the processes and dialogues through which priorities were decided and the extent of coordination between the regional and national authorities. One important aspect of the Spanish

NOP has been the need to address a specific problem in the Objective 1 regions (namely, the inadequacy of the TRAC telecommunications network in rural areas for information society applications). We understand that the regional authorities of Objective 1 regions had each prioritised such development. In this instance, the *dialogue was initiated by the regions through the National Assembly and resulted in a national programme for action*. Thus, the role of the national authority has been to coordinate efforts to meet common regional needs in a single programme action. This underlines the need to recognise not only the importance of effective dialogue between regional and national authorities but, of equal importance, *the need for action to be taken at an appropriate (regional or national) level*. Had programming decisions been left to individual regions, each with their own solution, the results are likely to have been incoherent and inconsistent.

In Spain, regional authorities have greater administrative autonomy, IS maturity and legal competences than in Greece and Portugal. Despite this, the need for (and benefits of) national leadership and coordination has been apparent. Although more top-down in approach, we see in the Greek case a similar leadership and coordination role being played by the national authorities with respect to the ICT programme for all schools and the health system but with flexibility exercised at the regional level (especially with regard to procurement decisions).

In Greece, more generally, where the information society elements of the initial ROPs were judged inadequate (in terms of information society measures), we consider as *good practice* the Greek Government's support for the regions in the formulation of regional information society business plans based on a sound analysis of the baseline position and relevant international good practice, the selection of priorities following consultation and on the basis of a broad consensus, and the development of a concrete and costed action plan.

6.2.3 Wherever possible, national programmes need to be adapted in terms of regional implementation to emphasise region-specific needs and priorities.

We consider that in some Cohesion Countries there is evidence of a tendency for regional needs to be inadequately addressed in the context of a national programme. *e*Europe priorities appear, in other cases, to have influenced regional planning more than their own SWOT analysis. This reflects, in part, what we consider as the lack of IS-maturity in such regions (in Greece and Portugal). Some aspects of the national programmes have a direct impact on, and provide benefits to, these regions and it is important that such actions have, as far as possible, a breakdown and distribution that reflect region-specific priorities. In the Greek case, in particular, the NOP dwarfs the information society measures of the ROPs and there may be a tendency for regions to be influenced by the scale of NOP funding and the *e*-Europe priorities (and, therefore, by the budgets allocated to the mainly sectoral priorities) rather than by the specific needs and priorities of the region based on a sound regional baseline analysis.

More generally, experts usually undertake SWOT and baseline analyses while decision-making is the province of politicians. Moreover, priorities are determined by both internal and external factors and we cannot, *a priori*, state that one is more important than the other. In the context of inevitable resource limitations, striking an optimal balance can be difficult and reconciling the needs derived from the SWOT and baseline analysis (for example) with (say) national and/or European policy

initiatives can pose problems. Too often, unfortunately, there is a tendency to spread resources too thinly in an attempt to cover all ‘priorities’. In reality, this merely reflects an inability to prioritise.

6.2.4 The choice between bottom-up and top-down approaches to regional information society development is dictated, in part, by the degree of regional administrative skills in general and IS-maturity in particular.

Whilst evidence from regions in other member states (and, particularly, the regions which participated in the IRISI and RISI²² initiatives) indicates to us the benefits of a bottom-up region-centric approach, based on a broad public-private-voluntary partnership and consensus decision-making, we recognise that not all regions have the necessary institutional competences and capacities to adopt this model successfully. In such cases, low levels of IS-maturity may necessitate some trade-off between a region-centric bottom-up approach and a more top-down (nationally-directed) perspective in order to kick-start and guide the development of an effective regional process. Again, the Greek case demonstrates that the ‘centre’ can produce significant development and multiplier effects.

In any event, the development of regional information society strategies and action plans, and their mainstreaming into Structural Funds programming, needs to reflect the institutional context of the particular Member State and the specific distribution of responsibilities and decision-making powers between the national and regional authorities. In Portugal, for example, responsibilities are shared between the *local* and national levels in the absence of regional administrative structures. Here, the need for national leadership is more evident so as to avoid extensive fragmentation. Elsewhere, in neighbouring Spain for example, higher levels of autonomy and administrative competences at regional level, combined with greater IS-maturity, allows a more region-centric approach to be adopted.

6.2.5 Effective coordination between the national and regional levels will be essential.

Our evaluation has been based principally on an assessment of programme documents and, therefore, on the aspirations and plans of the regions. In the case of Spain, but particularly in Greece and Portugal, achieving the objectives of the plans and the targets for priorities will depend on good and timely implementation arrangements and especially on effective coordination between national and regional/local authorities. As yet, coordination arrangements are not fully articulated. However, new approaches are being adopted and need time to be developed and refined.

6.2.6 In Portugal, an alternative (more limited) approach reflects the absence of regional structures

In Portugal, the national strategy is based on the successful Digital City concept and its rollout to other territories reflects the absence of regional administrative structures and the important role of cities within territories. The approach is based on Aveiro which was used as a test-bed for a concentrated but holistic information society development as an ‘Infoville’ (like Villena in Valencia, Spain). Intensive testing and validation was undertaken prior to rolling out the programme to other towns and cities

²² The Inter-Regional Information Society Initiative (IRISI) and the Regional Information Society Initiative (RISI).

in the region. Cities and larger towns play an important role in the development of a territory or region and the initial focus on the cities in the Portuguese NOP is rational. However, care will need to be taken to avoid a worsening of an urban-rural divide and to ensure, over time, that regional competences covering the whole territory are developed.

6.2.7 The design of national programmes and their management arrangements, as well as their relationship to regional programmes, are shaped by the ‘IS-maturity’ of regions.

Our evaluation of the national and regional programmes in the 3 Cohesion Countries leads us to the conclusion that the design of national programmes and the management and coordination between the national and regional levels is determined largely by the IS-maturity of the regions. Amongst these three Member States, Spanish regions are, without doubt, the most IS-mature. By contrast, Greek regions have little administrative capacity and low IS-maturity. In consequence, the Greek NOP is a broad programme covering most aspects of information society development but with a well-defined role for, and participation of, the regions (though with budget limitations higher than in the other 2 countries). In Greece, ongoing efforts to support regional capacity building are in hand and this seems as much to reflect the lack of IS-maturity of the Greek regions and a desire to strengthen regional competences on the one hand, as it does on the other hand to a desire to catch up in information society terms with the rest of Europe. The Portuguese NOP falls somewhere in between those of Spain and Greece, reflecting a willingness to build *new* national-‘regional’ partnerships despite the absence of regional administrations whilst building on the administrative capacities and the (relative and potential) IS-maturity of the cities.

6.2.8 Strategies for the information society at national and regional levels, as well as Structural Funds programming in the wider context of regional development, could be better coordinated and reported.

Since the end of the 1990’s, most Member States have developed national strategies regarding information society development (e.g. those relating to e-Government) but the role and influence of these in regional Structural Funds programming is not always clear. At the same time, many regions have developed region-wide information society strategies and action plans whose implementation is dependent on a variety of sources of funding (European, national and regional – the last two including private as well as public funding). In programming Structural Funds proposals for the information society, it is essential that priorities and measures are placed in the context of any wider regional strategy and national policies and that these are made explicit in programming documents.

6.3 Factors Determining the Scale and Ambition of Regional Programmes for the Information Society

6.3.1 Objective 1 regions plan to invest more per capita in information society actions than do Objective 2 regions.

Based on the ROPs alone, and on average, Objective 1 regions plan to devote more of their Structural Funds per capita for information society actions than do the Objective

2 regions (on average, EUR 90 in Objective 1 regions compared to EUR 57 in Objective 2 regions). Since the impact of the 3 NOPs (in Greece, Portugal and Spain) falls exclusively on Objective 1 regions, the disparity is significantly greater than these figures suggest. However, the distinction may be explained by two factors. First, the Commission required all Objective 1 regions to prepare and submit a regional information society strategy and action plan as part of the programme preparation and this intervention may have focused attention on information society investment more than would have been the case without it. Second, however, Objective 1 regions receive a higher level of funding and therefore have bigger programmes (allowing for population size) than is the case for Objective 2 regions. The variation between Objective 1 and 2 regions may, therefore, be explained by variations in funding alone. We found also that regions in the South have information society investment plans greater than those in the North but, again, we point out that Objective 1 regions are located mostly in the South.

6.3.2 Smaller regions are investing more (per capita) in information society development than larger regions

Regions with smaller populations (less than 1 million) are committing more per capita to information society measures than are regions with average populations (between 1 and 2 million), while regions with average populations plan to invest more than larger regions (those with populations in excess of 2 million). Given the complexities of adopting the information society as a paradigm for regional development, we conclude that smaller (and thus, perhaps, more coherent) regions feel better able to marshal the key players behind a strategy for change and, in addition, may feel that the scale of the challenge is more achievable. In larger regions, with a greater diversity of interests (as well as problems and goals), the scale of the task is more difficult since larger partnerships are needed and building consensus is correspondingly more difficult to achieve.

6.3.3 The more sparsely populated and more peripheral regions propose to commit more per capita on information society development.

We have found clear evidence that the more sparsely populated a region and/or the more peripheral its location, the greater is the likelihood that its plans for Structural Funds expenditure on information society development is greater than in regions located nearer the core of Europe or regions that are more densely populated. At first sight, it might appear that this can be explained by a perceived need for greater investment to overcome isolation and peripherality and, hence, to prevent a widening of the digital divide (both between the region and its competitors and between communities within the territory). Whilst this may well be the case, our data and analysis have taken no account of the differential costs of information society development, especially those relating to enhancing the capacity of infrastructure, in sparsely populated and peripheral territories. Conversely, we draw attention to the well-known agglomeration effects of the larger cities that attract greater private sector investment. In terms of telecommunications infrastructure, the centres of population concentration tend to be well developed by market forces. On the other hand, rural, less-populated and peripheral territories have failed to attract private investment and the case for public intervention is much stronger.

6.3.4 There appears to be no direct association between planned levels of information society investment and regions' levels of unemployment and education.

For the sake of completeness we report that we endeavoured to evaluate other potential determinants of regions' planned investment (per capita) in information society measures, amongst them education and unemployment levels. However, we were unable to establish any evidence of a link between these.

6.3.5 The planned information society investment levels of the RISI regions is, on average, little more than half that of other regions making such investment.

The regions, which participated in the Regional Information Society Initiative²³, and its predecessor (IRISI), followed a bottom-up methodology in preparing regional strategies and action plans, mobilising the key regional actors, and seeking to mainstream their priorities in their regional Structural Funds' programmes. Lower levels of information society expenditure by the RISI regions, on average, may be explained by their failure to adequately mainstream their priorities. However, there may be other explanations to account for this unexpected result. First, there is wide variation in investment levels amongst the other regions, a trend not so apparent amongst the RISI regions. Second, a number of RISI regions were successful in securing substantial Structural Funds' support in the last programme period. Third, having secured Structural Funds in the last period, such regions may now be better able to attract investment funds from other sources: regional or national public funds as well as private sector investment.

If all regions covered by our evaluation are taken into account (i.e. including the half, approximately, which plan to commit none of their Structural Funds to information society development or for whom relevant financial data was not available), then the picture is quite different. On this basis, the RISI regions display a level of information society investment that is approximately twice that of the remaining regions.

6.3.6 The planning capacity of regions varies significantly, as do levels of IS-maturity, and these may explain wide variations in information society investment levels.

We found substantial variations between regions in respect of planned information society investment through the Structural Funds, from those that have no apparent plans for the information society (that we could detect – but including those for which relevant financial data were not available at the time) to those committing very significant resources (up to 38% of Total Structural Funds expenditure in one case) in support of their information society ambitions. However, from our reading of programme documents and other sources, we have identified a substantial variation between regions' planning competences and capacities and what we have termed their IS-maturity. We have encountered some evidence to suggest that regions which are weakest in development planning terms are often least able to exploit innovation and new technologies to overcome their structural difficulties. We found clear evidence in our evaluation of the sample of regional programmes that those regions that were good at one aspect tended to be good at the others. Conversely, weak regions tended to be weak in all of the evaluation criteria that we employed.

²³ An initiative of the Innovative Actions coordinated and co-financed by DGs V (now Employment & Social Affairs) and XVI (now Regional Policy) under Art.6 (ERDF)/Art.10 (ESF).

Regions with a low level of IS-maturity have a greater need to use their Structural Funds as a catalyst to promote indigenous investment behind a programme of change. On the other hand, we think regions with low levels of planning competence are more inclined to be risk-averse and to favour ‘traditional’ forms of investment. On the other side of the coin, regions with a higher level of IS-maturity tend also to have higher levels of planning competence. In both cases, Structural Funds investment in information society development may be low, but for different reasons. We have been inclined to conclude that information society investment financed through the Structural Funds will tend to be highest in those regions in which there is both a reasonable level of planning competence (implying an adequate ability to manage the necessary structural changes) and an average level of IS-maturity (implying network externalities that trigger profit, and a strong awareness of information society threats and opportunities even if the information society infrastructure, applications and services are not developed).

Amongst the top 20 regions, ranked according to information society expenditure per capita, are to be found 6 Greek regions, 4 UK regions, and either one or two from other member States with the exceptions of Finland, Italy, Germany, Denmark and the Netherlands. Of these 20 regions, 7 are island regions or regions with a mainly insular character²⁴.

An in-depth evaluation of the planning processes for information society development in a sample of (47) regions confirms our view that planning competences vary amongst the regions. We found that the RISI regions tended to perform better than non-RISI regions but we concede that our choice of evaluation criteria has been influenced by the so-called RISI methodology.

6.4 Information Society Priorities of the Regions

6.4.1 Regional programming priorities for the information society were broadly consistent with the priorities of the eEurope 2002 Action Plan.

In general terms, the information society priorities of the ROPs were broadly consistent with, and thus, supportive of, the eEurope 2002 Action Plan priorities. However, some of the eEurope priorities were more dominant than others (especially “Cheaper, faster Internet”, “Working in the KBE and ICT skills”, “Participation and access for all in the KBE”, and “Accelerating e-Commerce”). There were some indications of the growing importance of “Government on line”, particularly in Objective 1 regions. At the same time, regions’ proposed investment in “Faster Internet for Researchers” and “Secure networks and smart cards” was negligible or non-existent. We must emphasise, however, that we found the terminology of eEurope 2002 somewhat at odds with the language of the ROPs and the results of our analyses have depended a great deal on interpretation of the ROP texts. Nonetheless, we can be unequivocal in saying that

- enhancement of infrastructure,

²⁴ South Aegean, North Aegean, Crete, Ionian Islands (Greece), Balears Islands (Spain), the Açores (Portugal), and the Highlands & Islands (Scotland, UK)

- access and participation for all to diminish the digital divide,
- the acceleration of, and support for, e-commerce (especially for SMEs), and
- the development of skills for work in the knowledge-based economy

have been the main priorities of the regional programmes taken as a whole. Whilst these are generally consistent with the eEurope 2002 priorities, we think it unlikely that the ROPs were influenced much (if at all) by them since programmes were drafted mostly before the publication of the first eEurope initiative.

6.4.2 The information society priorities of Objective 1 regions differ from those of Objective 2 regions.

We found clear indications that Objective 2 regions favoured infrastructure enhancement, acceleration of e-Commerce development, and encouragement for Participation and Access in the Knowledge-Based Economy relative to Objective 1 regions. The Objective 1 regions, on the other, placed relatively greater emphasis on investments relating to working in the knowledge-based economy and the development of ICT skills, and government on-line. In addition, the Objective 1 regions appear to be making small (but, possibly, strategic) investments in Youth into Digital Age, e-Health, development of digital content, and intelligent transport systems, priorities that are almost totally absent in Objective 2 programmes. Given the different scale (and range) of the problems that face Objective 1 regions, we are not surprised to find their priorities differ from those of Objective 2 regions.

However, we detect a stronger inclination in the Objective 1 regions to invest in support of public sector activity, perhaps due to the relative weakness of the private sector generally and the difficulties, in particular, in supporting the indigenous growth of the enterprise sector. Objective 2 regions, where the SME base tends to be better established, appear to be favouring investments in support of the growth of indigenous firms and inward migration of enterprises, especially in high-tech fields.

6.4.3 Regions vary in their priorities on the information society according to their Member State.

When we analysed the ROPs by Member State, we found no systematic patterns. This suggests that regional priorities may be driven by specific national economic circumstances and/or specific national policies. In the regions of some Member States, for example, we found that e-Commerce development was a dominant priority (Germany, Italy and the UK) whilst in others infrastructure development appeared to be a principal concern (Austria, Belgium, Spain and Sweden). Such conclusions need, however, to be treated with some caution since in some cases the number of regions was small (e.g. Belgium) and in others one specific regional programmes tended to skew the outcome. Nonetheless, we conclude that a blanket prescription regarding regional information society priorities is not appropriate and that each region should decide its priorities in the light of its own (economic and social) context.

6.4.4 Some eEurope priorities are less relevant to regional needs and opportunities than others.

Whilst we have found that regional information society programming has been broadly consistent with the priorities of the eEurope 2002 Action Plan, we think the same is largely true for those of eEurope 2005. Indeed, the unexpectedly high

emphasis placed on infrastructure development in programme documents (especially in Objective 2 regions) may well anticipate the perception articulated in *eEurope* 2005 of the growing and future importance of broadband for competitiveness. In contrast to this, a number of the *eEurope* priorities, both 2002 and 2005, appear to have no relevance in a regional planning context. This is especially the case regarding, for example, “Faster Internet for Researchers” and “Secure Network and Smart Cards”. Such developments are seen largely as national (and even European) responsibilities and beyond the competences of regional authorities – and this, we think, corresponds well to the subsidiarity principle, since these are typical cases where the regional level is too limited to achieve reasonable standards and economies of scale.

We conclude that there are better and more relevant ways of classifying information society actions than those proposed in the *eEurope* Action Plans (2002 and 2005) from a regional development perspective. We found the terminology of the *eEurope* 2002 priorities sometimes difficult to relate to regional programmes. We have experimented with alternatives but consider there is a need to develop and promote a more coherent framework for regional information society development and to formulate an approach to indicators and benchmarking that (a) are better related to regional development agendas and (b) which will remain constant through time to allow time series data to be developed. In particular, we think there needs to be better ‘mapping’ between *eEurope* indicators and the priorities of regional development and cohesion. More than this, we are of the opinion that the horse should come before the cart. *eEurope* is a welcome policy development but we believe strongly that the information society and its tools should be seen as means not ends. To this extent, the ongoing development of *eEurope* indicators should take the regional dimension into account (as indicated in the 2005 Action Plan) to ensure that ICTs are at the service of individuals, enterprises, communities and regions

There is some risk that the *eEurope* policy is being seen as an end, rather than as a policy instrument in support of competitiveness of enterprises, better and more secure jobs, greater opportunities for and improvements in learning, increased equality of opportunity and enhanced social cohesion – namely, the agenda which tends to drive regional (economic and social) planning. Since the Structural Funds are the largest financial instrument by which the Commission might seek to promote and finance the *eEurope* action plan, we think that a greater understanding of regional needs might have guided its development and that a more explicit role for the regions should be found.

6.4.5 Information society investment tends to be dominated by supply-side measures with too little attention paid to stimulating the demand for ICTs.

Almost without exception, regions tended to favour what we consider to be *supply-side* information society measures including infrastructure development, support for e-Commerce, e-Learning and e-Government. Whilst a substantial number of the regions that included the information society in their programming did make specific provision for demand stimulation, such actions tended to be small in comparison with supply-side measures. To some degree, regions are facing a chicken-and-egg problem in that demand is difficult to stimulate in the absence of an adequate supply of relevant applications and services and whilst access, and costs of access, remain a potential barrier. Nonetheless, an appropriate balance needs to be struck and we consider it as important to build a critical mass of users, as it is to build a critical mass

of applications. While a supply-oriented tendency is understandable, based as it is on routines and conventions, it is among the issues that need most urgently to be changed. Especially in the context of telecoms deregulation, it is important also to involve industry in the overall strategy. However, the Structural Funds rules and competition rules mean that this is not necessarily as simple to achieve as promoters might hope.

6.4.6 Infrastructure development remains a high priority for many regions.

We were surprised by the extent to which regions, especially those with Objective 2 status, prioritised enhancement of their telecommunications infrastructure. Depending on one's interpretation of related programme measures and the choice of indicator, we estimate in broad terms that about 20% of total Structural Funds investment will be committed to telecommunications infrastructure development. In almost all cases, references were to the development of advanced services. We conclude that the increased availability and take-up of broadband in some (other) regions has resulted in a new level of thinking about such infrastructure. Just a few years ago, having a modern infrastructure meant digital exchanges, high-speed trunk lines and the availability of an adequate number of ISPs. Today, broadband appears increasingly to be viewed as an important source of competitive advantage (for those who have it or develop it) as well as posing a growing risk in terms of the digital divide and competitive disadvantage (for those which don't).

If accelerated broadband development and take-up are critical to the economic development and competitiveness of Europe and its regions, then new policy questions and challenges arise which, thus far, have been inadequately addressed. In the context of cohesion and regional policy, we may be facing the threat of a growing digital divide unless steps are taken to prevent this. There is overwhelming evidence that broadband development, driven by market forces and private investment, is occurring in bigger towns and cities and in their well-populated hinterlands. Elsewhere, however, not only is such development lagging behind but there appears little prospect of market-driven provision in the foreseeable future. In consequence, the case for public intervention is strengthened and, from the specific perspective of EU policy, a number of questions remain to be tackled. Amongst these are:

- The extent to which the priority attached to broadband development by the eEurope 2005 Action Plan remains consistent with definitions of the Universal Service Obligation and Cohesion Policy;
- Whether (and to what extent) Structural Funds could be *increasingly* deployed for broadband development in territories where market failure is clearly evident.
- Whether *additional* European funding will be needed to achieve acceleration of broadband access so as to align the objectives of EU Cohesion policy and its policy on information society development as expressed in the latest eEurope Action Plan.

In this context, it is important to emphasise that the issues relate to *access* to broadband networks, the time period over which (if at all) ubiquitous and affordable access is considered desirable, and the extent to which *public* access service points could be considered an adequate substitute for affordable universal access in the home or at the place of work.

We conclude that the emergence of broadband *may* necessitate increased levels of public intervention in rural, sparsely populated and peripheral regions if a worsening of the digital divide is to be avoided. However, the choice of priorities and investment decisions need to take account of the specific economic context of each region and it is by no means the case that the widespread availability of broadband access will confer sufficient competitive advantage as to justify such investment. That said, there may be compelling social reasons (in terms of avoiding the digital divide) for such investment.

In reality, we cannot yet know the future significance to a region of the widespread availability of broadband access in terms of its social and economic development. It is clear from our evaluation that a substantial number of regions (mostly Objective 2, but also in the Spanish Objective 1 regions through the NOP) place a high priority on developing broadband access. We think that such investment must be viewed as experimental but, equally, that such experiments are both desirable and necessary. At the same time, we conclude that there is insufficient evidence to date to state, in an unequivocal way, that widespread availability of broadband access is a pre-condition for economic prosperity.

6.4.7 The planning and strategy formulation processes are important in the identification of relevant regional information society priorities

Some programmes incorporate information society measures in a highly focused way whilst others adopt a broader-based approach. We think neither is right and neither is wrong. The issue must be judged in the specific (and largely unique) circumstances and context of each region and its needs and priorities at a given point in time. We do think, however, whichever approach is chosen, that there needs to be a good analysis and justification for the choice. Too often, such a rationale is missing.

Regions with more IS-maturity and with higher planning capacity tend to have adopted a sound methodological approach to their information society planning. In particular, such regions conduct a sound analysis of their baseline situation (including making good use of the evaluations of previous relevant activities, initiatives and projects) and seek to identify relevant international good practice. This is followed by a careful regional SWOT analysis in which key regional actors participate and on which they reach a consensus. This provides the basis for a public debate to agree the priorities for the information society strategy. Sometimes we found a “scatter-gun” approach in which it was apparent that priorities had not been based on a sound prior analysis but, rather, had been selected on the basis of rather academic ‘text-book’ arguments. In other cases, a sound analysis and a good regional SWOT were carried out but the region failed to link these to the choice of priorities. Moreover, in some cases, we detected a tendency to develop the information society in isolation from the wider regional development strategy. Good planning and programming processes are essential to effective deployment and management of the Structural Funds and to accelerating information society development for lasting regional development benefit. We consider it important that ICTs, as the tools of the information society, should be developed so as to achieve agreed regional priorities better, faster and/or cheaper. Sometimes, following a sound analysis, regions may find that ICTs open up new opportunities not hitherto available and, in these circumstances, it may be appropriate to amend the priorities of the regional development plan accordingly.

6.4.8 Indicators of ICT demand at the regional level are largely absent.

In very few programme documents were we able to find clear evidence of (actual or latent) demand for ICTs. This suggests to us that information society development may be too often driven either by faith, a (somewhat blind) defensive strategy against competitive pressures, or by supply-side interests. In the absence of adequate indicators of demand, we find it difficult to see how the needs of enterprises and citizens can be met through appropriately crafted information society measures.

6.5 General Aspects of Structural Funds Programming and Programme Management in the Context of Information Society Planning

6.5.1 Programme documents have evolved over earlier CSFs towards a common broad approach and style of presentation.

From the perspective of this evaluation, we found these documents were often overlong and that they could be better structured. Importantly, they lack a common approach and format with regard to data collection and reporting and there is no single prescription regarding the essentials of data reporting and no unique and mandatory system for data transmission to the Commission.

6.5.2 We have detected a trend, compared to the earlier programme period, for there to be increasing fragmentation (especially in Objective 2 regions) in defining eligible areas and sub-territories.

This will make the problems of data collection yet more difficult and costly and potentially impair attempts at effective evaluation.

6.5.3 We are struck by the slowness of the Structural Funds programming, approval and implementation processes in the face of fast-changing technologies and to changes in demand.

In this context, there is a need to develop flexible strategies, and to incorporate regular monitoring, evaluation and review mechanisms. Our evaluation of the sample regions indicated that these management and implementation issues were the weakest amongst the criteria that we evaluated.

6.5.4 In the context of information society planning, and despite the importance of regional and cohesion policy and the volume of EU funds committed to it, the quality and availability of regional data to support policy analysis, review and formulation is sometimes inadequate.

Regions differ in their needs and their institutional contexts. However this, if anything, underlines the need for consistent and robust data to ensure a clear understanding of the local situation and to enable others to draw lessons in the light of clear information.

7 RECOMMENDATIONS

In this section, with the exception of two general recommendations, we address our recommendations to each of the relevant levels of decision-making since the implementation of the Structural Funds relies heavily on the principle of partnership. We have also incorporated a section addressed to the Candidate Countries since there may be some useful lessons for some of them in preparing the ground for accession. However, we are conscious that some Candidate Countries have already developed national and/or regional information society strategies and, in some cases (such as Estonia, Poland and the Czech Republic), both thinking and implementation may be more advanced than in some European Union regions.

7.1 To all concerned

- R.1 There is a need to design a common set of core indicators relating to information society development that can be used at regional, national and European levels. Moreover, there would be significant benefits if all parties concerned could agree a common framework for the electronic submission of data relating to these indicators to a common repository to facilitate cooperation among regions to assist them in their planning, programming, monitoring and evaluation. The development of indicators should go beyond the collection of data dealing with availability, usage, costs and attitudes and should include consistent and regular measures of anticipated demand – in addition, of course, to dealing with socio-economic impacts.
- R.2 Besides meeting national and European policy needs, agreement on the development of information society indicators needs to take appropriate account of regional development agendas.

7.2 To the European Commission

7.2.1 Programming Issues

- R.3 The Structural Funds are but one of a number of sources for financing information society development. While the Structural Funds frequently play an important and catalytic role in kick-starting information society development in Less Favoured Regions, their contribution needs to be placed in the wider funding context and this needs to be made more explicit in programming (documents). More specifically, we suggest that programming documents should contain a brief summary of any overall regional information society strategy, including planned sources of finance, highlighting the locus and scale of Structural Funds' contributions.
- R.4 The Structural Funds programming process, and the related activities of planning and negotiation, is slow in comparison with the fast-changing pace of information and communications technologies. The Commission should review its current arrangements for programming with a view to streamlining it if possible but, in any event, should consider how flexible systems could be

introduced that allow more frequent revisions to programmes and their priorities in the light of technological (and other exogenous) changes.

- R.5 The Commission should clarify and streamline the guidelines regarding the use of Structural Funds for infrastructure development, especially in the light of eEurope 2005 and development of broadband access.
- R.6 At the same time, the Commission should clarify its policy position in respect of accelerated access to broadband services and concerns over a widening digital divide. Specifically, there is a need to re-define the meaning of the digital divide in the context of accelerating (but nonetheless uneven distribution of) access to broadband services.
- R.7 The Commission should insist that information society measures adequately serve current and future user needs in programme documents and in the context of the Mid-Term Review.

7.2.2 Evaluation and Monitoring

- R.8 There is, in our view, a need for further study and analysis of the minimum threshold level of investment (and the duration of public funds' intervention) needed for successful take-off of information society development, especially at the regional level.
- R.9 The Commission should initiate a thorough ex-post evaluation of the RISI regions' programmes as a basis for a better understanding of regional information society development, for an improved exchange of good practice, and for better support and guidance to less IS-mature regions. It is in particular important to investigate which regions they did better in stimulating demand, and how, and thus to what extent the leverage role can be considered successful.
- R.10 In the light of the eEurope 2005 Action Plan, the Commission should review carefully the impact of the growth in broadband access and services on its social inclusion and cohesion policies and, in particular, on the digital divide within and between regions.
- R.11 The Commission should take the opportunity of the Mid-Term Review to evaluate the effectiveness of the implementation arrangements especially in those regions which adopted a horizontal (or have combined a horizontal and vertical) approach to information society programming.
- R.12 At the Mid-Term Review, the Commission should review the programmes of those regions for which we have been unable to find a commitment to information society investment in their programme documents. The reasons for such an omission needs to be understood and, if appropriate, addressed.
- R.13 The scale of the three national Operational Programmes for the information society in Greece, Portugal and Spain alone justifies close scrutiny at the Mid-Term Review. Whilst the rationale for such programmes may be justified and the plans for their management and implementation may seem reasonable, it will be essential to evaluate progress and to ensure that deficiencies are

corrected. Equally, these national approaches are intrinsically of wider interest (to other Member States and to the Candidate Countries) and useful lessons could be drawn. In particular, any such review should assess the impact of these programmes in terms of regional programmes and priorities and the effectiveness of arrangements for coordination between national and regional levels. In Greece and Portugal, there is the start of a shift of responsibility to regional and local authorities that should be encouraged and supported on an ongoing basis by the Commission. In addition, some assessment of increased regional planning capacity should be undertaken.

7.2.3 Data, Indicators and Benchmarking

R.14 While some work is being carried out on the definition of indicators at European and national levels, there is too little happening at regional level. The Commission could offer some initial encouragement and animation of the activities of those regions that are attempting to lead in this area.

7.2.4 Policy Issues

R.15 eEurope is a welcome policy development but there seems to us some risk that the cart is being put before the horse. We hold strongly the view that the information society and its tools should be seen as means not ends. To this extent, the Commission should ensure that the ongoing development of the eEurope Action Plan and its implementation should take the regional dimension more strongly into account (as proposed in the 2005 Action Plan) to ensure that ICTs are at the service of the individual, enterprises, communities and regions, as well as of Member States and European Union institutions.

R.16 The Commission should take advantage of its privileged role as overall observer to initiate a system for bringing together information and good practice relating to regional information society development and to encourage regions to cooperate more in sharing good practice and engaging in bench-learning exercises.

R.17 The close coordination, already increasingly apparent, between Commission services responsible for information society policy and regional/cohesion policy, needs to be maintained. Coordination of the main financial instruments (the IST programme of the 6th RTD Framework, e-TEN, e-Content etc. and the Structural Funds) could be improved to ensure more consistent support for the implementation of these policies.

7.3 To the Member States

R.18 There is a need to improve systems of regional data collection on information society indicators, on a commonly agreed basis, so as to better support the planning and programming processes at regional level.

R.19 Where Member States have developed national Structural Funds programmes for the information society, they should undertake ongoing monitoring (and, where necessary, adaptation) of implementation arrangements and of the coordination and integration of the national and regional actions. It is important

to maintain a high level of ambition and not reduce requirements in favour of absorption in the course of implementation.

- R.20 In most Member States, national policies and programmes relating to the information society (for example, with regard to e-Commerce and e-Government) impact on regional planning and programming. There is a need therefore, even in the absence of an NOP for the information society within a CSF, for effective coordination between the national and regional levels.
- R.21 Even in those Member States in which regional competences and IS-maturity are relatively well-developed, national authorities can, in some instances, provide useful coordination across regions where regions share a common priority. In general, there needs to be an appropriate division of responsibilities between national and regional levels.
- R.22 Member States should consider carefully the potentially conflicting demands of good strategic planning and implementation compared to speed of absorption of funds, enabling regions to take a strategic view and potentially achieve greater success in the longer term.

7.4 To the Candidate Countries

- R.23 Information society planning should be strategic in its approach taking into account all sources of funding. Moreover, in the larger countries, there needs to be a clear, comprehensive and transparent articulation between national and regional planning and implementation.
- R.24 Strategies should focus on regional needs and opportunities within the broader frameworks of national and European policies and programmes.
- R.25 In preparing their strategies and plans for information society development, candidate Countries and regions should aim to ensure an adequate allocation of funds to ensure conditions for effective take-off in which (mostly) private investment will sustain appropriate development. The current average of approximately 7.5% could be used as a benchmark.
- R.26 Whilst the allocation of adequate public funding is required in the first instance to ensure ongoing sustainable development of the information society, it should be accompanied by an assessment of risks: both the risks associated with the commitment of such funds and the ability to achieve desired outcomes and impacts, and those of failing to do too little, too slowly.
- R.27 At both the national and regional levels, information society planning should focus as much on (ICT) demand stimulation as on supply-side measures. Particular and ongoing efforts should be made to develop good planning processes that reflect user needs (at local, regional and national levels) by favouring a bottom-up approach that is open, participative, representative and partnership-based with a view to building a consensus behind priorities for action.

R.28 In the case of integrated approaches to IS development, which we recommend, regions should consider carefully what targets should be set, what funds should be earmarked, and what arrangements will be necessary for effective coordination and management. In particular, there is a need to achieve an adequate focus for investment, avoiding the pitfalls of fragmentation and spreading resources too thinly across too many priorities.

7.5 To the Regions

7.5.1 Programming, Planning Processes and Regional Capacity

R.29 Information society development in support of economic and social development touches all aspects of economy and society and calls for an explicit planning process based on an underlying methodology that engages all sectors of the community. Piecemeal and fragmented attempts to accelerate information society development are, we think, ineffective and likely to fail. Rather, such development needs to adopt a strategic, holistic and integrated perspective.

R.30 Information society proposals in Structural Funds Programmes need to be carefully selected and based on a good justification linked to a sound analysis (SWOT etc) of the implementation context and the territory-specific needs and opportunities.

R.31 The less IS-mature regions should invest time and effort in strategy development and building regional development capacity. Learning from relevant international good practice can shorten the time and costs associated with many developments and this should provide adequate justification to regions to engage in more and deeper inter-regional networking.

R.32 ICTs, as the tools of the information society, should be developed so as to achieve agreed regional priorities better, faster and/or cheaper. Where appropriate, in the light of technology development, it may be appropriate to revise the regional development plan so as to exploit emerging opportunities.

R.33 Where region-wide, integrated strategies for the information society have been developed, taking advantages of all sources of funding, clear links should be made in programming documents so that the full strategy can be appreciated in its wider regional development context thereby allowing an assessment of the contribution of the Structural Funds.

R.34 The Information Society is still a relatively loose concept and one that is constantly evolving both in terms of policies and technologies. Regions should plan ahead and conduct regular monitoring and reviews of the strategy to ensure that it remains consistent with reality and takes account of emerging needs and opportunities.

R.35 Regions should make increased efforts to assess the demand for ICTs, both actual and latent. This means that the development of indicators should go

beyond the collection of data dealing with availability, usage, costs and attitudes.

- R.36 Where regions adopt a horizontal approach to information society programming (either on its own or in combination with a vertical approach), effective implementation arrangements are an absolute necessity to secure appropriate funds to ensure that targets are achieved and ambitions are realised. The appointment of a dedicated information society manager (as in Central Macedonia, Merseyside and Wales) or establishment of an information society unit (as proposed for the Regional Development Agency in Yorkshire & The Humber, UK) should be considered.
- R.37 In the cases of Greece, Portugal and Spain, in which NOPs for the information society have been created, regions need to monitor carefully and on an ongoing basis the impact of these national programmes to ensure as much as possible that information society investments (both national and regional, taken together) reflect the continuously updated needs and opportunities facing the region.
- R.38 There is a need to improve systems of regional data collection and benchmarking so as to better support the planning and programming processes.

7.5.2 Information Society Priorities

- R.39 First and foremost, we recommend that regional information society priorities should be driven by regional demand and regional needs, based on careful research and analysis as well as open and transparent decision-making processes.
- R.40 We suggest to regions in Member States in which there is an NOP for the information society that they should avoid the temptation to maximise their success in securing a share of budgets allocated to national priorities except insofar as these meet clearly identified regional priorities. Good planning and coordination between national and regional authorities should be able to ensure that national and regional priorities could be simultaneously achieved in a manner that is equitable for the regions.
- R.41 The development of broadband access and services, and the emphasis placed on it in the eEurope 2005 Action Plan, may become an increasing factor in achieving regional competitiveness. All regions, but especially those that are sparsely populated or in peripheral locations, should monitor developments to protect themselves against a widening digital divide (both in inter- and intra-regional terms).
- R.42 Whilst recognising a need to manage risk, regions (especially Objective 1 regions) should more readily be willing to adopt innovative approaches to the use of the Structural Funds, constantly seeking ways to adapt to the Knowledge-Based Economy, focusing their investments on the wealth-creating (high GDP-earning, technology-based, high skill, export-earning, etc.) sectors of the future.
- R.43 Most regions need to place greater emphasis on demand stimulation measures. In general, we recommend that regional strategies and programmes should

strike a balance between supply-side support and demand stimulation and that, in turn, supply-side measures should offer a balance in terms of the development of telecommunications infrastructure, access, applications and services, (regional and local) digital content, and ICT skills. However, such decisions should relate directly to the region's circumstances and relative to its competitive position in national, European and global contexts.