



The Structural Funds Facilitating the Information Society

—
with executive summary

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Improving the Quality of Structural Fund
Programming through Exchange of
Experience***

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PREFACE

The research for the following paper was undertaken in preparation for the fourth meeting of Phase II of the Objective 2 exchange of experience network IQ-Net, which took place in Aalborg in North Jutland, Denmark, on 6 – 8 June 2001. The paper has been revised following the seminar.

This paper is a product of desk research and fieldwork visits among national and regional authorities in Member States (notably in member regions of the IQ-Net Consortium) as well as Commission services during the spring of 2001. The field research team comprised:

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1. EXECUTIVE SUMMARY

The Information Society (IS) is a term which has emerged in recent years to describe the increasing ubiquity of information and communication technologies (ICTs). The IS has the potential to effect every level of society and the economy from individual citizens or enterprises to multinational corporations, and is present in policymaking at regional, national and EU levels. As a result, the concept has been given greater attention in economic development policy-making in recent years, not least in many EU policy areas. This paper focuses on the way in which the Information Society has been addressed and incorporated into the new round of Structural Fund programmes. It considers first the wider EU and national policy contexts, providing an overview of the type of IS-related initiatives and strategies which have been emerging. The paper then turns in more detail to the regional level, analysing initially the emergence of regional IS strategies before looking in more detail at the response of the new Structural Fund programmes and the type of IS-relevant policy actions which are emerging. A number of perspectives on the integration and promotion of the IS in the implementation of the Structural Fund programmes is examined in conclusion.

1.1 The Information Society: Policy Influence

The first section of the paper outlines the key stages of EU policy development involving the Information Society. It notes how the EU has placed increasing emphasis on the Information Society over the last decade. Awareness raising initiatives, Action Plans, institutional changes and legislation (e.g. relating to the liberalisation of the telecommunications sector, security and competition) have made the Information Society a key EU policy focus. The Commission's Framework R&D programmes have also gradually adopted a more IS orientation and have contributed explicitly to development in this area. Finally, the current policy focus on the Information Society is reflected in the strategic objectives of the European Commission for the 2000-06 period. The contribution of the Structural Funds to the Information Society has been long-standing, particularly in terms of infrastructural and strategy-building actions and the new 2000-06 programming period is being viewed by the Commission as one where the focus and volume of activity in the area of Information Society should increase significantly.

The Information Society has also become more significant in the policies and strategies of EU Member States - at both national and regional levels. The initial, ad hoc responses to the rise of ICTs, particularly along sectoral lines, are being replaced by attempts to co-ordinate thinking and planning at national level. Many national strategies take the form of pluri-annual documents with a one-year updating process and regular evaluation. Sectoral strategies addressing Information Society issues are also relatively common, particularly in the areas of education/training, e-commerce and e-government.

Integrated, regional IS strategies are less widespread than their national counterparts but they are increasingly common. The rationale for the development of regional level IS strategies is multifaceted. First, the economic development role of regions is becoming more important and, as the experience of regional and local authorities in economic development planning increases, they are more able to react to the groundswell of ICT-related developments. Second, the spatial dimension of new knowledge-based development has been increasingly recognised. The concept of the 'learning region' has emerged which stresses that regions need to be able to adapt to fresh ideas and evolve new organisational patterns – a key concept when applied to the challenge of the Information Society. Regional activity in this area covers a broad spectrum and includes the drafting of dedicated IS strategies, the incorporation of IS issues into development plans and specific strategic targeting of areas of regional IS strength. In some regions, the drivers for such strategic developments have come from within the region itself, drawing on bottom-up responses to the Information Society and integrating them within regional institutional and economic frameworks (e.g. Catalunya). In other cases, the impetus has come externally in the form of the EU-funded Regional Information Society Initiative (RISI) which provides finance for the process of IS strategy formulation (e.g. Steiermark).

1.2 The Information Society in current SPDs

The next section of the paper outlines the prominence of Information Society elements in current SPDs. It considers the influence of the strategic IS context and presents the integration of Information Society issues in the regional analyses on which SPDs are built, in the SPD strategies, and finally, at the most concrete level, in the policy mix as represented by the priorities and measures.

The new Structural Fund programmes have strong links to wider regional strategic plans and initiatives and this is equally true in the case of the Information Society. The way in which the Structural Fund programmes interact with the wider strategic context is varied and can be characterised by three broad responses:

Passive - in which the late introduction of the IS imperative by the Commission and the absence of existing IS initiatives has led to a policy decision to minimise IS content in the SPDs;

Responsive - (which describes the majority of SPD approaches), in which existing IS strategies are integrated into the SPD; and

Catalytic - where the IS imperative has prompted the development of new IS initiatives in the context of the Structural Funds.

The paper's overview of SPDs demonstrates that, as their starting point, relatively few include a detailed or comprehensive analytical treatment of the regional situation as regards IS development. In most SPDs, the Information Society and/or ICTs are not explicit elements of the overall statement of strategic objectives. All programmes have at least one priority with relevance to the IS, and most have more. At measure level relatively few programmes ringfence IS interventions into specific IS measures but there are many programmes where a large proportion of the measures are partially relevant.

In terms of specific types of policy, the paper surveys the variety of options possible under the Structural Funds. The Information Society is commonly viewed as affecting three broad target groups: the private sector; the public sector; and citizens. The main policy areas which appear in the new Structural Fund programmes where IS-related interventions are planned include: the modernisation and extension of ICT infrastructure in certain priority zones (e.g. underdeveloped areas such as Norra Norrland); improving the equipment and resources of the business economic infrastructure (such as through linking business premises with high-level ICT infrastructure, improving the quality and range of ICT services available at key economic sites and premises, and/or increasing the connectivity between economic centres); business development measures aiming to achieve IS-based or assisted development, equity-oriented policies (addressing the 'digital divide'); training at individual and business levels; equal opportunities; sustainable development; and strategic initiatives (e.g. through statistical observatories).

The paper then looks in a more integrated way at the approach to integrating IS themes of three programmes in particular. These case studies provide contrasting examples of the issues discussed in previous sections. The Norra programme takes an essentially broad approach to IS, which, while promoting ICT infrastructure and usage, is driven by 'knowledge society' objectives. It is also being implemented in a national and regional context which is highly IS-oriented. Thus, while there are ICT deficits in the region, it is assumed that IS issues will be integral to many economic development interventions and projects. The case of Niederösterreich is an example of a 'responsive' approach to the IS. The programme drew heavily on a broader regional strategic initiative (the regional innovation strategy) which provided the analytical basis and strategic context for IS inclusion. The focus of the programme is very much on promoting information/knowledge usage and ICT to serve the needs of business development. Lastly, the third case study - Western Scotland - exemplifies aspects of the catalytic role of the Structural Funds with respect to IS. Operating in a 'differentiated' policy framework, the region lacks a unified strategic approach to regional development and the Information Society, and is characterised by a multiplicity of regional and local agencies; in this context, the SPD's approach is to promote IS as a horizontal theme, encouraging all projects to consider the issues of access to, and usage of ICTs.

1.3 Facilitating the Information Society - Current Challenges

The concluding section of the paper addresses four key facets of implementation of IS interventions. First, the process of devising responses to the IS challenge highlights the need to increase programming capacities. Each programme will have to address the question of whether special initiatives are required to equip those involved in Structural Fund programmes with the necessary knowledge and skills to enable the programmes to play their role as IS facilitators. A small number of Structural Fund programmes have already done so, making explicit provision to adapt their decision-making and programme steering structures to respond to the IS dimension.

Second, there is a need for Structural Fund programme actors to actively encourage a more dynamic approach to integrating the IS into projects at an

early stage. The project application and selection stages are crucial in this regard. Publicity for the relevance of the IS theme in projects is one important aspect of this. There is also scope for improving guidance to applicants.

Third, in raising the quality of IS interventions, it is important that the concept does not become a mantra or cure-all. While such 'e-mania' is fashionable at present, simply increasing the supply of ICT infrastructure without changing IS attitudes and capacities is insufficient.

Monitoring and evaluation are particularly relevant here. Developing the IS has become a prominent EU-wide objective to be supported by the Structural Funds, so it will be necessary to be able to identify the contribution programmes have made. An appropriate monitoring framework is required at the start of programming, including quantified baselines and output and impact targets. Identifying the contribution of programmes to the IS will be a new challenge for many and arguably, a new paradigm of economic development and so will demand new evaluation responses. Given the potential importance of this issue, it is recommended that evaluating the impact on the IS should be an explicit part of the evaluation brief.

Lastly, there are clear challenges to programme management. ICTs have powerful contributions to make in increasing the capacity of programmes to store and manipulate information with computerised monitoring systems, streamlining administration and facilitating more effective partnership relations.

The Structural Funds Facilitating the Information Society

1. INTRODUCTION

The 'Information Society' (IS) is a term which has emerged in recent years as a way of describing the rapidly changing social and economic environment. The term encompasses the increasing ubiquity of information, the growing importance of information and communication technologies (ICTs) and the impact of these developments on the way in which economies and societies operate. The potential ramifications are huge:

*"The pervasiveness of IT is not just a question of a few new products or industries but of a technology which affects every industry and every service, their interrelationships and indeed the whole way of life of industrial societies"*¹.

Despite the common direct link to ICTs and their implications, the term Information Society can be understood as a concept much broader than just the technologies themselves:

*"The Information Society is driven by - but is in no way reducible to - the growth and convergence of Information and Communications Technologies (ICT), that is computing, telecommunications and audio-visual technologies. In technical terms ICT allows us to process, store, retrieve and communicate information in a number of different forms regardless of time and space. Because of its radical nature ICT signals the rise of a new techno-economic paradigm which is affecting the design, management and control of production and services throughout the economy"*².

Understood in this broader sense, the Information Society has the potential to affect every level of society and economy from the individual citizen or enterprise to multi-national corporations and policymaking at regional, national and EU levels. The new ICTs and their continued development and application are a fact of life and the Information Society effectively changes the terms of reference within which current and future socio-economic development takes place. The website of DG Info Soc, the Information Society Directorate General of the European Commission, states that:

"Information technologies and communication are bringing about an industrial revolution based on information, on the scale of that which rocked the 19th century...The diffusion of these new technologies at all levels of economic and social life is thus gradually transforming our society into an 'Information Society'".

Defined in these broad terms, the Information Society is a difficult concept to understand and relate clearly to policymaking. It has become a necessary

¹ Morgan, K (1996) *The Information Society – Opportunities for SMEs in Objective 2 Regions*, DG XVI training session, European Commission 23 May 1996, Brussels.

² Morgan K (1996) *op. cit.*

‘buzz word’ but one without a common definition or application. Its wide-ranging coverage means that, while it could be understood as particularly relevant to certain areas of policymaking, it is also germane to every aspect of the public and private sectors. Further, the technologies which underlie the Information Society are continuing to develop very rapidly. Understanding the implications of the Information Society, therefore, and how they apply to the particular scope and responsibilities of government departments and other public authorities is important in harnessing these developments to best possible effect.

This paper focuses on the way in which the Information Society has been addressed and incorporated into the new round of Structural Fund programmes. It reviews first the wider EU and national policy contexts, providing an overview of the type of IS-related initiatives and strategies which have been emerging. The paper then turns in more detail to the regional level, analysing initially the emergence of regional IS strategies before looking in more detail at the response of the new Structural Fund programmes and the type of IS-relevant policy actions which are emerging. A number of perspectives on the integration and promotion of the IS in the implementation of the Structural Fund programmes is examined in conclusion.

2. THE INFORMATION SOCIETY: POLICY INFLUENCE

The Information Society has already significantly influenced policymaking at EU, national and regional levels. It is instructive in illustrating the changing approaches to the incorporation of Information Society issues into socio-economic policy to provide a brief overview of policy evolution.

The following sections outline the key stages of EU policy development followed by a section with a broad overview of national responses.

2.1 The Information Society and the EU

The EU has placed increasing emphasis on the Information Society over the last decade. The European Commission and European Council have undertaken action in several directions as a strategic response:

- sustained, high-level reflection leading to policy development;
- awareness raising;
- legislative developments and institutional changes;
- dedicated initiatives for Information Society including Action Plans; and
- the refocusing of existing instruments, including the Structural Funds and the R&D framework programmes to facilitate the development of IS.

The Information Society has gradually become a key EU policy focus, and this process has been marked by a number of important milestones which are highlighted in Figure 2.1 and elaborated in the text below.

The process of serious reflection was initiated in 1993 with the European Commission White Paper entitled “**Growth, competitiveness and employment: the challenges and courses for entering into the XXIst**

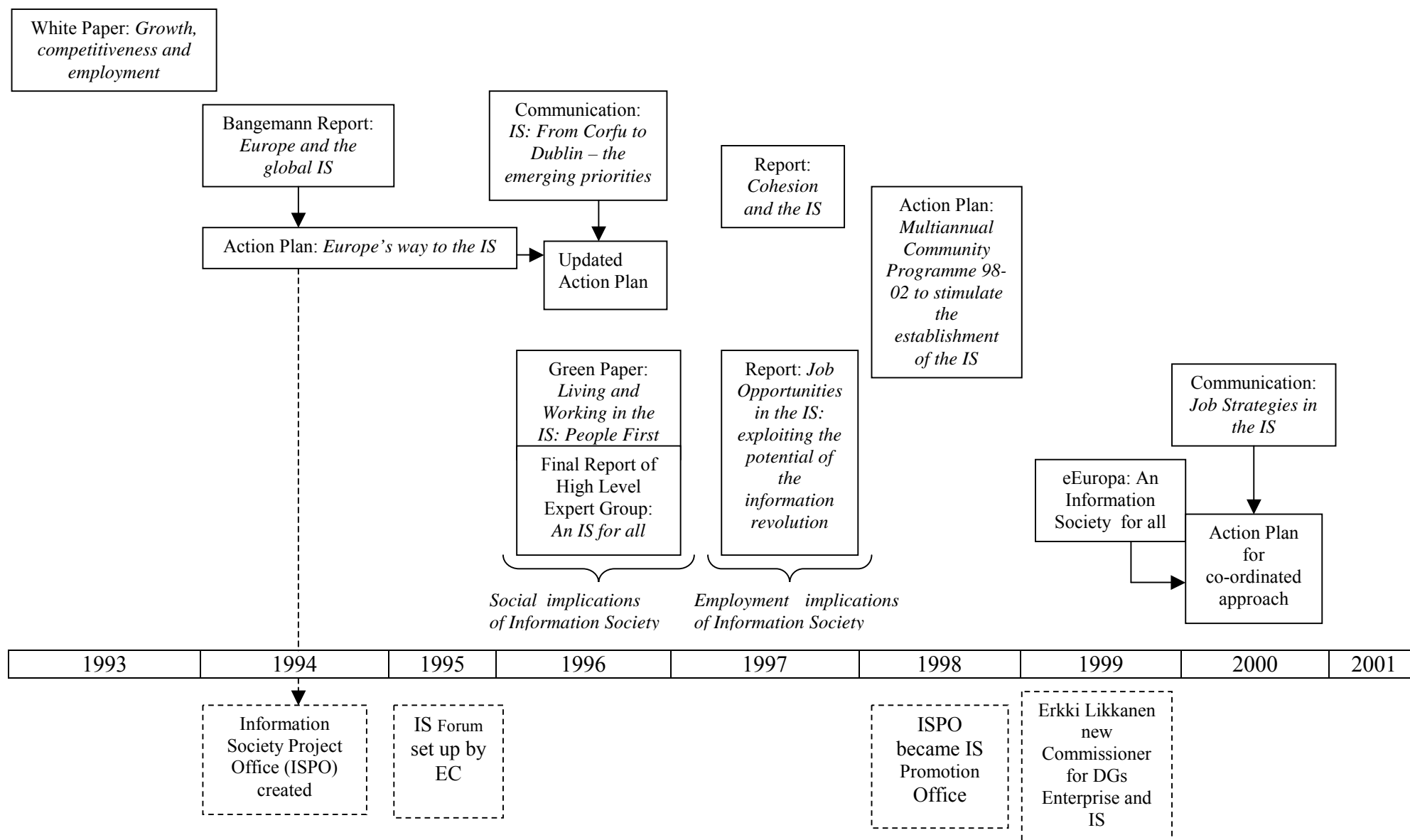
century". This White Paper stressed the urgency of developing a pan-European information infrastructure to revive European economic growth and competitiveness. In December 1993, the Brussels European Council initiated a report by a high-level group of experts to identify concrete measures to implement the Information Society. This led to a landmark report, presented at the Corfu European Council in June 1994, "**Europe and the global Information Society**" (the so-called Bangemann Report).

The Bangemann Report emphasised the urgency of Community action to ensure that European enterprises remained competitive internationally and highlighted the need to accelerate liberalisation while consolidating the universal service. In terms of policy recommendations, the report specified that market mechanisms should be preferred, where possible, to finance information infrastructure (the supply side), while the EU and its Member States should focus their efforts more on stimulating demand. This should involve the creation of a coherent statutory framework and the use of existing sources of public funding, including the Structural Funds, to develop the Information Society. It also emphasised the importance of awareness raising, proposing ten initiatives to demonstrate the feasibility and usefulness of new telematic applications. The conclusions and initiatives of the Bangemann Report represented the start of a shift towards understanding the wider implications of IT and the Information Society, moving away from a focus purely on infrastructure provision towards other, demand-side and exploitation-oriented initiatives.

As a result of the Bangemann Report, the Action Plan "**Europe's way to the Information Society**" was presented on 19th July 1994 (COM (94)347final). Its aim was to provide a general framework within which Information Society actions could be structured and consolidated. Spanning 1994 and 1995, the plan had four lines of action:

- to adapt the statutory and legal framework, including the liberalisation of infrastructure;
- to encourage initiatives in the field of Trans-European networks, services, applications and content, including optimising the Structural Fund contribution and encouraging private sector, Member State, regional and city initiatives, particularly through the creation and work of the 'Information Society Project Office' (ISPO);
- to assess the impact of the Information Society in private, professional and public life and to advise the Commission on implementation measures; and
- to promote the Information Society to the general public and to targeted groups, explaining the Information Society, its opportunities and risks.

Figure 2.1: Key Developments in the EU Information Society Policy Framework



A second phase was launched in 1996 when the Action Plan was updated and revised with the adoption of the Communication: **“Information Society: From Corfu to Dublin - The new emerging priorities”** (COM(96)395 final of 24 July 1996) which emphasised four policy lines of equal priority: improving the business environment; investing in the future; people at the centre; and meeting the global challenge.

At this point, it was also clear that the IS would have marked and uneven social consequences. The EC adopted a Green Paper in July 1996 on **“Living and Working in the Information Society: People First”** (COM(96)389 final), highlighting these key social challenges. The Final Report by the High Level Group of Experts on the Information Society **“Building a European Information Society for us all”** advocated a socially inclusive IS and proposed a broad policy framework to help build it. This theme was continued with the report **“Cohesion and the Information Society”** (COM(97)7) in 1997 while the November 1997 Luxembourg European Council on Employment also asked the Commission to assess the employment implications of the Information Society transformation. This led to the report: **“Job Opportunities in the Information Society: Exploiting the Potential of the Information Revolution”** (COM(98)590 final).

A further Action Plan was launched in 1998, with the adoption of the **Multiannual Community Programme (1998-2002) to stimulate the establishment of the Information Society in Europe** (Council Decision 98/253/EC of 30 March 1998; Official Journal L107 of 07/04/1998).

The high-profile **“eEurope - An Information Society for All”** initiative was launched in December 1999, aiming to accelerate Europe’s transformation to an Information Society. This was supported by an **Action Plan**, prepared for the Santa Maria da Faria European Council in June 2000 and linked to the EC Communication of January 2000 entitled **“Job Strategies in the Information Society”**. Among the key themes, the plan argued that any response to the IS challenge - at EC level and at Member State level and below – should be co-ordinated and comprehensive, not *ad hoc* and fragmented. It noted increasing activity in terms of the generation and/or extension and improvement of IS strategies by Member State governments, and proposed actions clustered around three main objectives:

- *a cheaper, faster and secure Internet*: cheaper and faster Internet access; faster Internet for researchers and students; and, secure networks and smart cards;
- *investing in people and skills*: European youth into the digital age; working in the knowledge-based economy; participation for all in the knowledge-based economy; and
- *stimulate the use of the Internet*: accelerating e-commerce; government online; health online; European digital content for global networks; and intelligent transport systems.

The main methods for achieving the targets of e-Europe were to be achieved by accelerating the creation of an appropriate legal environment, supporting new infrastructure and services, and applying co-ordination and benchmarking measures.

As implied by the content of some of the initiatives above, institutional change was also taking place over the same period to gear up to the new challenges, and relevant legislation was being elaborated (eg. relating to liberalisation of the telecommunications sector, security, competition). This is summarised in Table 2.1 below.

Table 2.1: Regulations, legislation and institutional change

Event/Action	Detail
December 1994: The Information Society Project Office (ISPO) set up.	Part of the Commission's Action Plan on Europe's way to the Information Society, a concrete measure conceived to support, promote and orient private and public actions in the field of the Information Society.
February 1995: Establishment by the EC of the Information Society Forum .	Aim of creating a new and authoritative source of reflection, debate and advice on the challenges of the Information Society.
November 1998: ISPO became the Information Society <i>Promotion</i> Office.	Main activities include: One stop shop provision of information services through electronic and traditional media; Information Society awareness and promotion actions; inventories of Information Society projects and actions; best practices identification and brokerage and promotion of networking between European IS actors.
September 1999: Erkki Liikanen became the new Commissioner for the Directorates General "Enterprise" and "Information Society".	
1999: COM(99)539final "Towards a new framework for Electronic Communications infrastructure and associated services - The 1999 Communications Review".	Review of recent developments in the EU electronic communications service market and proposals for future regulatory measures.
2000 EC proposes regulatory framework for radio policy in the EU. Package of legislative proposals to strengthen competition in the EU electronic communications market.	

Source: EC ISPO website http://europa.eu.int/ISPO/basics/i_history.html

The European Commission's Framework R&D programmes have also gradually adopted a more IS orientation and have contributed increasingly explicitly to development in this area (see Table 2.2).

Table 2.2: R&D Initiatives

Event/Action	Further Detail
Pre-1994: Several major research & development programmes on information technologies, preparing the way to the Information Society.	Included ESPRIT, RACE and the ACTS programme and the first three programmes on telematic applications AIM (health care), DRIVE (road transport) and DELTA (distance learning).
Fourth RTD framework programme 1994-1998	Included several relevant programmes: ACTS Programme (telecommunications) Esprit Programme (information technologies) Telematics Applications Programme (applied research).
1998 Fifth Framework Programme (FP5) for	Brought together and extended the ACTS, Esprit and

1998-2002 includes the Information Society Technologies (IST) Programme.	Telematics Applications programmes to provide a single integrated programme reflecting the convergence of information processing, communications and media. The Programme is managed by DG Information Society of the European Commission. The budget proposed for 1998-2002 is €3.6 billion.
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Source: EC Information Society Promotion Office site, http://europa.eu.int/ISPO/basics/i_history.html

These various strands of development have resulted in three key areas of IS action by the European Commission, as summarised in the box below. The main contribution of the Structural Funds is made under the first category.

MAIN CURRENT COMMUNITY POLICIES SUPPORTING THE INFORMATION SOCIETY

- **Supporting Europe to enter the digital era:** to accelerate the development of the Information Society in Europe to stimulate the creation of new services and economic activities. The objective is to promote competition and job creation. There are three key initiatives: eEurope - An Information Society for All; eContent - Digital content for global networks; and the creation of the EU Internet top-level domain.
- **Promoting increased competition in communication services in Europe** by: revising the regulatory framework for liberalisation of communication services, monitoring the execution of the regulatory framework in practice, and supporting the liberalisation process and the development of new services at global level.
- **Strengthening research and technical development (RTD) potential** in the area of Information Society technologies in Europe, by: executing the specific RTD programme "Information Society Technologies".

Finally, the current policy focus on the Information Society is reflected in the strategic objectives of the European Commission for the 2000-05 period. These include the following priority for co-ordinated action:

*"To create a new economic dynamism by economic reform in the labour, employment and capital markets aimed at stimulating innovation and entrepreneurship. This reform will be enhanced by a rigorous application of competition rules and by further progress in the co-ordination of tax policy. **The transition to an Information Society should be given the same political energy and attention as that devoted to the launch of the single market and the single currency. The forthcoming special European Council in Lisbon should provide impetus for reforms needed**".³*

This priority is based on the need to create a new economic and social agenda, required to build "a competitive and inclusive knowledge-based economy

³ CEC (2000) *Shaping the New Europe: Strategic Objectives 2000-2005*, Communication from the European Commission to the European Parliament, Council, Economic and Social Committee and Committee of the Regions, COM (2000) 154 final, February 2000.

which promotes strong and sustained growth, full employment and social cohesion”⁴.

2.1.1 Structural Fund contribution to the Information Society

The contribution of the Structural Funds to the Information Society has been long-standing, particularly in terms of infrastructural and strategy-building actions. The following three examples illustrate the type of role played by the Funds to date.

- **Investment in infrastructure under STAR and TELEMATIQUE.** STAR, the Special Telecommunications Action for Regional Development, provided 780 mecu of ERDF funding between 1987 and 1991 to accelerate levels of advanced telecommunications infrastructure investment in seven Member States. It was predominantly focused on supply measures (improving infrastructure, including network digitalisation, public data networks and cellular mobile radio), and was superseded by the TELEMATIQUE programme.
- **Investment in strategy building.** A first initiative was the 1994 Interregional Information Society Initiative (IRISI), involving six regions and supported by DG XIII (Telecommunications) and DG XVI (Regional Policy and Cohesion). This was then extended in the form of the Regional Information Society Initiative (RISI), which was launched in late 1997 (see section 2.3.2). The initiative focused on strategy building, with no additional resources for implementation, although regions could apply for RISI+ support which provided finance for more implementation-oriented activity. The initiative has been evaluated, providing useful lessons for strategy building in this complex area.
- **Other actions.** Selected 1997-99 Objective 2 programmes already included an explicit Information Society dimension, eg. in the UK (North East England, West Cumbria and Furness, Industrial South Wales, Yorkshire and Humberside, East Midlands, Greater Manchester), Italy (Marche, Piemonte, Toscana) and France (Aquitaine, Champagne-Ardenne, Languedoc-Roussillon, Picardie, Bretagne).

The new 2000-06 programming period is being viewed by the European Commission as one where the focus and volume of activity in the area of Information Society should increase significantly. This has both an economic development and political context. In the view of the EC, economic development which fails to take into account the potential contribution of ICTs, and the implications of the Information Society more generally, is failing to respond to a fundamental dimension of the future economy. From a political viewpoint, the Structural Fund programmes are regarded by the EC as a key financial resource to take forward the high-profile Information Society ambitions, including as expressed in the *e-Europe* initiative. Combined with the personal interest of Michel Barnier, this means that there will probably be a sustained push to ensure that Structural Fund programmes are active in this area.

⁴ CEC (2000) *op. cit.*

In order to influence the content of programmes, DG Regio supplemented the range of policy papers already available with guidance on how new Structural Fund programmes would be assessed for their Information Society content.⁵ To galvanise the status of the issue as a high priority, it also ran a conference in Lyon in December 2000, entitled ‘The Information Society and Economic, Territorial and Social Cohesion’.⁶ The conference focused on the digital divide and the current unequal access across European regions to new technologies and their opportunities and the role of the Structural Funds in overcoming these disadvantages. The themes of the conference included identifying good practice, exchange of experience, examining the criteria for investment in telecommunications infrastructure, and facilitating the transition of SMEs and administrations to the Information Society.

It appears that the Information Society became a high priority for the 2000-06 Structural Fund programmes relatively late, increasing the challenge for those designing programmes. Michel Barnier came into post in September 1999, and quickly took up the issue as a key strand of his Structural Fund mission,⁷ reportedly in dialogue with Erkki Liikanen, Commissioner for Enterprise and Information Society. However, most Structural Fund regions had already begun the preparations for the new programming period in 1998 and many had circulated first drafts to the partnership by the summer of 1999. The nature of the subsequent response to the IS issue and the way in which it has been incorporated into the new Structural Fund programmes is covered in more detail in section 3.

2.2 The Information Society and the Member States

In parallel with the increasing IS focus of EU policy-making, the Information Society has also become more significant in the policies and strategies of EU Member States - at both national and regional levels. While the EU activity has had some influence on trends, the need to respond to the changes introduced by ICTs and the momentum of the Information Society agenda has independently influenced Member State policies.

The national and regional policy context for Information Society provides an important background for understanding the IS orientation of the new Structural Fund programmes. The following brief overview is not comprehensive, but it illustrates the main trends and directions of Information Society related policy and the actors involved. The national material draws strongly from the ISPO publication *Public Strategies for the Information Society in the Member States of the European Union*, published in September 2000. The regional focus expands on this information, drawing primarily from the experience of IQ-Net regions.

⁵ Technical Paper 2 - <http://www.inforegio.cec.eu.int/wbdoc/docoffic/working/doc/REV-en.pdf>.

⁶ For further details see: http://www.inforegio.cec.eu.int/wbnews/new_en.htm and http://www.inforegio.cec.eu.int/wbdoc/docconf/conf_en.htm.

⁷ The theme was not a prominent feature in his initial mission statement in October 1999 (Barnier M (1999) ‘A Regional Policy which is both effective and meaningful to Europe’s citizens’, *Inforegio Newsletter* 68, DG Regio, Commission of the European Communities, Brussels), but was already significant, for example, in an article he wrote for the French press in March 2000 (Barnier M (2000) *La nouvelle économie pour tous*, *Les Échos*, 15 March 2000).

2.2.1 National IS public strategies

The Information Society started to have an explicit expression in national public strategies and policies from around 1994 onwards, with Member States such as the Netherlands, Denmark and Finland taking an early lead. As the concept of the Information Society became more widespread, the type of public initiative moved from White Papers and ‘frameworks for discussion’, towards more concrete strategies and action plans.

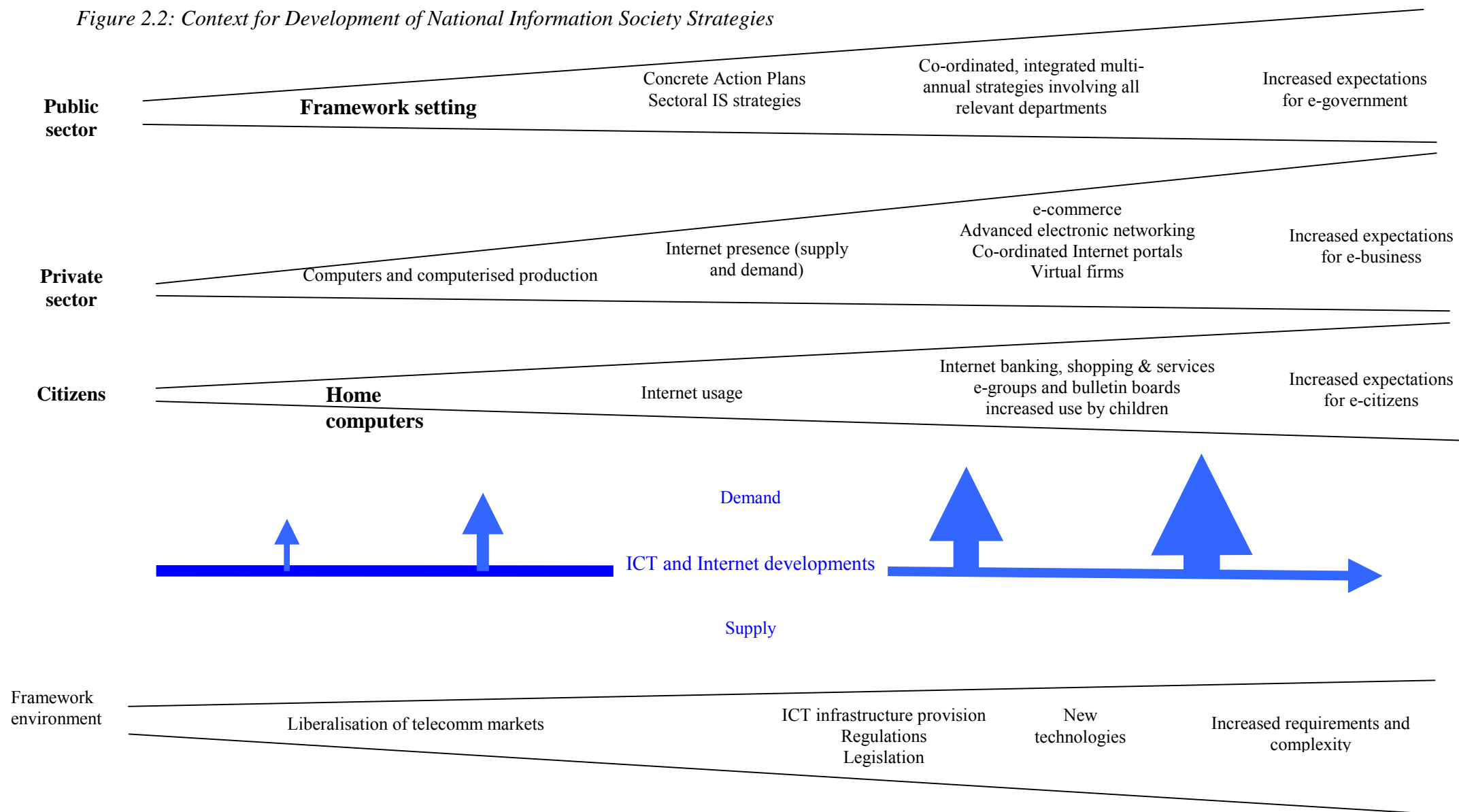
The nature and content of national Information Society strategies are clearly influenced by a wide range of different factors. These include the way in which the Information Society and ICTs have spread and influenced individual citizens as well as private sector activity, the regulatory framework environment for the newly developing technologies, and the specific constitutional, institutional and policy contexts of individual Member States (as illustrated in Figure 2.2). However, there are some general features that stand out. Many national strategies take the form of pluri-annual documents with a one-year updating process and regular evaluation – also a reflection of the rapid pace of underlying technological change affecting Information Society issues. Sectoral strategies addressing Information Society issues are also relatively common, particularly in the areas of education/training, e-commerce and e-government.

Some national public strategies have dedicated budgets and quantifiable targets while others still represent more of a framework for action, with defined measures but few actual implementation deadlines. Specified funding also comes in some cases not directly from an Information Society budget but through commitments of other budget lines or EU initiatives such as the Structural Fund programmes.

The ISPO report also outlines a number of key points concerning national strategies which illustrate some of the main emerging trends.

- **High priority area.** The Information Society is viewed universally as an area of high priority and activity in this area has accelerated appreciably in the last 2-3 years. National action plans and strategies exist almost universally and their development has, in many cases, been at least accelerated by the e-Europe initiative.
- **Greater integration and on coordination.** This reflects the growing perception that ICTs impact on the organisation and functioning of society and therefore are relevant to all areas of public policymaking. The initial, *ad hoc* responses to the rise of ICTs, particularly along sectoral lines, are being replaced by attempts to co-ordinate thinking and planning at national level. In Spain, for example, a key recent change has been the shift in emphasis since 1998 from individual ministerial programmes towards a more co-ordinated and integrated approach which resulted in the launch, in January 2000, of an Information Society strategy *Info XXI – An Information Society for All*.

Figure 2.2: Context for Development of National Information Society Strategies



- ***High level of resource commitment in supporting and targeting IS development.*** This is evident in a range of areas relevant to the Information Society including IT infrastructure development, awareness raising, regulatory activity, training and education and e-commerce. The trend is likely to continue in the short- to medium-term. The groundswell of momentum towards the Information Society and the use of ICTs are fuelled by the independent involvement of business, citizens and organisations. Public authorities view themselves as having various roles, including:
 - providing a strong national IT base in both hardware and software;
 - creating a suitable regulatory and institutional environment for an information age, including security aspects;
 - counteracting market distortions in the provision of infrastructure;
 - supporting groups disadvantaged in terms of their access or use of new ICT related opportunities; and
 - improving the efficiency and quality of public service delivery through the use of ICT.
- ***Increased focus on cohesion and societal issues.*** Regulatory and infrastructure issues remain important, but wider concerns are now emerging in many of the public IS strategies. Emerging concepts include competence and skills, confidence, quality of life, modernisation and accessibility. The Swedish *Information Society for All* Bill of April 2000, for example, is built on three main areas of priority: IT confidence; IT accessibility; and IT competence. Areas of profile include:
 - education and training, including equipping and connecting schools, training teachers and developing educational tools, and promoting life-long learning and new learning processes, including distance learning;
 - combating ICT skills gap through activities such as vocational training and adult learning programmes, conversion courses and co-operation initiatives between universities and business; and
 - cohesion activities to address the problem of geographical areas or groups of people who are disadvantaged in terms of their access to or use of new ICTs.
- ***Protection of citizens' rights.*** This is emerging as a central concern of many public strategies and raises a broad range of regulatory and legislative issues such as protection of information, consumer and intellectual property rights, security in electronic transactions, labour and insurance legislation for teleworking, and protection and legal aspects of Internet use.
- ***E-commerce.*** This is a central component of the business and competitiveness aspect of Information Society strategies. Emphasis is commonly placed on the regulation to foster confidence and security, as well as initiatives to support e-business development among SMEs, risk capital provision and encouraging electronic commerce between business and public sector administrations.

- **E-government.** The notion that the public administration itself should lead the way in exploiting and benefiting from ICT opportunities is reflected in the focus on e-government. The majority of governments and public agencies are now present on the Internet and the number of single government portals is increasing (eg. overheid.nl, open.gov.uk, help.gv.at, danmark.dk, Infocid.pt, sverigedirekt.se). Other emphases under the e-government banner include improved electronic customer orientation and services and better networking between government departments.
- **Green IT policy and e-democracy.** These trends are emerging in the more advanced Member States, looking at the use of IT in promoting sustainable development (in an ecological and broader sense) as well as encouraging e-democracy through electronic voting systems, discussion fora with politicians and public servants etc.

The key organisations involved in the formulation and promotion of Information Society strategies varies by country. In some Member States, a central organisation co-ordinates activities or drives the process to some degree eg. the IT Commission in Sweden, a two-member committee in Denmark, SITRA in Finland or the Mission for Information Society in Portugal. Other types of specific group include: national consultative groups comprising the public and private sector; advisory bodies; inter-ministerial committees; public steering committees; high-level expert groups or Observatories; co-ordination centres and discussion platforms.

Ministerial responsibility for IT and Information Society issues reflects the complexity of the issue. The focus tends to be on ministries involved with economic development, telecommunications or research/technology. In some Member States, the prime minister, Cabinet Office or Council of State have a leading role (eg. France, Italy, UK, Greece, Ireland, Belgium), often involving the creation of task forces. The UK and Italy have also created e-Ministers or Ministers for Internet, and specific responsibilities for this area are designated within sectoral Ministries.

2.3 The Information Society and the regions

Integrated, regional IS strategies are less widespread than their national counterparts,⁸ but they are now increasingly emerging. Regional activity covers a broad spectrum and includes dedicated Information Society strategies, the incorporation of Information Society issues in development plans and strategic targeting of areas of regional IS strength. Table 2.3 illustrates the range of activity and strategic output evident in IQ-Net regions.

The rationale for the development of regional level IS strategies is multifaceted. First, the economic development role of regions is becoming more important, including in traditionally unitary countries. As the experience of regional and local authorities in economic development planning increases, they are more able to react to the groundswell of ICT-related developments and apply the challenges and opportunities to their own regional contexts.

⁸ Leygues J-C (2000) *Les Interventions des Fonds Structurels pour promouvoir la société de l'information*, Paper presented at 'Information Society and economic, social and territorial cohesion 2000-2006: a new opportunity, Lyon, December 2000.

Second, the spatial dimension of new knowledge-based development has been increasingly recognised over the past decade. Broad concepts of the ‘learning region’ have emerged⁹ which were initially applied to the support and stimulation of RTD activities and understanding the process of innovation. This provides an important stepping stone to the current debates on the more inclusive concept of the Information Society. One of the key ideas of the learning region concept is that regions need to be able to ‘learn’ ie. to adapt to fresh ideas and evolve new organisational patterns – a key concept when applied to the challenge of the Information Society and the underlying rapidly changing technologies. The European Commission’s Green Paper *Living and Working in the Information Society: People First* talks about stimulating the ‘capacity for anticipation’ among firms. This notion could also be applied in the regional development context in line with the potential for regions to exploit and harness the opportunities of the Information Society for future development.

Table 2.3: Examples of regional strategic context for IS

Programme	Regional strategic context for IS
Au: Niederösterreich	RIS (Regional Innovation Strategy) and RIS+ strategies covering whole <i>Land</i> have been influential for parts of Objective 2 strategy. Also general IS framework for <i>Land</i> as a whole covering areas such as public administration, health and education, the economy, and the citizen.
Au: Steiermark	RISI strategy (@telekis) covering whole <i>Land</i> - direct link to new Objective 2 programme which viewed as key funding mechanism
Be: Meuse-Vesdre	RISI strategy for part of the eligible area (FASIL). The development strategy for Wallonia.
Be: Rural Wallonia	The development strategy for Wallonia.
De: Bremen	RISI strategy (BRISE). TIME – <i>Land</i> -wide IS strategic initiative.
De: Nordrhein-Westfalen	Media NRW – focused on development and diffusion of multi-media technologies and services.
Dk: Nordjylland (a sub-programme of the national Objective 2 SPD)	ICT Programme initiated in 1999 covering whole county. In addition, the county is the subject of a high-profile national regional initiative Digital North Jutland.
Finland: West	Information Society Strategy of the West Finland Alliance
It: Lombardia	IS is one of the core issues of the region’s new Regional Development Plan for 2000-06. An IS Action Plan will help to deliver IS elements of the RDP.
It: Toscana	The ‘Regional Government Programme for 2000-05’ for the first time has a chapter setting goals for the further development of IS (taking forward e-Europe).
Sw: Norra Norrland	Strongly related to its Regional Growth Agreement, which contains a clear IT focus.
Sw: Norra	Strongly related to its Regional Growth Agreement, which contains a clear IT focus.

⁹ See Downes, R and Rooney, M L (1998) *Thinking Strategically: RTD and the Objective 2 Programmes*, IQ-Net Thematic Paper 4(3), European Policies Research Centre, Glasgow.

Sp: Catalunya	Ambitious Catalan strategy, 'Catalunya en xarxa 1999-2003', developed in partnership between regional and local government by a department of the Generalitat and involving wide consultation.
UK: East Wales	The approach to IS is based on the Wales Information Society (WIS) Strategy and Action Plan, prepared as part of the EC's RISI.
UK: Western Scotland	No dedicated regional strategy, although various documents have a bearing, including the Western Scotland Regional Innovation Strategy.
UK: East Midlands	Developing the IS is a major priority for the East Midlands Regional Economic Strategy, where "an Information and Communications Technology revolution" is one of five strategic priorities to be applied to every aspect of business and working life.
UK: North West England	The region participated in IRISI-NW, which provided a framework for the Structural Fund programme's approach to IS.

"In a knowledge society, each distinct region's dynamism becomes important. The decisive factor will be the way in which a town, municipality, county or a region encompassing parts of different countries can create the 'good society' which develops in cooperation between the public sector, the education sector and industry".¹⁰

An IS or ICT strategy is considered to have a range of benefits. These include the identification and promotion of distinct regional or local comparative advantage, gaining a degree of control over the local information economy and combating disparities in social and spatial equality of access.¹¹

The perception that this spatial dimension was not being adequately addressed at national level prompted some initial action from sub-national authorities in responding to IS issues. Commenting on the UK position in the mid-1990s, for example, it has been stated that:

"ICT investment decisions and policy making have occurred in the UK at the national level, with little urban or regional component. This lack of any nationally co-ordinated policy to assess the spatial implications of ICTs have been important factors in encouraging local administrations to attempt to intervene positively in their own local economies, as a component part of their local economic development strategies".¹²

That having been said, the spatial implications of the Information Society are now increasingly recognised. A recent UK initiative by the Department of Trade and Industry¹³, for example, researched the regional uptake, use and understanding of ICTs, including an identification of key drivers for ICT usage in the regions (see box).

¹⁰ Swedish IT Commission (1997) *Sweden Enters the Information Society*, Government Official Reports 1997:63, Ministry of Transport and Communications, Stockholm.

¹¹ Gibbs, D and Tanner, K (1997) Information and Communication Technologies and Local Economic Development Policies: The British Case, *Regional Studies*, Vol. 31:8, pp 765-774.

¹² Gibbs and Tanner (1997) *op. cit.*

¹³ Department of Trade and Industry (1999) *Moving into the Information Age 1999 – DTI Regional Benchmarking Study*, DTI, London.

These developments have resulted in a greater interest among regional authorities in the role of the Information Society in the economic development of their territories. In an increasing number of cases, this has led to the formulation and application of dedicated IS strategies. In some regions, the drivers for such strategic developments have come from within the region itself, drawing on bottom-up responses to the Information Society and integrating them within regional institutional and economic frameworks. In other cases, the impetus has come externally in the form of the EU-funded RISI initiative which provides finance for the process of IS strategy formulation. Regional experiences and lessons with IS strategy development of both types are outlined in the sections below.

KEY DRIVERS FOR ICT USAGE IN REGIONS

The report *Moving in the Information Age* by the UK Department of Trade and Industry documented research into the regional uptake, use and understanding of ICTs. The report highlighted considerable regional variation in access to, and use of, the Internet as well as the connectivity deficits among smaller and micro-businesses. The report, which was extensively used in the regional analysis of IS issues in the new Objective 2 programmes, identified a series of key drivers for ICT usage in the regions.

- *Regional economic environment*: regional wealth is one of the most important determinants of advanced ICT usage.
- *Proximity to markets*: companies in areas close to a large urban conurbation tend to be more advanced but there are notable exceptions suggesting other factors are more important.
- *Company size structure*: size of company is one of the most important drivers of ICT uptake. Regions with only a limited number of large companies tend to under perform. Companies with multiple sites tend to be more advanced users of ICTs. International sites in particular are important.
- *Regional industry sectors*: regions with larger service-based companies are more advanced in their usage and the Sectoral study also suggests that the presence of industries with strong supply chain relationships is also important.
- *Regional attitudes to ICTs*: companies who clearly understand the impact of ICTs on their competitiveness are most likely to use ICTs in advanced ways but high levels of enthusiasm for ICTs does not necessarily mean advanced usage.
- *Access to skills*: advanced ICT users are frequently least confident of staff ICT skills. Availability of staff with adequate ICT skills is an issue for companies throughout the UK, though less so for London.
- *Access to communications infrastructure*: this does not appear to be a significant barrier to uptake in any particular geographic area as the UK's infrastructure is well developed.
- *Strong supply industries and access to capital*: venture capital investment is still strongly focused on the developed ICT markets of the South although a number of local initiatives to create technology clusters are being initiated.
- *Government initiatives*: government initiatives are less important in developed markets than in those that are under-performing. For the majority, ICT awareness does not come directly from Government sources. Government practice does influence uptake of e-mail and EDI, particularly in Northern Ireland. While users of Government support agencies are generally positive about the advice received, it does not always lead to change in the way ICTs are used in business.

2.3.1 Regionally-initiated IS strategies

A bottom-up, strategic response to the challenges of the Information Society has been developed by a number of regions (see Table 2.3 above). These range from an overall assessment of the implications of the Information Society for public sector activities in the region to more targeted and forward-looking strategies for ICT and Information Society developments. In some cases, they have been developed in line with, or as part of, a national initiative. In Italy, for example, regional IS strategies have been developed in line with the National Action Plan which will be implemented through regional development channels including the Structural Fund programmes. Information Society issues are also gaining a higher profile in wider regional planning activities eg. the regional growth agreements in Sweden and the regional economic strategies in England.

These regional strategies form an important context for the Information Society components of the new Objective 2 programmes (see section 3.1), and the process of their development has influenced policymaker thinking. Bremen provides an interesting example of how various different strategic initiatives have contributed to the IS orientation of the new Structural Fund programme. The overall framework is provided by a *Land*-wide IS strategy called TIME which aims to develop the *Land* on the basis of its IS-related strengths and create a new regional image. The strategy does not include a list of specific projects but rather focuses on three thematic priorities: a qualifications offensive; strengthening the regional potential; and expanding the necessary infrastructure. Actions under each of these areas are elaborated by a series of aims and measures, some of which are supported through the Objective 2 programme. In addition to this *Land*-wide strategy, a series of smaller *Land* initiatives have also influenced the IS content of the SPD. The activities of the Senate for Economy and Ports are particularly notable, including the BRISE RISE and the Multi-media and Information and Communications initiative.

North Jutland illustrates a case where regional, national and EU initiatives in the Information Society area have become increasingly dovetailed. In 1999, an *ICT Programme* was introduced for the region with the aim of instigating networking and research in this area in the region over a two-year period. This regional initiative is sponsored by a range of economic development, governmental and training organisations and led through a regional steering committee. *Digital North Jutland* is a central government initiative which has designated the North Jutland region as a 'lighthouse', building on the strengths of the telecommunications cluster and IT strengths of Aalborg University. This national funding from the Ministry of Research and IT will co-fund projects over the 2000-03 period in four main areas: infrastructure, competence, economic development and public sector efficiency.

The new Objective 2 programme has tapped into this regional and national context. Previous Structural Fund programmes have supported developments in the telecommunications sector, contributing to its strength and subsequent designation as a 'lighthouse' under the national programme. For the new programme, the increased experience among policy-makers and social partners

with IS issues means not only that this theme is mainstreamed into Structural Fund projects but also that a mutually supportive division of labour between the new programme and the wider initiatives is possible. The competence building and networking focus of the regional ICT programme can also be supported through the ESF component of the new Objective 2 programme and, as the ICT programme draws to a close, the strategic goals can be carried on through the Structural Fund programme. In the Digital North Jutland programme, a division of labour and co-funding is envisaged where overlap and duplication could be a possibility.

Cataluña is an interesting example of region where considerable regional activity has occurred in the development and promotion of an IS strategy but where this has consciously not been incorporated into the Structural Fund framework. The region has undertaken an ambitious process of integrated IS development, creating an IS Commissioner in mid-1998 to promote activities and initiatives in this field. A regional law sets out the duties of this department, in charge of promoting IS in Catalan society, the government, the economy and public services. A distinctive feature of the department is that it works with a limited budget of its own, acting as a catalyst for other departments and organisations to act – in effect, an attempt at genuine mainstreaming. Its own limited budget is used to support those actions considered most likely to initiate wider processes of engagement and development eg. Internet access to schools. Steering structures have also been established in the region – for example, a bi-annual meeting is held at the political level, involving representatives of the 15 departments of the Catalan government, to assess the development of the Information Society.

A strategic plan ‘Catalonia on the Network’ (‘Catalunya en xarxa’) was prepared in April 1999 following a broad consultation (see box). The strategy is considered to have several strengths.

- it is the only IS strategy in Spain to be built on a partnership with local government and engaging more actors in a coordinated process;
- it is designed as a catalyst and its delivery depends on the budgets of organisations committed to take identified actions forward rather than a strong own budget; and
- it is structured in stages and is not rigid, introducing a flexibility in a field which is characterised by rapid change.

‘CATALUNYA EN XARXA’ – CATALUÑA IS STRATEGY

The four-year strategy is an initiative led by the regional government, and the Department of Universities, Research and Information Society in particular, working in partnership with the local government association. The approach to the strategy is similar to that of the RISI process and the accent has been on maximising the participation of influential decision-makers from all relevant sectors. This has extended to the private sector eg. including representatives of the leading banks, either in terms of size or in their degree of dynamism in using ICTs.

Around 250 people were involved in the process of strategy development, divided into seven thematic groups:

- Framework for Information Society
- Infrastructures and basic services
- Industry, commerce and content
- Education and training
- Administration and services for citizens
- Health care and quality of life
- Society and cultural change

Each thematic group met three times and this led to the identification of concrete priorities. Each meeting was attended by the Director of the IS Observatory who worked to summarise the debate. The process was effective and resulted in a clear and supported strategy which is divided into the seven themes and outlines the priorities, the actions to address them and the agencies to take these forward.

The IS strategy is supported by a monitoring committee comprising six actors internal to the government and six external actors (eg. chambers of commerce, media representatives). Progress reports are presented not only to the regional government, but also to the Catalan parliament.

Despite this strong regional IS strategy and higher policy-maker awareness of Information Society issues, the visibility of this area in the Cataluña Objective 2 programme is relatively limited. This is a conscious decision – the use of the new programme to co-finance many IS interventions was deliberately avoided because of the complex rules and tight time limits associated with drawing on Structural Fund finance. Straightforward actions were considered more suitable for Structural Fund programmes as they are easier to implement successfully within a set time period. Further, IS projects are often small and numerous, again considered less suitable to the administrative demands of Structural Fund co-finance.

2.3.2 *RISI*

The RISI initiative is rooted originally in an earlier EU-funded measure entitled IRISI (Interregional Information Society Initiative) which linked a number of less-favoured regions and supported the development of a strategy to try and exploit the new opportunities of the Information Society for regional development in these areas. Subsequent evaluations of IRISI pointed to the

fact that the Information Society must respond to local territorial conditions if it is to provide all the benefits of which it is capable¹⁴. Based on the IRISI experience, the RISI was launched in 1997 with a total budget of 20 million ecu, jointly supported by DG XVI (Regional Policy and Cohesion), DG V (Employment, Industrial Relations and Social Affairs) and DG XII (Telecommunications, Information Market and Research Exploitation). The RISI was financed through Article 10 of the ERDF and Article 6 of the ESF.

There were two action lines under RISI. One provided support for multi-regional initiatives focused on demonstrating best practice in the use of ICT in key sectors such as tourism, telemedicine and teleworking, public administration and business services, education and training and SMEs. The second, and of greater relevance in this context, had the overall aim of integrating the concept of the Information Society into regional economic development and employment policies. It had the following key objectives:

- to develop consensus and partnership amongst key regional players around a regional Information Society strategy outlining how to face challenges and profit from opportunities presented by the Information Society in a regional context; and
- to promote the commitment and co-operation of key regional actors in developing a Regional Action Plan which would contribute strongly to economic development and include an assessment of the feasibility of key measures.

There were 22 pilot projects under this action line across the EU generating Information Society strategies and action plans for their respective regions (see Table 2.4).

Table 2.4: EU RISI (single region) projects

Project	Region	Member State
@telekis	Styria	Austria
FASIL	Liege	Belgium
NOKIS	North Karelia	Finland
Paraddis	West Finland	Finland
ACTI	Limousin	France
SERISE	Poitou-Charentes	France
Teleparc	Midi-Pyrenees	France
BIS 2006	Brandenburg	Germany
BRISE	Land Bremen	Germany
InfoSH	Schleswig-Holstein	Germany
ATHINA	Attica	Greece
RISE	Epirus	Greece
ShiPP	Shannon	Ireland
STRAND	South West Ireland	Ireland
ARIANNA	Calabria	Spain

¹⁴ Dabinett, G (2001) EU Mainstreaming of the Information Society in Regional Development Policy, *Regional Studies*, Vol. 35(2), April 2001.

INFODEX	Extramadura	Spain
Ac-direkt	Vasterbotten	Sweden
IT-Blekinge	Blekinge	Sweden
CoMPRIS	Yorkshire and Humberside	UK
NiSTRAT	North of England	UK
WIS	Wales	UK

Source: Dabinett (2001)

Some common components which emerged from the RISI regions in their approach to the Information Society strategy include¹⁵:

- evaluating the baseline situation eg. inventories of infrastructure, applications and services, skills and training provision;
- raising awareness of the Information Society and its potential impacts (positive and negative);
- assessing the SWOT for the region and developing scenarios or options for development;
- agreeing key priorities for action and ensuring these impact on, and are embedded in, wider regional development plans (including Structural Fund programmes where appropriate);
- reorienting public funds, again including Structural Fund programmes, to reflect chosen priorities; and
- determining criteria for project selection and funding support, feasibility studies, monitoring and evaluation.

¹⁵ Dabinett, G (2001) *op. cit.*

FASIL RISI – LIÈGE, WALLONIE

The FASIL initiative was managed by the organisations Services, Promotion and Initiatives (SPI) and the Society for the Creation of new Activities (SOCRAN) in Liège with input from a steering committee of around 30 members. The initiative was operated in two main phases:

- *Strategy building phase* (18 months) involving the direct participation of around 700 people. This process engaged a wide range of people, many of whom were not used to meeting together, and included both ICT specialists and non-specialists. This allowed common issues to be identified, particularly in terms of structuring, accessing and managing information. The inclusive approach rapidly raised awareness of IS-related issues, placing a wide range of actors in a better position to operate strategically.
- *Project building phase* (18 months) was narrower than the first phase and focused on concrete projects. It contains two elements. First, pilot projects are being implemented including 'RD-net', a searchable internet facility to enable firms to locate easily relevant research expertise in the region's universities, and 'Advancing tourism in Ourthe-Amblève', involving a GIS-based information system for the area's tourism firms. Second, the FASIL team is providing support to other projects – past and present – which contribute to the IS strategy. This includes support in the form of aiding project design, seeking finance (including from the EU) and locating partners.

Among the key lessons from the RISI experience is that it took a considerable amount of time for the whole process to gain momentum. Some of the working groups were also more successful than others. Internal conflicts occasionally prevented common projects from emerging and awareness levels changed at differing rates.

One of the key benefits of the FASIL initiative has been to link the region with a wider network of regions simultaneously addressing IS issues and developing strategies. This has provided a valuable learning resource with international experience leading, for example, to the creation of a working group to examine rural issues and the Information Society.

The impact of RISI has been variable - as would be expected in any initiative of this kind implemented in regions with different economic bases, institutional structures, decision-making powers and leadership qualities. Several IQ-Net regions have taken part in RISI including Steiermark, Wallonie and Bremen and a number of comments on the experience with RISI can be drawn from their experience.

- *Importance of awareness raising.* The awareness-raising effect of the formulation of an Information Society strategy was considered to be very important and a key benefit of the RISI. In the FASIL initiative in Liege, for example, the RISI strategy-building phase was carried out over a period of 18 months and involved the direct participation of some 700 people. This inclusive approach rapidly raised awareness of the issues, placing a wide range of actors in a better position to act. Non-specialists in ICTs were mixed with specialists, both in formulating the strategy and in the subsequent project building phase. The required co-operation of people not used to meeting together highlighted common issues. This was particularly apparent, for example, in terms of structuring, accessing and managing information and many projects emerged from the realisation that the opportunities related to the intellectual capital of the region were not being maximised.

Similarly in Steiermark, the co-ordination of different actors and funding agencies, which usually operate relatively independently, has raised the understanding and awareness of the Information Society and has affected their subsequent planning and thinking. While in operational terms, these agencies are likely to continue to work separately, the process of strategy consultation undertaken as part of RISI has had a noticeable effect on the type of funding provided and the target areas of these agencies. Overall, the theme of Information Society and the implications and opportunities of ICTs are more widely discussed than was previously the case – effectively a form of mainstreaming of IS issues among the wider regional development community.

The raised awareness and profile of the Information Society agenda through the RISI initiative has also impacted the extent to which this issue has been incorporated explicitly into the new Structural Fund programmes. Both Steiermark and Bremen, for example, are among the very few programmes which contain explicit Information Society measures. The experience of economic developers in dealing with Information Society issues is also likely to have positive ramifications for programme implementation as their greater familiarity with IS possibilities will impact their perspective on project development, selection and evaluation.

- *Importance of exchange of experience.* One of the key benefits to emerge for a number of regions undertaking a RISI was the access to experience and contacts in other regions simultaneously looking at the same IS issues within their individual settings. This is perhaps of particular importance in the Information Society context given, on the one hand, the speed of technological development and, on the other, the continued uncertainty about the full ramifications of the Information Society and how this should best be addressed from a strategic public policy perspective.

Exchange of experience on the process as well as concrete project ideas can be beneficial. It is also highlighted by a European Commission report on the RISI as an important additional element to awareness-raising activities:

*“Awareness raising on its own is not sufficient or useful as it builds expectation. Practical experience, good practice examples and the transfer of knowledge and expertise are necessary prerequisites which will encourage and sustain learning and development”.*¹⁶

- *Need for co-ordination.* The fact that the Information Society is potentially relevant to every area of public and private sector activity means that co-ordination is difficult but important. This fact has been recognised at national level (see section 2.2.1) and the RISI initiatives have highlighted it at regional level. Despite the difficulties of co-ordination, exacerbated by different implementation agencies and structures in different policy fields, the attempt to achieve a common agreed framework was considered important. It provides a starting point for further co-

¹⁶ DG Regio (1999) *Pilot Projects in the area of the Information Society*, Article 10 pilot projects presentation brochure, European Commission, DG Regio Unit A2, Brussels

ordinated initiatives and is important if the overall aim is to move towards a fully mainstreamed approach.

- *Time factor.* The time required to form durable partnerships and Information Society groupings within a region, to raise awareness or mainstream this issue more widely, and to develop and implement a specific Information Society strategy, is considerable. The initial contract period for the RISI initiatives was ca. 18 months – found to be too short by many regions, which recommended instead 30-36 month timescales in order for successful interventions to start emerging¹⁷. This has implications for inclusion in the Structural Fund programmes where Information Society is not the only factor under consideration and heightens the importance of linking the new programmes to a wider, on-going strategic debate on IS at a regional and/or national levels.
- *Business relevance.* The implications of the Information Society and new ICTs differ depending on the starting point of the individual firm, agency or region as well as more complex issues such as the maturity of organisational interrelationships. One lesson to emerge from the RISI experience is the need to ensure correct targeting of strategic Information Society aims and objectives, as well as awareness and development initiatives. Where information campaigns, for example, are pitched too high and are overly technological, SMEs tend to fail to see the relevance to their business operations. In part, this is related to the perception of the term ‘Information Society’: common media and business interpretations are either related to dot.com companies or to the creation or use of a webpage or e-shop. An overly limited interpretation of the Information Society will affect how relevant regional businesses perceive information campaigns or awareness raising exercises.

A broader understanding of the notion of Information Society also helps to fix it within wider development strategies. In Steiermark, for example, there is a strong development focus on clusters, stimulated by the successful automobile cluster and subsequently through other, similar initiatives in different sectors. The understanding of the potential of ICTs to support and promote clustering and networking, therefore, relates this application of the Information Society to the existing and planned economic activities of the *Land*, raising the relevance immediately for both public support agencies and regional businesses.

- *ICT brings risks as well as opportunities.* The process of strategy building, and also the formulation of concrete action plans and project proposals, helps to highlight the opportunities and also the risks of the Information Society and new ICTs. Under FASIL, for example, it was recognised that, as businesses move to exploit new ICTs, this will have significant impacts on the structure and operation of the whole firm. It is important that this is understood, and appropriate support measures put in place, to avoid unnecessary failed investment or to hinder the possibilities of new ICT related developments.

¹⁷ DG Regio (1999) op. cit.

3. THE INFORMATION SOCIETY IN CURRENT SPDs

To what extent have Structural Fund programmes responded to these challenges? In attempting to present a picture of the prominence of Information Society elements in current SPDs, this section considers the influence of the strategic IS context before presenting the integration of Information Society issues in the regional analyses on which SPDs are built, in the SPD strategies, and finally, at the most concrete level, in the policy mix as represented by the priorities and measures.

There are practical difficulties in analysing and comparing SPDs for their Information Society content. The central one is that there is no standard definition of the intended scope of the Information Society concept. The imperative has been interpreted in a variety of ways, using different terminology and/or focusing on different aspects. In illustration, the IS-related discourse of some programmes is focused tightly on a narrow vision of IS, limiting itself to ICT technologies and addressing the supply and exploitation of these technologies. At the other extreme, some programmes have a much broader vision, at their most ambitious focusing instead on the idea of the 'knowledge society' - aiming to move towards information rich, flexible, innovative economies whose advantage lies in the generation and exploitation of knowledge. Here, ICTs are facilitators, but the focus is on people and organisations and their modes of behaviour, organisation and interaction.

A second issue is the very large potential mismatch between what is explicit in programmes on the one hand and what is intended and/or will take place in practice. In some programmes, the prominence of IS will, in practice, be much more than what is explicit in the SPD. There are three possible reasons for this. First, the theme may not be addressed explicitly in measures because it is now an automatic element of projects. This is especially the case among many Nordic programmes, where the IS issue is not flagged prominently in the SPDs because, at this stage, it 'goes without saying' that ICTs will be integral to many economic development interventions. Second, it may not be addressed in detail because it has already been addressed in a parallel strategy whose objectives the SPD is helping to implement. Third, even where IS issues are not flagged because they are not currently an intended element of projects, measures may still be sufficiently broadly framed to accommodate IS-relevant projects which come forward during programme implementation. In other programmes, a contrasting situation may arise where the SPD sets out high ambitions to contribute to IS development, but these may not be followed through in practice because the delivery mechanisms or strategic frameworks may not be in place to translate these allocations into projects on the ground in the available timescales.

The remainder of the paper focuses, first, on the way in which the Information Society has been incorporated into the programming documentation and, second, on the perspectives for its inclusion and prominence in programme implementation. The third IS-related consideration in the Structural Fund context is the impact of ICTs on programme management and delivery structures. Public administrative authorities are themselves facing ICT-based changes in how they operate and e-government is emerging as an ever more important part of the new Information Society. The e-Europe initiative has

emphasised that public authorities should act as examples, modelling the use of ICTs and the positive impact of IS developments - a theme picked up in a number of Member State IS strategies and in some SPDs. The details of the IS impact on Structural Fund programme management are outwith the scope of this paper. However, previous IQ-Net papers on monitoring and programme updates have highlighted the increased exploitation of management information systems, the Internet and electronic-based communication and their impacts on programme management and steering, and on partnership interaction. These themes are also touched upon in the final section of this paper.

3.1 IS in the new Structural Fund programmes: the role of the regional strategic context

The new Structural Fund programmes have strong links to wider regional strategic plans and initiatives and this is equally true in the case of the Information Society. These wider regional strategies and development initiatives represent the most immediate and complete strategic development framework from which the new programmes draw inspiration and direction. Their greater orientation towards the Information Society in general, and the emergence of IS specific regional strategies, has influenced the nature and extent to which the Information Society is emerging in the new Structural Fund programmes.

The way in which the Structural Fund programmes interact with the wider strategic context is varied and can be characterised by three broad responses: passive, responsive and/or catalytic. These three responses are presented illustratively in Figure 3.1.

Figure 3.1: Structural Fund programme responses to the IS strategic context

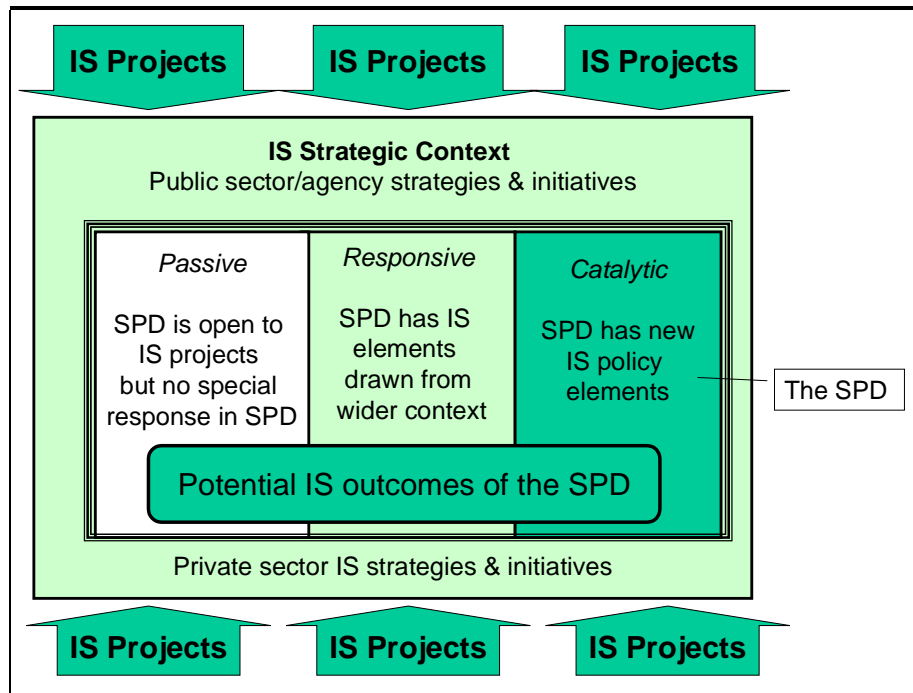


Table 3.1: Rationales for strategic responses

Passive	Responsive	Catalytic
<p>Late introduction by the EC of IS as a universal programme theme - no time to respond sufficiently.</p> <p>Policy decision to minimise IS content of SPDs although the region is active in this field.</p> <p>Lack of existing regional strategic initiatives to draw on.</p>	<p>Presence of regional strategic initiatives to support through the SPD.</p> <p>Regional IS strategies may include the integration of IS into Structural Fund programmes as one of their objectives.</p>	<p>Institutional and policy context allows scope for the Structural Fund programmes to develop new or additional policy initiatives.</p> <p>Scope for additional actions complementing existing regional strategic initiatives.</p> <p>Lack of existing regional strategic initiatives to draw on - filling the gap.</p>

3.1.1 'Passive' programmes

The first category of programmes are those with a limited IS content in the SPDs and can be regarded as having an essentially 'passive' response approach to Information Society issues. In these cases, there is a lack of analysis or discussion in the SPD itself and little evidence that wider initiatives in this area have been reflected. Relevant statements may appear in the diagnostic or strategy sections, but with limited follow-through into the priorities and measures. While not precluded, IS projects are most likely to emerge as relevant agencies put them forward for co-financing under more generic headings such as business development, urban regeneration and tourism. IS projects, therefore, will be supported more because they are seen

as important by the project applicant than because the programme has actively promoted them.

None of the programmes examined is entirely passive, since they have all taken up the IS issue to some extent. However, for some, such as Saarland and Cataluña, IS is a very limited dimension of the proposed programme, with relevant activities contained under a single measure in each case. There are several potential reasons for SPDs taking a passive approach. First, as in Cataluña, it may reflect a deliberate policy choice not to use the Structural Funds strongly to pursue IS objectives, even where these are a high policy priority more generally for the region concerned. Second, there may as yet be no strong regional strategic orientation on which to draw, as in Saarland, and it may have been deemed inappropriate for the Structural Fund programme to take on this role. Third, economic developers may have considered that the trend towards the increasing use of ICTs and Information Society aspects would be adequately reflected in the project applications which would be submitted to the programme. Finally, at a more practical level, the IS issue may simply have been emphasised by the EC as a new horizontal issue too late in the programme drafting process for it to be fully integrated. This may, in some cases, have affected the amount and coherence of IS-related information in SPDs.

3.1.2 'Responsive' programmes

A second group of programmes gives a greater and more explicit profile to IS issues, drawing on a pre-existing policy or strategic context in the region. These SPDs, which can be described as having a 'responsive' reaction to IS issues, may not have needed to undertake their own IS analysis and policy design process, instead responding to and reflecting initiatives which are already underway in the region. The programmes accommodate and incorporate the strategic orientations of parallel regional initiatives, providing them with a forum for further promotion, both in strategic and financial terms.

The majority of the new Structural Fund programmes fall under this category. The approach is not surprising, given how widespread IS strategies now are at regional level. It represents the application of the advice contained in the EU guidance on IS, which stated that:¹⁸

"consideration should be given to incorporating into every measure appropriate Information Society-related sub-measures...[which are]...structured so as to reflect a regional-wide integrated Information Society strategy."

The degree of responsiveness differs and could include: drawing on existing strategic studies (at regional but also national level) to input into the regional analysis section of the SPD; the incorporation of project proposals with an IS component in the co-financing decisions; and full incorporation of strategic priorities and aims of wider regional IS strategies into dedicated priorities and measures in the new Structural Fund programme. In many regions, the

¹⁸ DG Regio (1999) *Information Society and regional development - ERDF interventions 2000-2006 - Criteria for programme assessment*, Technical Paper 2, DG Regio, Commission of the European Communities, Brussels.

Structural Fund programme is viewed as an implementation channel for the operationalisation and financing of IS projects and initiatives identified within the wider regional framework. “*Whilst other (regional and national) funds and budgets may help, the Structural Funds are an ideal instrument for financing information strategy implementation*”.¹⁹ They can provide the resources to take regional initiatives forward more rapidly and in a more stable funding environment. The additional funding available from the Structural Funds may be particularly important for strategic initiatives not tied to implementation budgets eg. the RISIs. RISIs either feed directly into SPDs, or they feed into regional development strategies, which then inform the SPDs.

Clearly, the degree to which the wider framework can influence the new SPDs will depend on how extensively IS is incorporated and, in particular, whether specific IS strategies have been developed. If IS is a topic of little relevance generally, it is unlikely to emerge as a priority in the Structural Fund programme. The composition of the central programme team will also affect the prominence of IS issues in the process of programme preparation. Where there is considerable overlap or interaction with key regional actors, the impact of learning and exchange of experience is likely to be higher. Similarly, where extensive consultation has been undertaken, the IS issues and challenges will have more opportunity to be aired by the wider partnership.

Among the examples of responsive programmes are those of Niederösterreich, Steiermark, Lombardia and Toscana. In Niederösterreich, the main driver has been a RIS and in Steiermark a RISI, while the Italian programmes both draw on their respective Regional Development Programmes, which each include a strong IS orientation.

In Lombardia, the strategic framework reflected by the SPD is the Regional Development Plan for 2000-06, in which IS is one of the core issues. The IS elements of the RDP will be delivered through an IS Action Plan. In Toscana, likewise, the SPD will support the achievement of the objectives of the ‘Regional Government Programme for 2000-05’, which for the first time has a chapter setting goals for the further development of IS (taking forward e-Europe).

3.1.3 ‘Catalytic’ programmes

A third group of programmes can be regarded as initiating or mobilising a strategic response to the Information Society. In the case of such ‘catalytic’ programmes, the preparations for the new SPD have been used as an opportunity for original reflection on the challenge of developing and promoting the Information Society. The programme is then perceived and delivered as a catalyst for promoting new or enhanced approaches in this area.

The role of catalyst is most relevant in those programmes operating within a differentiated rather than a subsumed institutional and policy framework.²⁰ In

¹⁹ Hughes G (2000) Improving Regional Governance in the Information Society, Paper to the EC Conference *The Information Society and Economic, Social and Territorial Cohesion 2000-06: a new opportunity*, Lyon, 18-19 December 2000, p4.

²⁰ For details of this division, see IQ-Net paper: Taylor S, Bachtler J and Rooney ML (2000) *Implementing the New Generation of Programmes: Project Development, Appraisal and Selection*, IQ-Net Thematic Paper 7(2), European Policies Research Centre, University of Strathclyde, Glasgow.

differentiated contexts, it is desirable for the SPD to provide a forum for the design of new policies and approaches, while in subsumed systems, the predominant role of the SPD is to incorporate and reflect part of the existing wider policy framework. In a 'subsumed' framework, the programmes could be (potentially highly) responsive to initiatives in the region but are constrained in the extent to which they can actively develop new policy approaches or initiatives. In differentiated systems, where both the design and delivery of the Structural Fund programmes are more independent of existing national and regional structures, greater potential exists for the programmes to go beyond a reflection of the wider policy context and act as catalysts in the IS field.

3.2 The role of the IS in the regional analysis and diagnosis

As their starting point, relatively few SPDs include a detailed or comprehensive analytical treatment of the regional situation as regards IS development. In some cases, the limited IS analysis in SPDs is linked to the parallel availability of significantly fuller analyses which have informed the development of dedicated IS strategies in the region. Relevant documents are usually simply referenced and the most relevant summary elements highlighted. It is often among the catalytic programmes that more information is supplied, sometimes derived from newly commissioned research.

In terms of presentation, while some programmes integrate IS issues into their overall regional analysis (eg. Norra Norrland, where IT issues appear relatively frequently, mentioned in some form under the economy, labour market, business climate, research and development and communications), others provide a self-contained account of how the Information Society issue is perceived in the region and how the programme intends to respond to the challenges posed, the account often forming one of a series of short chapters on how the horizontal themes have been addressed (eg. Western Finland and East Wales).

Potential components to address in any analysis of the position of the region relative to the development of the Information Society are: the quality and quantity of ICT infrastructure, demand and supply of skills; the degree to which regional businesses are exploiting ICTs (including the presence of ICT-related sectors); and the disparities in access to ICTs generally (spatially and between different populations). Some programmes limit their assessment to a summary of infrastructural endowment and the presence of ICT-driven sectors or firms. Among the programmes giving fuller treatment to IS issues is Western Scotland, where the concern with IS issues begins with substantial coverage in the regional analysis. Another example is Western Finland, where a sub-chapter entitled *Know-how and the Information Society* assesses the situation of the region in some detail. To illustrate the scope of this review, the IS-related strengths of the area which are presented cover advanced research and multi-disciplinary education in information and communication technology, the existence of five technology parks with productive Centre of Expertise programmes,²¹ a dynamic infocom cluster, ICT applications adopted

²¹ The Centres of Expertise are regarded as a particular source of advantage. They were founded in the late 1990s as a part of the new regional policy, and aim to develop know-how, high technology and

in large and medium-sized companies, active development of municipal and national administration, and an advanced and co-operative health care system. The weaknesses cited include a low penetration of ICT and information networks in the SME sector, a small home market for information products, few SMEs in the information sector, a low degree of internationalisation and export in SMEs, professional content production which is in its infancy, a shortage of qualified ICT professionals in spite of high unemployment, and inflexible educational systems which are only responding slowly to changes in the profile of skills in demand.

3.3 The role of the IS in SPD objectives

In most SPDs, the Information Society and/or ICTs are not explicit elements of the overall statement of strategic objectives.

Selected programmes do set out specific objectives for their IS-related interventions. In East Wales, a specific strategic approach supporting IS on a cross-cutting basis is described in the SPD, beginning with a separate aim: “to use new technologies creatively to improve the competitiveness of the region’s businesses; the skills of its workforce (through targeting Objective 3 resources); and the cohesion of its society.” This aim is disaggregated into three specific IS objectives:

- to accelerate the rate of diffusion of technological changes by stimulating demand across all sectors. Kick starting and prototyping are needed, as are SME support structures which will need initial piloting;
- awareness raising for communities and businesses plus support and advice services; and
- to reduce the negative effects of peripherality by increasing the use of ICT by those living in more isolated areas, supporting the development of appropriate applications and services, and encouraging community-based initiatives.

A further example is Western Finland, where the following are among the specific goals:

- the advancement of expertise and international contacts;
- strengthening contacts between research and educational institutes, development organisations and business;
- increased technology transfer;
- the connection of enterprises, research and educational institutes, development centres and technology centres into international information networks;
- the application of new energy and environment technologies by firms; and
- the advancement of the R&D activity of enterprises.

enterprise activity. They are financed by a mix of national and regional (domestic) funds and the projects which they generate can also apply for EU funds. At the end of 1998, the government initiated 14 centres for 1999-2006 and six of these are in West Finland.

3.4 The role of the IS in SPD priorities and measures

No attempt has been made in this paper to quantify the prominence of IS in current SPDs in terms of likely expenditure, in absolute terms or as a percentage of whole programmes, since this is fraught with difficulty. Only a minority of activity is in easily ring-fenced measures totally dedicated to IS interventions: more frequently, IS is included as an element of wider measures. Furthermore, IS within measures may be the focus of projects or only a supporting dimension of them. In addition, as seen above, there may be a significant difference between what is explicit in programmes and what will take place in practice.

To provide an alternative overview, the approach taken here (although it, too, has clear limitations) has been to grade the priorities and measures of programmes for their apparent IS relevance (Table 3.2). It should be emphasised that the overviews can only be seen as indicative, compiled from analysis of SPDs, sometimes in draft form, and which often contain limited measure-level detail.

Programme priorities were first graded according to the extent to which they focused on IS issues by assessing whether all, some or none of their measures were relevant to IS. The results demonstrate that all programmes have at least one priority with relevance to the IS, and most have more. It is relatively common for all the priorities in a programme to contain measures with some relevance (eg. in the Italian, Swedish, Finnish, Danish, and Austrian programmes addressed here). Among the exceptions are the Spanish programmes, where IS issues are only explicit in one out of five priorities, and the German programmes which again concentrate relevant planned interventions into selected priorities. In terms of the concentration on IS issues, no programmes have an explicit 'Information Society' priority.

The next columns in the table address the measure level, providing a summary of the number of measures which are totally, partially or not relevant to the IS. A breakdown of the number of measures (excluding technical assistance) is provided in absolute and percentage terms. In interpreting the measure-level patterns, there are three key observations.

Relatively few programmes ringfence IS interventions into specific IS measures where IS is the exclusive focus. Where they are present, these measures have one of three configurations: (i) a measure dedicated to ICT infrastructure, supported by other IS elements distributed through a range of partially relevant measures; (ii) an IS measure proposing a mixture of interventions, and which is conceived as the main focus for IS activity in the programme; and (iii) an IS measure which provides a visible focus for selected policies, often derived from a wider IS strategy.

There are many programmes where a large proportion of the measures are partially relevant. In addition, a mainstreaming approach is being taken, in which IS elements are being mobilised to support other intervention types eg. training, economic infrastructure, business development.

The 'none' columns indicate that there remain many measures in many programmes which have no apparent relevance to IS. This is a timely reminder that, in spite of current 'e-mania', IS is not being treated as a

universal panacea, substituting previous economic development approaches. In other cases, however, it is clear from SPDs that IS could in practice be relevant across many more measures than some programmes indicate eg. the Wallonian programmes have much wider potential scope than is explicit.

Table 3.2: Proportion of SPD priorities and measures totally, partially or not relevant to IS

	Relevance of Priorities to the IS			Relevance of each measure to the IS					
	All measures relevant	Some measures relevant	No measures relevant	Total	Partial	None	Total	Partial	None
Steiermark	2	2	0	1	15	2	6%	83%	11%
Niederösterreich	1	2	0	1	11	8	5%	55%	40%
Meuse-Vesdre	0	3	2	0	5	11	0%	31%	69%
Rural Wallonia	0	3	0	2	3	6	18%	27%	55%
Limburg	0	1	2	0	1	8	0%	11%	89%
Kempen/Antwerpen	0	2	0	1	3	7	9%	27%	64%
Denmark	2	1	0	0	6	1	0%	86%	14%
Åland	0	1	0	1	2	1	25%	50%	25%
South Finland	1	2	0	1	5	4	10%	50%	40%
West Finland	0	3	0	0	4	5	0%	44%	56%
Alsace	1	2	0	0	6	6	0%	50%	50%
Champagne-Ardenne	0	3	1	0	9	9	0%	50%	50%
Haute-Normandie	1	3	0	0	13	4	0%	76%	24%
Languedoc-Roussillon	0	3	0	0	5	8	0%	38%	62%
Bremen	0	1	3	1	2	9	8%	17%	75%
NRW	0	2	2	1	5	18	4%	21%	75%
Saarland	0	1	3	1	0	11	8%	0%	92%
Sachsen-Anhalt	0	3	2	0	7	13	0%	35%	65%
Lombardia	0	2	0	2	2	7	18%	18%	64%
Toscana	0	3	0	0	8	15	0%	35%	65%
Aragon	0	1	4	1	0	33	3%	0%	97%
Cataluña	0	1	4	1	0	29	3%	0%	97%
Norra Norrland	2	4	0	1	16	6	4%	70%	26%
Norra	2	0	0	0	5	0	0%	100%	0%
East Wales	3	0	0	0	6	1	0%	86%	14%
Western Scotland	0	3	0	0	5	3	0%	63%	38%

3.5 Typology of IS policy actions

In the light of the above overview of the way in which the Information Society is incorporated into the priorities and measures of the new Structural Fund programmes, it is useful to illustrate the type of policy actions which are envisaged for their implementation. There is no standard, ideal combination of IS policies. One of the lessons of RISI experience has been that every region is different and demands a context-specific approach and response.²² “each region must adapt [the strategic process] to its own unique circumstances”, and derive its own solutions. The Information Society “is likely to take different forms in different contexts depending on the structure of local productive systems, local institutions, and the demand expressed by the population”²³. Promoting the IS is a multi-faceted process requiring simultaneous development on multiple policy fronts. The wide range of terminology included under the IS banner in the new programmes has been highlighted in section 3 and this is correspondingly reflected in the range of IS-related policy options and activities.

Certain policies to promote the IS lie outwith the scope of Structural Fund programmes such as regulatory, legal or pricing issues. The Structural Funds have a greater role to play in the provision of ‘flanking policies’²⁴ facilitating the “accumulation of new skills, the investment in equipment and infrastructure, and changes in organisation compatible with local and regional conditions”. These developments need to be undertaken in parallel and co-ordinated for maximum effectiveness.²⁵ If demand for skills outstrips supply, for example, this will put a brake on development. Most Structural Fund programmes reflect this reality by proposing IS-related interventions in a diversity of fields.

The type of specific IS policies undertaken will be related, to some extent, to the overall strategic direction for regional development generally and the Structural Fund programmes in particular. Table 3.3 outlines the aims of different types of IS policy. In the Structural Fund context, these strategic policy aims may underlie the overall programme, although most SPDs do not incorporate IS as a high-level horizontal strategic driver (see section 3.1). More realistic is the consideration of these policy aims in the delivery of individual priorities or measures, incorporating an IS dimension into project selection and deriving outputs as far as possible in line with these strategic aims.

²² Hughes G (2000) *op. cit.*

²³ DG Regio (1999) *op. cit.*

²⁴ CEC (1996) *Living and Working in the Information Society: People First*, Green Paper, COM (96) 389, European Commission, Brussels

²⁵ Mansell R, Steinmuller W and When U (1999) *Indicators of a Sustainable Information Society: Policy Analysis and Application*, The IPTS Report, March 1999, Available at: <http://www.jrc.es/pages/iptsreport/vol32/english/ISS4E326.html>

Table 3.3: IS policy aims

Indigenously driven development	Exogenously driven development
Developing existing firms and encouraging new firm formation in the region.	Attracting inward investment through high levels of IT skills, good quality telecommunications infrastructure, etc.
Equity (social cohesion)	Efficiency (competitiveness)
Using ICTs to target economic and social exclusion within the region. Narrowing the digital divide.	Using ICTs to gain competitive advantage over other regions.
Increasing the supply of ICTs	Increasing demand for ICTs
Supply is an issue for the market, but may still require public intervention eg. to ensure coverage of sparsely populated or remote areas.	The EC's guidance to programmes favoured demand-side interventions.

In terms of specific types of policy, a wide variety of options is possible under the Structural Funds. The Information Society is commonly viewed as affecting three broad target groups: the private sector; the public sector; and citizens. Under Objective 2 in particular, the main focus lies on supporting IS developments in the private sector. The public sector is viewed as a facilitator for private sector development through the provision of funding as well as providing an example of the application of ICT in the way in which programmes are delivered. Citizens are primarily viewed in terms of being workers ie. IS measures for individuals in the programmes tend to focus on training and employment-related measures. In programmes with a strong community economic development focus, social inclusion issues for citizens also have an IS dimension in some cases.

The EC's guidance provided some indications as to preferred policy orientations, while the EC's measure classification list (see Box) also explicitly highlights a range of (relatively general) interventions.

IS POLICY TYPES IN THE EC'S MEASURE CLASSIFICATION LIST

The EC's measure classification list has a heading under *Basic Infrastructure* called *Telecommunications infrastructure and Information Society*. Under this heading, there are four measure types:

- 321 Basic infrastructure
- 322 Information and Communication Technology (including security and safe transmission measures)
- 323 Services and applications for the citizen (health, administration, education)
- 324 Services and applications for SMEs (electronic commerce and transactions, education and training, networking).

Under the *Human Resources* heading, there is also the following measure heading:

- 24 Workforce flexibility, entrepreneurial activity, innovation, information and communication technologies (persons, firms).

Multiple other headings in the classification could include an ICT dimension eg. Shared services for the tourism industry (Type 173) and Enterprise advisory services (Type 164).

Drawing primarily on research in IQ-Net regions, the following sections provide a brief overview of the main policy areas which appear in the new Structural Fund programmes where IS-related interventions are planned. It is not exhaustive but aims to show the range and type of policy initiatives with Information Society relevance which could be delivered in the current programming period.

3.5.1 ICT infrastructure

The principal, easily quantifiable contribution of the ERDF to the development of the Information Society in past programming periods has been the modernisation and extension of ICT infrastructure. The EC's guidance on the future ERDF interventions for the Information Society²⁶ emphasises that infrastructural investment should be limited, in accordance with the Structural Fund and competition policy regulations, and that actions should stimulate the demand side. Infrastructure investment which would qualify for funding is given as :

“the opening up and (when necessary) construction of local access infrastructure to data networks and certain missing cross-border and interregional links... in those areas where private investment will show no early interest”.

The guidance provides a number of key principles as conditions for granting ERDF support for ICT infrastructure:

- The use of ERDF for telecommunications infrastructure should be fully linked to, and determined by, the Information Society development strategy of the region.
- Investment must be targeted on areas that would be neglected otherwise under free market conditions.
- Financial support should be granted only to projects that are consistent and in accordance with European and national telecom laws, regulations, recommendations and guidelines, and support should be aimed at favouring the emergence of a competitive environment.

The EC's subsequent review of the IS content of the new Structural Fund programmes indicates that, in line with the guidance, relatively limited provision has been made in the new SPDs to support telecommunications infrastructure. Potential activity appears to be focused predominantly on projects in isolated, sparsely populated or rural areas where private sector investment is unlikely to be profitable and where there is therefore a risk of a prolonged and deepened 'digital divide' without public interventions to improve infrastructure provision.²⁷

It is widely understood among Structural Fund programme managers and planners that the provision of infrastructure is, in itself, insufficient to stimulate the Information Society and that suitable and integrated demand side activities must also be promoted. However, the existence of a high-quality ICT network is still a prerequisite for further development and measures to

²⁶ DG Regio (1999) *op. cit.*

²⁷ Leygues J-C (2000) *op. cit.*

support infrastructure development exist in a number of programmes. This is a response to the perceived danger of increased intra-regional disparities where areas which are more remote or more sparsely populated will not be served to the same degree by the market in terms of infrastructure provision, thereby disadvantaging areas often already suffering other economic weaknesses. For example, the provision of IT infrastructure is an important focus of the Norra Norrland Objective 1 programme in the north of Sweden (measure 1.1), responding to the huge distances and sparse population of the programme area. IT infrastructure is also the main focus of the infrastructure measure in the Norra Objective 2 programme where the intention is to focus investment on inland and remoter areas which will be less well served by the market. The Wallonie Rural programme targets ICT infrastructure investment (including feasibility studies) on certain priority zones eg. near arterial routes, in order to capitalise on the opportunities of the Euro-Corridor.

In many cases, it is unclear from the detail in the SPDs exactly what will be undertaken in proposed infrastructure support. In Aragon, for example, building on interventions in the last period to develop infrastructures, measure 3.6 (Information Society and telecommunications in rural areas) will further develop networks as the basic condition to advance the IS. The aims of this measure include increasing the territory covered, broadening the range of services offered (especially prioritising the transfer of multiple formats of data), increasing participation and encouraging the offer of services to individuals (eg. in tourism).

3.5.2 *The business environment*

A more frequent and targeted option than improving the provision of ICT infrastructure is to improve the equipment and resources of the business economic infrastructure. This includes initiatives such as linking business premises with high-level ICT infrastructure, improving the quality and range of ICT services available at key economic sites and premises, and/or increasing the connectivity between economic centres. The domestic policies of many Member States and regions have shifted in recent years away from the physical provision of business infrastructure and towards improving the quality of their services and delivery – a shift which is being reflected in the new Structural Fund programmes.

Examples of proposed interventions from 2000-06 SPDs include:

- investing in targeted infrastructure permitting easy access to ICTs in industrial areas (Rural Wallonia);
- telematic projects, eg. teleworking centres (Niederösterreich) and the regional system of telematic services (Toscana);
- improving facilities, resources, networking and use of R&D centres (West Finland);
- virtual regional networks for the development of pilot applications (Niederösterreich), and
- linking the business economic infrastructure with high capacity ICT infrastructure (Alsace).

Such interventions are planned with several explicit rationales, including facilitating the development of the indigenous business population and attracting inward investment firms. General business environment measures (eg. measure 2.2 in the Norra Norrland programme) are also likely to include ICT related initiatives and upgrading because of the general trends in this direction, even although they are not specified specifically in the SPD. Some measures in this category are also designed to address certain disadvantages faced by firms located in more remote or less advantaged areas due to unequal access to new ICTs.

3.5.3 *Business development*

Measures improving ICT infrastructure (including those associated with business premises and infrastructure) address supply issues. However, a strong preferred orientation of current policies is to promote demand for ICTs. Firms are “an essential component of demand”²⁸ and the Commission’s guidance for programmes for the new period argues the general point that “in a competitive environment, the most effective way to stimulate private investment in poorly served areas is by funding demand for network services”²⁹. Business development measures with an IS dimension in the new programmes are numerous and diverse and can be differentiated in terms of their intended targets and rationales.

In terms of *IS-based* business development measures, interventions prioritise the development of firms operating in the information industries, variously the supply of hardware, software and/or content. The rationale for such interventions is usually to build on identified IS strengths as unique sources of growth potential and competitive advantage. Examples include:

- targeting support to businesses in the multimedia and telecommunications sectors (Rural Wallonia);
- promoting the development of e-businesses and e-commerce (Western Scotland and Saarland);
- specific support to firms in the IS sector, including adapting a multimedia project dedicated to content industries to ICTs (Languedoc-Roussillon);
- further development of the media and communications economy in Nordrhein-Westfalen, focusing on a media cluster in Cologne, software expertise concentrated in Dortmund and on opening up new market opportunities based on ICTs; and,
- experimental commercial pilot projects including in telematic areas such as fast internet and multimedia (Niederösterreich).

Business development measures aiming to achieve IS-assisted development are explicit in many, but not all programmes. Measures target existing and/or new firms, singly and/or collectively, with the overall objective of encouraging the increased and enhanced use of ICTs to support a range of

²⁸ OJ C 22, 24 January 2000, Opinion of the Committee of the Regions on the ‘Commission Staff Working Paper on Information Society and regional development - ERDF interventions 2000-2006: criteria for programme assessment’, p.36.

²⁹ DG Regio (1999) *op. cit.*

business functions. Measures include: awareness raising, modernisation of established firms through investment and/or consultancy projects (Steiermark, Norra), extending the potential impact of ICTs across business strategy, organisation and processes (Meuse-Vesdre). Targeting the development of advanced business services as a means to improve the business environment is a relatively frequent measure theme where there is an explicit ICT dimension (eg. North Jutland, Steiermark). In Steiermark, the provision of innovative business services eg. in new media and ICTs, aims to increase the attractiveness of the Objective 2 area to high quality inward investment.

IS-assisted activity, however, could prove in practice to be a more universal element in many programmes. The challenge is to identify how ICTs can best be exploited to facilitate and support more traditional business development activities. The promotion of networking between firms, for example, is a key economic development activity almost universally and one of the most powerful potential contributions of ICTs is the enabling of closer and more streamlined co-operation. Measures enabling the intra-regional networking of related SMEs are frequent in the new SPDs, sometimes helping to underpin existing cluster strategies. In Champagne-Ardenne, for example, one measure (2.4) will contribute to the emergence and structuring of clusters, including by financing capital and soft investments linked to ICTs.

Specific sectors are sometimes highlighted, with the opportunities of new ICTs being applied to sectoral-specific activities. The organisation and marketing of tourism services is a frequent target (Toscana, Lombardia, Haute Normandie, Niederösterreich). In Toscana, for example, the 'Vetrina Toscana' (Tuscan Shopwindow) project promotes the marketing and commercialisation of products through telematics and multi-media. Co-operation in culture (Champagne Ardenne) and logistics (Haute Normandie) is also highlighted. Haute Normandie proposes to use ICTs to help manage port facilities, especially by uniting the capacity of small logistics firms to make them more efficient and effective collectively than they can be singly, reducing costs and increasing capacity of usage.

In some programmes, the developmental work to derive measures has been significant. In the new Niederösterreich Objective 2 programme, measure 2.6 (Industrial-commercial soft measures) will implement a number of schemes developed as a result of the region's RIS work. These include: a toolbox to support SME co-operation; an information agency to provide centralised information for innovation and co-operation for regional firms; and support for new firm formation to bring together all relevant actors involved in the process and see the 'chain' more clearly. Many of the measures respond to perceived needs and weaknesses identified in the RIS analysis and aim to move towards a more Information Society oriented approach.

One result to emerge from the RISI and other regional IS strategy activities is the importance of awareness-raising activities in relation to the opportunities and threats of the Information Society. The reasons for the importance of awareness-raising activities are diverse. The provision of infrastructure alone will not lead to a causal increase in demand for ICTs and awareness-raising exercises are necessary to promote the range of new opportunities. Regional SMEs, particularly in areas of economic underdevelopment, are often unaware

of the opportunities of the IS as applied to their business operations. The Information Society may be perceived as irrelevant or related only to very high technology or dot.com companies. On the other hand, ICT developments may be linked only to the creation of a webpage, with little understanding of the requirement and resources necessary for its updating or the knock-on effects on business structure and organisation. Awareness-raising centres can undertake a range of activities including the organisation of demonstrations, the identification of exemplar firms and the formation of communities of users³⁰. Measure 2.5 (Preparations for the Information Society) in Steiermark, for example, includes a strong focus on awareness raising activities, drawn directly from the experience and operation of the @telekis RISI.

The potential for an IS-assisted focus in more general business development measures clearly exists in all SPDs, although it may not be highly visible in the text. In many cases, measures appear to be framed to provide the opportunity for potential IS projects to be supported. In Lombardia, for example, measure 1.7 (Initiatives supporting the quality and supply of services) proposes the provision of grants for the creation of firms to provide services to the people and the territory, some with an IS dimension, but the scope of the provision is not clear at this stage. Priority 1 of the West of Scotland Objective 2 programme (Developing the competitiveness and innovative capacity of regional firms) includes, among others, the targets of increased investment in IT equipment by assisted SMEs and number of assisted SMEs taking up e-commerce trading – implying an IS focus within a more general business development priority. Similarly in the Norra Norrland Objective 1 and Norra Objective 2 programmes in Sweden, a key aim underlying the measures to promote business development is increased application of new ICTs.

There is clearly potential for IS-related activities to be supported within more general business development measures. While projects may include ICT elements of their own accord, in response to the changing economic and technological environment, this will not necessarily be the case. In addition, traditional activities are often needed to lay the basis for the introduction of new ICT solutions. In promoting networking between firms, for example, the existence of new ICTs does open up opportunities for new forms of virtual interaction and linkage. In most cases, however, and particularly where SMEs are concerned, a physical network is likely to be required first into which new ICT potentials can be introduced for its development and support. This has implications for decision-making structures and the extent to which IS considerations are being applied horizontally in order to assess how more general projects could be improved or aided through a better inclusion of ICT usage.

3.5.4 RTDI

The Information Society and ICTs emerge in a number of ways under the heading of RTDI. New technologies can be used to update the technological levels and know-how of firms, moving them towards the development of new products and process or the identification and exploitation of new markets.

³⁰ Morgan, K (1996) *op. cit.*

ICTs can also facilitate the promotion of increased levels of innovation – within and between individual firms but also in terms of supporting the effective functioning of a regional innovation system. The Information Society is also viewed as an important part of the promotion of a knowledge society or knowledge-based development, both in R&D-related projects and also in the development of associated skills and training (see section 3.5.6).

The priorities and measures appearing in the SPDs reflect all these areas. The update of technological levels, particularly among SMEs, is a focus in a number of programmes. In Niederösterreich, for example, the aims of measures 2.3 and 2.4 (Research and development, and precompetitive research) include helping firms to increase their technological know-how, stimulating the ability to innovate, and promoting greater application of new technologies in more traditional firms and sectors. In Western Finland, measure 1.3 (Developing and applying new technology) focuses both on the development of new technologies and the improved networking between businesses and research organisations. One of the selection criteria for this measure is to improve the technological level of enterprises and public organisations, applying technology in new ways and into new groups.

The support of innovation is a high level theme in many programmes. Not all activities promoting innovation are necessarily relevant to the Information Society or the application of ICTs. However, as with many general business development activities, there is considerable potential for ICTs to aid and encourage innovative activity and networking, including through facilitating transfer mechanisms or supporting organisational changes in enterprises often required as a ramification of wider innovative developments. In Toscana, for example, measure 1.7 (Innovation transfer to SMEs) focuses on the dissemination of information about innovation to SMEs. One of the two sub-measures aims to consolidate the network of enterprises, service centres, research institutes and other relevant organisations in a variety of areas including ICTs and biotechnological applications of the Information Society. Some innovation-related measures can also be classified under business development, as the increase of innovation in SMEs is a common focus among programmes.

Research and development measures in several programmes are framed under the heading of knowledge society and knowledge development. While many of these do not specifically mention ICTs or the Information Society, the nature and orientation of the measures implies their relevance.

3.5.5 Equity-oriented policies

The relevance of ICT development policies to economic and social inclusion in Structural Fund areas is twofold. The first objective of such policies is to target public sector intervention to addressing the ‘digital divide’ - the increasingly uneven access to ICT networks and the opportunities they provide, which risks further excluding certain groups from economic and social opportunities (eg. ensuring ICT infrastructure coverage in less populated areas where market investment may not be profitable). The second is to go one step further and to exploit the new possibilities opened up by ICTs in ways which enable the particular disadvantages of the less favoured areas

and populations to be addressed, so integrating them more effectively into the wider economy and opportunities. Examples of new development options include: teleworking centres and remote access points for public services to maintain the viability of rural settlements, and the delivery of training using interactive and multimedia technologies to involve populations unreceptive to more traditional modes of delivery.

ICTs offer considerable potential in the field of economic and social inclusion, both in the context of urban areas, where inclusion and community economic development are the focus, and in rural areas where service provision and quality of life may be paramount.

In terms of urban inclusion, Western Scotland measure 2.2 *Develop SME facilities to support competitive sectors and clusters outside the strategic sites and urban area regeneration plans* includes actions to ensure equality of access to new ICTs. This theme is carried through in measure 3.1 *Community based regeneration* which is a spatially restricted measure for small area regeneration and includes specific initiatives to promote ICT projects. In Haute-Normandie, a priority dedicated to the economic and social integration of the inhabitants of urban and peri-urban areas will be supported by exploitation of ICTs, which offer new ways to enter into dialogue with the young and excluded and, used in contexts such as youth centres, could help to target specific populations with support.

The potential of ICTs to support rural quality of life, maintaining the viability and vitality of rural settlements, is highlighted in Alsace, where measure B.10 *Rural quality of life, local services, regeneration of local centres and regional nature parks* includes encouraging the introduction of ICTs at the local level to bring services to the public. Norra Norrland also aims to diversify the rural economy through IT related services, and would also be likely to exploit ICTs in projects supporting the marketing efforts of food processing companies isolated by distance. ICTs bringing services to rural areas. Measure 2.2 of the East Wales programme *Building rural networks* includes possible activities such as schemes to secure improved affordable limited local access to broadband networks and ICT services in rural areas.

A small number of programmes have measures which target the overall inclusion of citizens and their access to new technologies and participation in the Information Society. Measure 2.5 in the Auvergne Objective 2 programme, for example, includes a component for the development of ICTs in the service of the public. The Objective 1 programme in Sachsen Anhalt also contains a measure for Information and communications infrastructure which includes equipping public libraries with EDV connections.

3.5.6 Training

Human resource development is an essential element of the IS as it has been widely predicted that serious future skills gaps are likely to hinder its progress. From the perspective of less-favoured regions, there are two key requirements in this area. The first is to be able to track the supply and demand of IT skills and identify gaps over a multi-annual timeframe (given the time-lag inherent in the acquisition of high level skills). The second is to respond to these gaps,

both in ensuring a sufficient supply of IT specialists and a minimum threshold level of IT skills among the wider working population.

Training for the IS is more than training in IT. It requires ‘informacy’, or the skill of interacting with new technologies,³¹ and on-going re-training and upskilling. A much more continuous approach is desirable because of the rapid technological change and options to achieve this include combinations of life long learning and the promotion of systems of validation of work experience.³² This presents considerable new challenges:

“Static function-based skills, and traditional management models and techniques, are rendered inadequate and inflexible in a workplace which demands the opposite of workers and managers – the development of a new industrial and enterprise culture characterised by flexibility, trust, commitment and ability to anticipate and harness change.” ³³

Some Objective 2 programmes have opted to be mono-fund, meaning that if the Structural Funds are to support human resource development in this field, provision is required under the relevant Objective 3 programme. An issue for these programmes will be coherence with the necessary complementary Objective 3 or other training measures.

In tackling skills gaps, policy actions have addressed two specific groups: individuals; and businesses.

With respect to *individuals*, in order to develop more flexible workers and engaged citizens, it is crucial that training focuses on a core group of skills. In this context, the importance of solid basic numeracy and literacy skills should not be underestimated as these are the starting point for exploiting ICTs. Beyond this, training measures separate into those directed at generalists – typically basic internet, software package and general computer skills – and those aimed at specialists. Generalist approaches can be critical in integrating excluded social and employment groups into the workforce. At the same time, specialist approaches will be important as more people with vocational skills directly relevant to IS are needed. Software development, for example, not only increasingly and routinely requires skills in multiple programming languages and environments, but also demands supplementary abilities, such as project management, team working and design skills.³⁴ Training needs to respond to the pace of technological change, arguably concentrating on developing transferable core skills rather than focusing entirely on specific packages.³⁵ In addition, communications skills will be paramount.

It has been widely predicted that most countries will face IT skills shortages, so there is not just a need to train but also to retrain workers with non-IT backgrounds. An example of this comes from the Basque Country, which

³¹ CEC (1996) *op cit*

³² CEC (1998) *Job opportunities in the Information Society: exploiting the potential of the information revolution*, Report to the European Council

³³ CEC (1996) *op cit*

³⁴ Stamm’ler Jaliff J, European Craftsmanship and the Multimedia Information Society, IPTS Report, available at: <http://www.jrc.es/iptsreport/vol10/english/Ict1E106.htm>

³⁵ Cornford et al (1996) *op. cit.*

employs two streams for retraining: arts graduates are assisted in pursuing Internet environment design and content while engineers and scientists learn about the technical aspects of Internet environments. Such measures can also be beneficial where they provide an emulation of real-life project environments, encouraging 'learning by doing' and allowing taught knowledge to be applied in a practical business context.³⁶

Policy actions are also important in helping *firms* adjust to the demands of the IS, particularly SMEs. While SMEs are strongly represented in many of the new, IS-based growth sectors, the ICT skills base of more 'traditional' SMEs can be limited. It is important that the culture of SMEs towards ICTs changes. Two ways of achieving this are evident in existing SPDs: (i) to provide IT training to those already in SMEs; and (ii) to use graduate technologist schemes to encourage recruitment of specialists into firms. The latter approach has led to rapid SME adjustments in some cases, as evident in, for example, a Scottish scheme run by Scottish Enterprise in the food and textiles sectors.³⁷

Lastly, ICTs will have an important supporting role in training. New technologies can improve the way in which all types of training are organised and delivered, flexibilising and broadening access, and increasing effectiveness and efficiency - important developments in the move towards a lifelong learning society. Such is the potential of ICTs to transform the nature of the training sector, facilitating its growth by extending the reach of training provision far beyond regional boundaries, that this has become a sector in which one of the Swedish regions aims to pursue competitive advantage.

3.5.7 *ICTs and equal opportunities*

There are clear gender implications of the Information Society. A recent Swedish report on IT and gender equality³⁸ points to a number of issues relating to the role and involvement of men and women with IT in Sweden, a country relatively advanced in terms both of gender equality measures and ICT development. These include the following:

- The percentage of women in certain IT sectors is low and there are few women in leading positions in stock market quoted IT companies.
- There are few women with a high level of education and training in the IT sector. Of all people in gainful employment in certain IT sectors in 1997, 48 percent were men with post secondary education and training, while only 14 percent were women.
- The boy/girl ratio in the two largest upper secondary school programmes (social sciences and natural sciences) indicate that choices are still being made along traditional lines. Only 16 percent of pupils on the technology side are girls.

³⁶ Cornford et al (1996) *op. cit.*

³⁷ Morgan (1996) *op. cit.*

³⁸ Ministry of Industry, Employment and Communications (2001) *IT and Gender Equality*, Summary of sub-report from Jämit (Gender Equality Council for Transport and IT), Stockholm

- More men than women are engaged in research – in autumn 1998, 41 percent of active research students were women but the percentage in recently approved technological research courses was only 26 percent.

Ways to achieve change suggested by the report include: defining clearly the ways men and women approach technology and what motivates them in this area; enabling women's knowledge, attitudes and values to be expressed in different ways in terms of developing new technologies and ensuring this is valued in society and educational systems; providing women with an opportunity to change their attitudes to technology through their own experiences and female role models, influencing both business and education.

The theme of gender and Information Society and/or ICTs appears at this stage to be under-developed in the new Structural Fund programmes, and is clearly one in which there is strong potential for exploratory work and targeted exchange to elaborate options and orientations. Among the few programmes where the interface is explicit is Bremen, where a measure aims to develop new services, including those exploiting ICTs, which includes scope to provide consultancy advice to women on reconciling family and professional life, Norra Norrland, where a measure entitled *Integration, variety and equality* will provide disadvantaged groups with training in a range of areas including IT competence and skills, and a French programme targeting women with IT training.

There are two potential directions from which to explore the intersection between gender and ICTs. The first is the gender mainstreaming perspective, which should theoretically now inform all Structural Fund programming. Here, the implication is that ICT-oriented interventions may have uneven gender implications which require to be identified and addressed. For example, it may be that IT training courses need to be designed and promoted differently to target the underrepresented group, where participation in selected IT-oriented professions is dominated by either men or women, or that choices about the mode of delivery of e-government services could make them more accessible to one gender or the other and so require adjustment. Such issues need to be integrated into project design.

The second perspective concerns the role of ICTs in facilitating positive action for gender equality. Examples include enabling the flexible delivery of vocational training through distance or self-directed training, in order to make it more accessible to those who are currently prevented from accessing opportunities because of caring responsibilities. A further relevant orientation of ICTs which could be exploited in positive action measures is their potential for facilitating the flexibilisation of work more generally, in terms of time, space and the organisational configurations of the firm (ie. enabling flexible organisation of the working week, teleworking, and the networking of micro firms into what are effectively larger virtual businesses).

3.5.8 *ICTs and sustainable development*

There is some evidence that a small number of programmes explicitly intend to exploit ICTs to support environmental objectives. Examples from the sample of SPDs examined in this study are:

- Haute Normandie, where ICTs will be exploited to help to raise awareness and increase knowledge about environmental issues (measure 4.2), and
- Toscana, where, under a measure entitled 'Protection of the soil, hydraulic safety, reduction of seismic risk', one of the sub-measures will be telematic services for public authorities, firms and citizens to support the socio-economic development of the areas of the SPD based on territorial information (measure 3.9, sub-measure b).

A number of other programmes promote the development and use of new environmental technology. Measure 1.5 (Environmental support) in Steiermark for example includes the use of new environmental technologies to support projects contributing to the long-term maintenance and improvement of environmental quality in the region. In Bremen, measure 3.1 (Support for applied environmental technologies) combines the environment and the economy in the support of environmentally oriented information and consultancy, help in gaining market entry and pilot and demonstration projects.

There is, however, relatively little evidence in the SPDs of using ICTs to contribute to 'sustainable development' objectives in the broader sense. Many Structural Fund programmes aim to pursue sustainable development and to facilitate the IS, yet an explicit link does not appear to be made between these parallel objectives. A potential exception is Lombardia, where measure 1.8 dedicated to 'infrastructures for the sustainable development of the territory' includes funding for ICT investment, eg. for access to telematic networks.

What is the scope for them to achieve synergies in this area? Although the field is new, and much is uncertain, recent research indicates that, as IS technologies become more sophisticated and widespread, they could have considerable potential in helping to pursue sustainable development goals. Convinced of the potential, the European Commission, amongst others, has for some time been supporting a variety of research into the 'sustainable Information Society'.

ICTs can help to understand environmental problems and implement improved solutions, through an enhanced ability to collate, analyse and manage environmental data. Also, as set out above, they enable virtual contact to reduce the need to travel and to transport documents. Two other key processes which ICTs can facilitate could make a strong contribution to more sustainable future economic development: dematerialisation and immaterialisation.³⁹

- Dematerialisation - reducing consumption by refining product design and manufacturing to reduce the material requirements of products.
- Immaterialisation - the substitution of virtual products for material ones, eg. accessing holiday information online rather than relying on brochures, downloading a book into an e-book viewer rather than purchasing a paper copy.

³⁹ Frotschnig A, Ottitsch M and Tochtermann K (1999) A Strategic Alliance for a Sustainable Information Society, The IPTS Report, March 1999, Available at: <http://www.jrc.es/pages/iptsreport/vol32/english/ISS2E326.html>

There are potential risks associated with these processes. Dematerialisation will not necessarily, for example, lead to resource savings in the end, but could rather facilitate increased consumption. However, it would seem that knowledge into the relationship between ICTs and sustainable development is worth pursuing: ICTs offer a key potential benefit in that they can help to combine sustainability with an increasing quality of life (ie. “not following the conventional environmental approach of proposing the reduction of the privileges of the North so that the whole planet can become sustainable”).⁴⁰

Over this programming period, it would seem advisable to monitor developments in this area, and to consider the potential pursuit of relevant initiatives through the SPDs where they could allow for this.

For further information:

- The ASIS project, supported by the ACTS programme of the European Commission, aimed to form a strategic alliance between industry, business, government, NGOs, research, citizen/consumer organisations and individual citizens to pursue the sustainable Information Society (<http://www.faw.uni-ulm.de/asis/welcome.html>). This project argued that the IS will contribute to sustainable development through two key processes: dematerialisation and immaterialisation.
- Dematerialisation: relevant studies are widespread, eg. in relation to industrial processes, although they may not use the term dematerialization explicitly.
- Immaterialisation: The ASSIST Project is building on the idea of immaterialisation: http://www.ecoplan.org/assist/as_index.htm. The task of the project, funded under the EC's Information Society Technologies Programme (IST), is to report on ways of developing and expanding the potential for sustainability by encouraging the development of Information Society Technology based alternatives to material consumption, so reducing consumption and facilitating progress towards a more sustainable world.

3.5.9 Strategic initiatives

Relevant Structural Fund co-financed activities in this area could include the development of coherent strategic responses to the IS challenge, and improving information for decision-making (eg. through statistical observatories). Relatively little of this type of activity appears, however, to be present in the SPDs analysed. Measure 3.5 in the Steiermark programme (Support of regional development strategies and concepts, regional management, regional support and initiatives) includes the potential for this type of activity. The main focus of this measure will be the funding of the regional management offices which have been actively involved in the @telekis RISI initiative and are, therefore, very aware of Information Society opportunities for the local area.

The support of strategic concepts can also appear under different measure headings. In Nordrhein Westfalen, for example, measure 2.7 (Domestic and business oriented services) addresses informational deficits at a time of rapid change and includes the proposal to create a regional concept to support the service sector. One of the aims of the measure is to ensure that the region does

⁴⁰ Frotschnig A, Ottitsch M and Tochtermann K (1999) *A Strategic Alliance for a Sustainable Information Society*, The IPTS Report, March 1999, Available at: <http://www.jrc.es/pages/iptsreport/vol32/english/ISS2E326.html>

not miss opportunities now being created in the knowledge and Information Society.

3.6 Structural Fund programme case studies

In order to provide a more holistic view of the way the Information Society is integrated into the new Structural Fund programmes, this final section looks in a more integrated way at the approach of three programmes in particular. These case studies provide contrasting examples of the issues discussed in previous sections. The Norra programme takes an essentially broad approach to IS, which, while promoting ICT infrastructure and usage, is driven by 'knowledge society' objectives. It is also being implemented in a national and regional context which is highly IS-oriented. Thus, while there are ICT deficits in the region, it is assumed that IS issues will be integral to many economic development interventions and projects. The case of Niederösterreich is an example of a 'responsive' approach to the IS. The programme drew heavily on a broader regional strategic initiative (the regional innovation strategy) which provided the analytical basis and strategic context for the IS. The focus of the programme, which is delivering the RIS, is very much on promoting information/knowledge usage and ICT to serve the needs of business development. Lastly, the third case study - Western Scotland - exemplifies aspects of the catalytic role of the Structural Funds with respect to IS. Operating in a 'differentiated' policy framework, the region lacks a unified strategic approach to regional development and the Information Society, and is characterised by a multiplicity of regional and local agencies; in this context, the SPD's approach is to promote IS as a horizontal theme, encouraging all projects to consider the issues of access to, and usage of ICTs.

3.6.1 IS policies driven by 'knowledge society' objectives – Norra Objective 2 programme

The overall aim of the Norra Objective 2 programme is to create conditions for industrial and business development and competitive strength by increasing the knowledge capacity in the region. The strategy to achieve this aim includes business development based on strong knowledge and competence growth, and increasing the knowledge content of production and services.

There are two priorities in the new programme: *Improving the business environment* (ERDF funded) and *Encouraging a knowledge economy* (ESF funded). The ERDF priority incorporates increased knowledge components in business and service development, and IT infrastructure. The ESF priority, explicitly named to reflect the requirement for a knowledge society and economy, focuses on new training and educational opportunities to reinforce the activities funded by the ERDF. The measure under this priority (called 'Knowledge driven development') includes a focus on distance-learning centres, new teaching techniques and the development of technical centres, R&D and dissemination of knowledge.

The funding of IT infrastructure will be closely linked to national and regional development plans in this area. The current intention of the Norra Objective 2 programme team is to co-finance the extension of broadband into the more inland and sparsely populated areas of the region, while coastal areas which include more of the main centres, will be served principally by the market.

While IT infrastructure is a key focus of spending in the new Structural Fund programme, it is anticipated that planning within other measures, including those addressing business development, should take the new infrastructure into account in encouraging and/or approving projects which best utilise it. It is also important to build on basic IT strengths among companies in the region – a wider understanding of Information Society which extends beyond high technology and IT infrastructure. Only ca. 30 percent of the region's companies currently have email facilities and so the need for more basic skills is high. Many of the municipality project applications, particularly under the ESF priority, will aim at this target group and this was also the case in the previous programming period.

Overall, IT or IS components are commonly appearing as a matter of course in project applications and it is anticipated that the extension of quality IT infrastructure will also have ramifications on the extent to which IT elements are included in project applications. The type of projects being received range from basic IT awareness training to high technology parks and from e-commerce to infrastructure networking between towns and communities.

3.6.2 *IS policies derived from a RIS: Niederösterreich*

The IS-related elements of the new Niederösterreich Objective 2 programme are distinctive in that they are highly developed proposals, which have emerged through a careful diagnostic process and experience to date. Several initiatives were developed within the context of the regional RIS to stimulate the greater use of information and knowledge, as well as ICTs, in industrial and regional development. These initiatives include:

- *Information Agency for Innovation (Informationsagentur für Innovation)*: this agency was created to improve the access of Lower Austrian SMEs to new technologies and information. The Information Agency is one of the soft measures included in the Objective 2 programme in measure 2.6.
- *INFINÖ*: an Internet information system relating to the activities and technological competencies of Lower Austrian firms and technology centres. The system will include descriptions of activities, services, products etc. including concrete examples of relevant projects to try and make the information system as relevant as possible.
- *Co-operation platform*: the initial idea was developed under RIS+ to provide support for business cooperation in Lower Austria with the implementation and development to be co-financed under the Objective 2 programme. The platform has a number of working areas including co-ordination of regional level activities in the area of co-operation, and co-ordination of support measures for phases of cooperation.
- *Round Table for New Firm Formation (Gründungs-Roundtable)*: this was started within RIS at the end of 1998 and for an 18 month period involved regular meetings of the members to develop ideas and create transparency in the current service spectrum in order to encourage new firm formation based on research and development being undertaken in the colleges, *Fachhochschulen*, universities etc.

In the tourism sector, in addition, the focus is on ‘B2C’ communication. While considerable webpage activity is apparent, the high number of small firms in this sector means that it is much more effective to have a single portal with co-ordinated services. This also avoids the setting up costs being duplicated for each firm. In response to this, a centralised portal has been created which includes tourism firms from eight *Länder* entitled TISCOVER (www.tiscover.at).

3.6.3 Western Scotland

The IS challenges for Western Scotland are considered to be threefold. First, the region lacks a strategic plan for ICT infrastructure and services, in particular to address the sub-standard provision in rural and peripheral areas. Second, micro and small businesses display slower rates of take-up and utilisation of new ICTs, inhibiting their competitiveness and exploitation of e-business opportunities. Third, the SPD is concerned that the benefits of the IS are spread to all communities and sectors of the region; business and individuals in ‘excluded communities’ lack the financial and skill resources to take advantage of ICT developments.

The strategic response to the IS is being pursued as a horizontal theme across all three main priorities (SME competitiveness & innovation; competitive region; and economic & social cohesion) and individual measures. The programme intends to focus on:⁴¹

“supporting the demand side of the IS, promoting the adoption of ICT in the region – through e-commerce, e-learning and e-communities initiatives – to tackle the digital gap between SMEs and their competitors outside the region and digital exclusion issues which could further isolate individuals in Social Inclusion Partnership areas from economic opportunities.”

The SPD identifies the importance of several factors for the Information Society: business commitment to lifelong learning (securing and maintaining high skill levels, investment in staff development), business investment in R&D, and ability to access ICT. The SPD also notes that once the Scottish Enterprise e-business strategy is finalised, “one key early activity for the Programme will be to take on board the new strategy which will provide a clear focus of aspects of business development activities”. In the strategy, there are specific IS-related actions under all three priorities:

- enhancement of SME advice and support services to develop a competitive and innovative business base (measure 1.3) includes initiatives designed to support the development of e-business and the use of ICT to improve SME competitiveness;
- development of the region’s competitive locations (measure 2.1) and development of SME facilities (measure 2.2) includes actions to ensure equality of access to new ICT; and

⁴¹ SEP (2000) 2000-06 Western Scotland Objective 2 SPD, p56.

- community-based regeneration (measure 3.1) specifies scope for ICT projects to improve the accessibility of excluded individuals and projects to economic opportunities.

Equally importantly, the commitment of the programme to applying IS as a horizontal theme is reflected in its planned guidance to partners, selection and scoring criteria and monitoring and evaluation activity which will impact on all projects supported.

4. FACILITATING THE INFORMATION SOCIETY - CURRENT CHALLENGES

Every SPD addressed in this study has made some form of commitment to progressing the development of the Information Society. The key challenge now for programmes is to ensure that they constitute effective instruments to contribute to this objective. The problem of promoting the IS is significant:

“Adoption of the information society - with its pervasive and diverse impacts - as a new paradigm for regional development and social inclusion is highly complicated. Managing this complexity can be a problem and requires access to competences and expertise that may not exist in some regions.”⁴²

At the same time, “Mainstreaming the IS in the Structural Funds remains difficult.”⁴³

Politicians, policy-makers and researchers all stress the need for action in this area. The development of the IS is gaining momentum globally - not just within Europe. In the EU, Europe’s core regions and the most IS-oriented Member States have the greatest potential advantages. While ICTs hold the promise of helping overcome the spatial disadvantages of some less favoured regions, for example enabling firms to overcome distance and gain access to remote markets and sources of information, or enabling information processing or creation work to be decentralised from core regions:

‘there is nothing inevitable about the realisation of this benign vision. [It is just as likely that] information activities will become increasingly centralised in information-rich core regions and that the electronic highways will be used to control, rather than liberate, remote or peripheral regions’.⁴⁴

The less-favoured regions in the least ICT-oriented states need to maximise the quantity and quality of activity supported, exploiting the scope of ICTs to address their own specific disadvantages and achieve competitive advantage. They may be poorly prepared for this, not only in terms of infrastructural endowments, but also in the readiness of their firms, institutions and citizens

⁴² Hughes G (2000) *op. cit* p6.

⁴³ Hughes G (2000) *op. cit.* p7.

⁴⁴ Cornford J, Gillespie A and Richardson R (1996) *Regional Development in the Information Society: A Review and Analysis*, Paper prepared for the European High Level Expert Group on the Social and Societal Aspects of the Information Society, CURDS, Newcastle.

to adjust to the wider implications of the information society, adopting new practices and modes of organisation and interaction.

Some past Structural Fund programmes have been criticised for failing to provide an effective platform to take IS objectives forward, not prioritising IS actions appropriately, impeding them through the selection criteria used or the ‘grab-a-grant’ mentality encouraged by the budgetary logic of programmes, and not integrating this issue into evaluations of programme achievements.⁴⁵

It has already been seen that the policy content of the 2000-06 Structural Fund programmes has been reoriented towards a wide range of IS interventions. A second stage is to follow this through into implementation. The lesson of recent, regional experiences with developing Information Society Strategies is that, to successfully integrate this innovative area and to deliver maximum benefits, “critical interventions must be made in terms of policy and delivery mechanisms”.⁴⁶ The following sections address four facets of implementation: building the capacity of economic developers to respond to IS issues; increasing the IS-related activity supported by programmes; ensuring its quality; and monitoring and evaluating outcomes, in particular to facilitate a process of learning and increase the visibility of this area. This is a timely discussion given that implementation of the new Structural Fund programmes is still in its early stages, and that arrangements are only now being finalised and piloted in some cases. At this early stage in the programmes, however, there are also many open questions about how effective arrangements will prove.

As has been seen, while some Structural Fund programmes will be catalysts for new IS interventions, their predominant role is as enablers, facilitating the achievement of IS-related strategic objectives embodied in wider regional development programmes or IS strategies. As such, in this discussion of the contribution of Structural Fund programmes, it is important to consider constantly Structural Fund programmes as part of a wider system, and the reflections made having implications not only for programme managers but also for partners and intermediary implementing agents.

4.1 Increasing the capacity to support Information Society interventions

IS is relatively new as a widespread, ‘mainstreamed’, element of economic development, and is evolving quickly. Its integration into a wide range of economic development policies, as embodied in regional strategies and reflected in the Structural Fund programmes, has clear implications for knowledge and skills requirements. Relevant project design and/or selection activities will involve a learning process for many, but those actors involved are used to operating in a changing economic and policy environment, integrating new issues and responding to new priorities.

⁴⁵ Dabinett G (1999) *op. cit*

⁴⁶ McAleer J (2001) *European Information Society policy, and e-Europe in particular should more strongly reflect the role of regions as the engine room of Information Society Development*, Paper presented to a Meeting of Members of the European Parliament, European Committee of the Regions and ERIS@ Regional Representatives, Brussels 28th March 2001.

There is evidence that, in those regions which have already undertaken an IS strategy design exercise, this process has been extremely beneficial in building capacity. Very inclusive, stimulating approaches have raised levels of IS awareness among a wide range of actors involved in economic development, many of whom are now in a position to appreciate the implications of ICTs for their economic development responsibilities and to encourage the innovative and creative application of ICTs. The multi-sectoral nature of this dialogue has been critical - the public sector has neither the know-how nor the investment resources to carry forward the development of the Information Society alone, and needs to ensure the participation and commitment of the private sector.⁴⁷

In an evolving area, where potential applications are multiplying rapidly, mechanisms are arguably required to update and extend the knowledge acquired. Frequently, IS strategies have a timetable of regular review and reformulation and/or arrangements for monitoring and evaluation which will support this development.

New roles are also emerging for IS expert facilitators. Several of the structures responsible for driving regional IS strategies forward have taken on an increasing role in providing expertise supporting project development (eg. in Catalunya, and in the Liège and Steiermark RISIs).

At a more specific level, the question is whether special initiatives are required to equip those involved in Structural Fund programmes with the necessary knowledge and skills to enable the programmes to play their part. It is possible that such institutional modifications are most necessary in catalytic programmes, where programme structures require sufficient skills to generate and assess projects. However, the skills challenge is considerable in any context.

A small number of Structural Fund programmes have already made explicit provision to adapt their decision-making and programme steering structures to respond to the IS dimension, not only ensuring the availability of relevant expertise, but also giving more visibility to the IS issue. To give on-going emphasis to the IS issue, the East Midlands Objective 2 programme will establish an ICT sub-committee/working group and designate an ICT officer, either within the Secretariat or a partner organisation, to provide advice and support to project sponsors. The Yorkshire and Humber Objective 2 SPD, in turn, includes a proposal to establish a Regional Information Society Unit to support the Objective 1, 2 and 3 management committees. A key function of the Unit would be support for programme sponsors and managers, providing expert services and acting as a broker for joint and partnership actions. In some cases, additional partners need to be involved more actively in Structural Fund programmes who were previously less central to these structures, eg. Information Society/ICT departments of regional governments where these exist, or RISI co-ordinating bodies. In Flanders, the Flanders Multimedia Valley, a government-supported organisation clustering the Limburg ICT and multimedia sector has been a key advisor (<http://www.fmv.org>), while in

⁴⁷ Hughes G (2000) *op. cit* p4.

Wallonia, the *Agence Wallonne des Télécommunications* has played an enhanced advisory role (<http://www.awt.be/>).

4.2 Increasing the IS-related activity supported by programmes

In the more IS-oriented contexts, notably in the Nordic states, IT or IS components have for some time been commonly appearing as a matter of course in Structural Fund project applications. However, in other less developed and favourable contexts, there may be more need for either Structural Fund programme actors or those involved in parallel policy initiatives to take active steps to encourage this dynamic, flagging the stronger orientation of programmes towards such interventions.

What can or should be done to pursue IS outcomes very much depends on the context in which any Structural Fund programme is being implemented. However, as set out in previous IQ-Net papers, an ‘ideal’ response is a coherent and consistent approach in which a horizontal priority is followed through into each stage of programming, ensuring it is an integral part of all analyses, communications and decisions made. The Western Scotland SPD illustrates this ambition, stating that:⁴⁸

“The Programme’s focus on the IS will be reflected in guidance to partners on project development and implementation and in the selection and scoring criteria. Progress and impact will be measured as part of the monitoring and evaluation framework.”

At an early stage of the programming cycle, to attract more and better IS projects, campaigns aiming to attract project applications (eg. through calls for projects, launch conferences and newsletters) could be adjusted in their content, and also in their diffusion, ensuring that any relevant audiences are included and alerted. Making such orientations explicit in the programme’s publicity plan may help to ensure consistent follow-through and wide awareness.

The SPD and/or PC itself provides guidance to applicants in many Member States. Potential guidance in these documents encouraging IS projects includes a clear indication in the diagnostic section of the region’s IS-related strengths, weaknesses, opportunities and threats, indicative lists of potential project types (both IS-based projects and, more universally, the potential application of ICTs in other projects), and explicit IS-oriented selection criteria. Previous sections of this paper have underlined the extent to which the IS has been ‘mainstreamed’ across many programmes, with greater visibility and many more explicit indications of potential interventions.

In terms of guiding applicants, two observations can be made. The first is that not all programmes highlight the potential of ICTs in all the areas where they could clearly be relevant. The second is that appropriate Structural Fund selection criteria remain to be developed in many cases. The configuration of Structural Fund selection criteria was identified in a past RISI evaluation as having been unhelpful to some IS actions, implying that work could be required here.⁴⁹ Most selection criteria will of course in practice be included

⁴⁸ SEP (2001) *op. cit.*

⁴⁹ Dabinett G (1999) *op. cit.*

in the PCs rather than the SPDs, but by way of illustration of potential options and approaches, Table 4.1 sets out some of the IS-related criteria already contained in the SPDs.

A frequent approach to addressing the horizontal nature of the IS is to include a blanket criterion such as 'Relevance to the IS' and/or 'Innovative character of the project'. However, more ambitious outcomes may be achieved with the fuller development of such criteria, indicating in particular those aspects which would not constitute a sufficient response (eg. developments which are already widely diffused and arguably now firmly the responsibility of firms, such as establishing a simple Internet presence). A risk to avoid is encouraging 'token' responses to the IS issue, with add-on elements designed to increase the chances of winning funding but not genuinely contributing to IS development.

Table 4.1: IS-related projects selection criteria

Member State	IS-related Selection Criteria in the SPDs
Denmark	<ul style="list-style-type: none"> ➤ Contribution of projects to building a knowledge-based economy. ➤ Innovative projects will be preferred. ➤ Indicator across the whole programme is 'Number of projects with IT/ICT content'.
Finland	<ul style="list-style-type: none"> ➤ South Finland <ul style="list-style-type: none"> ➤ Measure: Developing and applying new technology: "improve the technological level of enterprises and public organisations; apply technology in new ways and into new groups". ➤ Measure: Improving the capabilities of education and research: "supports increasing teleworking; raises the level of technology; improves the scope of information networks; supports the increasing usage of information networks and their services." ➤ Measure: Raising the level of know-how of the work force and improving the access to education and training. Among the selection criteria: "increases the capabilities of the information society".
France	<ul style="list-style-type: none"> ➤ Alsace ➤ Business development priority: To specialise 3 incubator facilities (business services and new ICTs), to improve 12 industrial zones/estates (including links to new ICT networks/infrastructure) ➤ Business development measure: Aiming for the rates of ICT use to reach 50% of firms in the eligible areas ➤ Training priority: Target for training women in ICTs (25 trainees) ➤ Languedoc Roussillon ➤ Business development measure (1.1): A detailed set of relevant indicators is set out for this measure alone (p135). Include: No. of instances of advice given relating to Internet and studies for websites; number of collective projects encouraging ICT use; number of grants for electronic commerce projects; No of skilled people taken on to support ICT projects; No. of ICT firms helped with strategy or commercialisation projects, No. of projects helping co-operation between ICT and other firms; No. of SMEs supported with electronic commerce projects; Survival rates of firms in these sectors.
Germany	<ul style="list-style-type: none"> ➤ Sachsen Anhalt ➤ ICT measure: comprehensive use of ICTs and the information society, especially by SA firms, as well as developing new products using ICTs ➤ R&D infrastructure measure: general criterion: creation and use of economic potential in the IS

UK	<ul style="list-style-type: none"> ➤ 'ICT content' is included in the scoring systems of all programmes eg. East Midlands: IS-related projects will be prioritised in the selection process. In addition, grant rates will be modulated for projects which involve the delivery of ICT training or provide assistance to SMEs in ICT-related matters. ➤ West of Scotland SPD-wide criteria: Impact on innovation and progress towards IS are to be measured by: increased innovation investment; increased R&D investment; number of spin-out companies; number of patent and IP registrations by SMEs; number of new SME products; number of SME processes; increased investment in IT equipment by assisted SMEs; number of assisted SMEs taking up e-commerce trading; number of new exporters; number of new SME-HE links; technology-related business space created/enhanced.
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At the project selection stage, as a means to further encourage IS responses, several programmes are considering modulating grant rates to reward projects with a significant IS dimension (eg. in the East Midlands). However, such approaches are rare.

It is evident that a variety of actions can be undertaken to encourage project applications with an IS dimension. Nonetheless, at a more fundamental level, an important question is whether Structural Fund programmes can embrace all the potential IS-related interventions in practice, given their increasingly risk-averse stances, conditioned by the budgetary logic of programming. There were mixed views from interviewees about whether using the Structural Funds for IS-related projects presented particular issues or difficulties. Many thought not, especially given that experience was increasing, and appropriate measures could be taken to ensure robust project design, eg. through the incorporation of feasibility studies. Nonetheless, a minority were concerned that IS projects tended to be riskier, in particular because their innovative and often collaborative, complex, nature meant that they were less easy to deliver to a set timetable.

4.3 Increasing the quality of IS-oriented interventions

Structural Fund programmes provide a valuable opportunity to help accelerate IS development in eligible areas, not least through the financial resources they are making available for targeted strategic interventions. To achieve the potential, designing, selecting and delivering effective projects is a must. Many of the good practice lessons which have shaped economic development practices generally apply in this new context.

A first principle is the need to balance a range of interventions to progress the IS. Simply increasing the supply of ICT infrastructure is insufficient (a lesson also learned in the past about technological infrastructure and investment in business sites and premises). Infrastructure cannot be seen as an end in itself, but must instead be part of a wider development programme, supported by other actions aiming to exploit it and/or increase demand for it. The relatively disappointing performance of the Highlands and Islands Telecommunications Initiative in promoting indigenous use of advanced communications in the 1990s illustrates this point. Several reasons were suspected for this outcome, *inter alia*: that the technologies implemented may have been too advanced for imminent take-up by the regional SME population; that the initiative was insufficiently and unsuccessfully promoted among firms; and that it is not only the availability of technologies but also the capacity and skills of firms which

ensures effective exploitation.⁵⁰ To ensure a balance in the Norra Objective 2 programme, while IT infrastructure will be a key focus of IS spending, other measures will encourage projects exploiting this new infrastructure. For example, one municipality will be developing its food cluster, building simultaneously on local sectoral strengths and the ICT developments supported by the Objective 2 programme.

The need to see infrastructure as part of a wider package of activities raises the question of how synergies can be achieved. It has already been stated that IS development involves parallel, mutually reinforcing developments in a range of fields. Seeking synergies has long been a difficult issue in Structural Fund programming.⁵¹ One approach could be to favour suites of projects which build on areas of potential in a region, and where synergy is integral to project design.

An issue related to synergies is avoiding the duplication of initiatives. The growing momentum for IS projects is such that in some regions there is a real danger of many small-scale initiatives being implemented in a field where a single integrated project could be more efficient and effective. There are also risks of different organisations working in parallel but separately to launch what is effectively the same service. The Regional Information Society Unit proposed for establishment in Yorkshire and Humber, mentioned above, would develop and maintain a comprehensive database of Information Society activity within the region, covering all aspects of projects' activity, including technologies employed, sectors and functions, target audiences, geographies covered, budgets employed and outcomes desired. This would potentially reduce project duplication and overlap and provide an evolving overview of activities and performance.

Success may also rely on projects being designed with a detailed understanding of needs and opportunities. Arguably, while it is possible to develop an SPD allowing broad scope for IS-related actions without a detailed analysis of the specific regional context, a deeper understanding is needed at the stage of designing and appraising projects. Otherwise, the risks are that initiatives are not appropriately pitched or lack ambition, and that opportunities are missed. Styrian initiatives targeting businesses under the RISI were at first pitched too high, for example, presenting a vision of the future and possible opportunities which were not really relevant to SMEs at their current level.

The most robust source of detailed strategic insights appear to be the plethora of new IS strategies, which have enquired more deeply and widely than ever before into the implications of the IS at regional level, and IS observatories tracking trends. As seen above, Niederösterreich is an excellent example of a programme whose proposed IS interventions relate to specific developmental issues identified through an in-depth diagnostic process (associated with the RIS). This has led to policies whose focus and objectives are very clear, based on an in-depth appreciation of needs and opportunities. Analysis is

⁵⁰ Cornford J, Gillespie A and Richardson R (1996) *op. cit.* p30-1.

⁵¹ Taylor S and Promé C (1997) *Structural Fund Synergies - the ERDF and ESF in Objective Programming*, IQ-Net Thematic Paper 2(2), EPRC, University of Strathclyde, Glasgow.

particularly important given that there may be diverse needs and opportunities in the same region. For example, in Norra, in spite of the overall ICT orientation of the region and the presence of some advanced firms, 70 percent of the region's businesses do not yet have an e-mail connection. The need for more basic skills remains high, even there.

A final issue relating to project design is that the IS field is changing rapidly, leading to a need for programmes to be flexible, open to new approaches and opportunities. In theory, the policy design stage is over for current Structural Fund programmes: SPDs have been finalised in most cases, and will be in place until 2006. There are nonetheless two key sources of policy flexibility. First, at a general level, many policies with scope to pursue IS actions have been framed in a broad way, hopefully enabling them to respond to new emerging demands as the context evolves. Second, at a more fundamental level, the review of continuing policy relevance which takes place as part of the 2003 interim evaluation will allow scope for reasoned policy reorientations, should these be necessary. This policy flexibility will help to ensure that SPDs can provide effective support to parallel IS strategies, even as these evolve in the course of regular revision and review.

In a rapidly evolving field where innovations are taking place constantly, there is a strong potential role for mechanisms enabling very active exchange of experience, the mainstreaming of new, successful practices and the dissemination of lessons learned from unsuccessful initiatives. There are already many networking projects and also electronic 'gateways' which aim to structure interactions and act as 'knowledge banks'. Examples drawn from institutions, networks and university research centres include:

- The Information Society website of the EC (http://europa.eu.int/information_society/)
- The European Regional Information Society Association (eris@) (<http://www.erisa.be/>)
- The Spanish Centre of Competence in Electronic Commerce, which operates a virtual library of electronic commerce publications (<http://www.e-global.es>)
- The IPTS Report, which publishes papers on the implications of ICT for policy (<http://www.jrc.es/pages/iptsreport/by-infotec.html>, homepage: <http://www.jrc.es>)
- The signposting service of the Nord Pas de Calais digital region initiative: (<http://policyworks.gov.org/main/mg/intergov/issuesframe.html>)
- The e-commerce Innovation Centre in the University of Cardiff (<http://www.ecommerce.ac.uk/index.html>)
- The *Agence Wallonne des Télécommunications* whose site aims to serve as a place of convergence and dissemination for information and communication technologies (ICT) <http://www.awt.be/>

One apparent need is for a more stable and co-ordinated configuration of information gateways and brokers. Currently sites are relaunched and reorganised on an almost constant basis, and potentially compete to fulfil information functions rather than co-operating effectively. The tendency at

the moment is for any organisation involved in IS development to establish a signposting service.

In terms of Structural Fund-specific initiatives, DG Regio has been an active facilitator of targeted information dissemination and capacity building addressing the interface between the Information Society and the Structural Funds. Notable examples were the December 2000 Lyon conference *The Information Society and economic, social and territorial cohesion. 2000-2006: a new opportunity*,⁵² and the accessible best practice publication *Nordic.Regions@Information.Society.eu - Success Stories from Denmark, Finland and Sweden*.⁵³

The (I)RISI regions (including some IQ-Net regions) have also been involved in a very active process of targeted networking focused on IS and regional development which has been valuable for them, facilitating an ongoing process of learning, and also generated information of wider utility and relevance.

There may be potential in the course of the implementation of current Structural Fund programmes for further targeted opportunities for exchange. In particular, the comprehensive monitoring databases compiled by every Structural Fund region on their projects could provide a catalogue of experiences which could be exploited by others in the course of project design, providing ideas of practices which could be mainstreamed within and between programmes. For example, the lessons learned in the course of an ICT project supporting networking and marketing for the tourism industry could benefit other sectors undertaking networking projects and/or to the same sector in different regions. Many IS projects have a series of generic issues at their core such as modes of information management and effective communication: active exchange could accelerate progress by capitalising on new knowledge.

4.4 Measuring progress - monitoring and evaluation of IS interventions

4.4.1 Monitoring the contribution of the Structural Funds to the IS

Why do monitoring and evaluation particularly matter in the IS field? There are three important reasons. First, developing the IS has become a prominent EU-wide objective to be supported by the Structural Funds. It will therefore be necessary to be able to identify the contribution programmes have made. Second, from the point of view of good programme management, some IS projects may be among the most risky and complex interventions undertaken. To ensure good financial management under the new financial regime, it will be important to be able to identify projects in difficulty, in order to take remedial action and/or redirect funding to other projects as appropriate. Third, from the point of view of policy effectiveness, given that this is an innovative and fast moving field, there is merit in being able to identify and disseminate lessons from the projects which have been undertaken and to identify and mainstream good practice.

⁵² The speeches and workshop presentations are available at: http://www.inforegio.cec.eu.int/wbdoc/docconf/conf_en.htm.

⁵³ DG Regio (2001) *Nordic.Regions@Information.Society.eu - Success Stories from Denmark, Finland and Sweden*, Commission of the European Communities, Brussels.

In order to monitor and evaluate IS-related activity, an appropriate framework is required at the start of programming, including quantified baselines and output and impact targets. Strong provision was made at the *ex ante* evaluation stage to ensure that programmes improved their indicator frameworks in selected areas, including environmental impacts and equality of opportunity. The IS issue is new as an explicit, universal theme of Objective 2 programmes, however, and establishing the frameworks to quantify progress here has arguably received too little attention to date, especially given that additional work may be required to select the most feasible and useful indicators. It is difficult at this stage to comprehensively assess responses, since much of the detail of indicator systems will only be contained in the Programme Complements, many of which are still in preparation. However, the SPDs alone at this stage contain relatively few explicit IS indicators. At an overall level, the RISI process has illustrated that in some cases there are “neither the tools nor the indicators that will be necessary to monitor performance”.⁵⁴ Without significant further detail in the PCs, the impacts of the Structural Fund programmes on the development of the IS may not be evaluable in any robust way.

In many cases, the lateness of introducing the IS issue eroded the ability to follow it through into indicator systems. However, in other cases, limited responses relate to difficulties in defining appropriate indicators and obtaining relevant data. As with RTDI interventions in the past, there have been some difficulties in identifying appropriate and measurable indicators for some activities. The @telekis initiative in Steiermark has experienced problems in establishing indicators, eg. for awareness raising and initial consultancy, because these activities have no immediate concrete effects and their impacts may be diverse, and only become apparent in the medium to long term. At the same time, these activities are seen as fundamental. An undesirable outcome would be for funding to have to be diverted into activities with other, more quantifiable outputs and impacts.

A minimum requirement, given the difficulties in this area, could be for programmes to be able to quantify crudely the amount of IS-related activity they have supported, in expenditure terms and/or as a number of projects. Such a mechanism has been proposed by the EC to capture equal opportunities and environment-related activity through the monitoring process. To take forward the proposal, perhaps also distinguishing IS-based actions from IS-assisted ones to generate more meaningful insights, scope would need to be included in monitoring systems to record which of the following categories projects fall under in terms of their IS content:

- the project has no IS/ICT implications,
- the project has an IS/ICT dimension, but it is a facilitator, not the main focus (ie. IS is mainstreamed), or
- IS/ICTs are the focus of the project.

To make such a system workable, agreed, transparent definitions of each category would be needed, seeking to define the limits between them, and to

⁵⁴ Hughes G (2000) *op. cit* p6.

ensure that only projects with a genuine IS relevance were counted as such (eg. focusing on the presence of an ICT/IS 'leap' rather than including every project making any use of computer technologies as IS/ICT relevant).

The introduction of such a filter to capture an overall picture of activity does not replace the need for improvements to dedicated IS indicator frameworks. Both baseline data and output and impact indicators are lacking in many cases. This is serious for two reasons. First, it may affect the ability to evaluate the impact of the SPD on the IS. Second, at a more basic level, a lack of real data about the context in which the SPD is being implemented may impede the ability to assess whether and how proposed projects intend to meet real development needs in the programming area.

Although limited in number and scope, the indicators already contained in SPDs may provide a useful menu of options and specimen approaches. Table 4.2 sets out selected baselines contained within current SPDs, while Table 4.3 illustrates output and impact indicators for different spheres of activity. It may also be possible for programmes to draw on the practices of wider IS initiatives in order to improve Structural Fund IS baselines and indicators.

Table 4.2: IS baselines in SPDs

<i>Sphere</i>	<i>Examples of baseline indicators</i>
Overall activity of the Structural Fund programme	Value and number of Information Society projects in Objective 2 areas under the previous programme (absolute, and as a percentage of the programme) (Spanish EC core indicator)
Use of Internet in business	% of employees with Internet access at work % of companies selling online as % of UK average Expenditure on IT Rate of use of PCs in firms
Public use of Internet	Population with access to the Internet

Table 4.3: IS activity, output and impact indicators in SPDs

<i>Sphere</i>	<i>Examples of output and impact indicators</i>
Overall activity	Value and number of Information Society projects in Objective 2 areas (absolute, and as a percentage of the programme) (Spanish EC core indicator) Number of projects with IT/ICT content (Denmark)
Business infrastructure	To specialise 3 incubator facilities (business services and new ICTs) (Alsace) To improve 12 industrial zones/estates (including links to new ICT networks/infrastructure) (Alsace)
Business development - Internet use	Number of seminars and workshops held Number of instances of advice given relating to Internet and studies for websites (Languedoc-Roussillon) Number of collective projects encouraging ICT use (Languedoc-Roussillon) Number of IP registrations by SMEs (Western Scotland) Increased investment in IT equipment by assisted SMEs (Western Scotland) To increase by 40% the number of SMEs in the region with Internet access (East Wales) To have 90% of SMEs using the Internet/e-mail/EDI by 2001 (North-East of England)

	Rates of ICT use to reach 50% of firms in the eligible areas (Alsace) Number of skilled people taken on to support ICT projects (Languedoc-Roussillon)
On-line trading	Number of grants for electronic commerce projects and number of SMEs supported in these projects (Languedoc-Roussillon) To increase by 30% the number of SMEs supported by the programme who are trading electronically (East Wales) To have 30 % of SMEs selling on-line by 2002 (North East of England) Number of assisted SMEs taking up e-commerce trading (Western Scotland)
Business development - ICT firms	No of ICT firms helped with strategy or commercialisation projects (Languedoc-Roussillon) No of projects supporting co-operation between ICT firms and other firms (Languedoc-Roussillon) Survival rates of firms in ICT sectors (Languedoc-Roussillon)
Public Internet access	To increase by 20% the number of public access points in the region (East Wales)
ICT skills	To provide 700 companies with ICT training (East Midlands) Number of individuals trained in ICT To raise levels of ICT qualification at least to the European Computer Driving Licence levels (Yorkshire and Humber) Target for training women in ICTs (25 trainees) (Alsace)

Structural Fund programmes of the Objective 2 type are now considered by many as a temporary part of the economic development landscape. It certainly appears unlikely, therefore, that dedicated exercises will take place to establish baselines for eligible areas which in most cases do not coincide with statistical areas (eg. as confirmed in North Jutland). A useful approach would therefore appear to be to look for synergies with indicator frameworks for wider initiatives, eg. regional IS strategies, or to encourage these initiatives to make more concerted efforts to define indicators.

Overall, there is evidence of many unmet challenges in terms of dedicated indicators tracking the development of the IS - both generally and as regards the contribution of the Structural Funds - so much so that at a broader level *eris@* has called for the establishment of a Competence Centre on Regional Information Society Development to address this area in an efficient, robust and co-ordinated way. Comparative information is available on the Information Society, including the EC's *Measuring the Information Society survey* (web site http://europa.eu.int/ISPO/basics/measuring/i_measurin.html) based on an annual survey by the European Society Activity Centre, but a regional observatory implies a more ambitious undertaking.

Likewise, to respond to analytical shortcomings, considerable effort has been made in Cataluña to establish an IS Observatory, tracking both the evolution of the IS in the region and the position of the region relative to Spain and other EU Member States, using a range of key statistics. The first major publication, downloadable from the Internet was: 'Statistics on the Information Society: Catalonia 2000'. This provided a first in-depth statistical overview, with a range of data organised under the following headings: ICT equipment in the home; use of ICT in society; ICT in companies; public administration; health care; education; production and employment in the ICT sector; infrastructures; public financing of R&D; and the presence of Catalan

on the Internet. In each area, the aim was to analyse ICTs from two angles, measuring the level of equipment, and its use and presence. The study drew together data from a wide variety of sources, providing a single point of reference to better understand trends in the region. Some data was already available, but other information was generated especially for the study. In deciding which indicators to include, reference was made to the practices of other European observatories. It is intended that the statistics will be updated and indicators revised as international consensus emerges about the nature and definition of key indicators for the Information Society. A further observatory has been established in the Basque Country, establishing not only lists of useful indicators, but also, critically, methodologies for their robust calculation. The Observatory publishes statistical reports and qualitative reports targeted at different audiences, acts as an information repository, undertakes exchanges with similar organisations elsewhere, and promotes expert meetings on relevant themes.

A final observation relating to indicators is that IS is a fast moving field, and the indicators and their quantified targets chosen in 2000/1 may no longer be appropriate even at the mid-way point of programmes. One response in two UK regions (Yorkshire and Humber and North-East England) has been to take an evolutionary approach to IS, reviewing progress periodically, and making changes if necessary. The North-East of England SPD notes that:⁵⁵

“given the dramatic growth in ICT and its uniquely unpredictable nature in terms of future development/applications, ICT targets will be renewed annually as part of the programme review process and in line with UK government benchmarking indicators and targets.”

Such approaches would appear to be potentially beneficial.

4.4.2 *Evaluating the contribution of the Structural Funds to the IS*

A key benefit of the Structural Funds has been that they have increased the extent and rigour of policy evaluation, ensuring integrated responses phased across programming periods. The next key evaluation of the current programmes will be the 2003 mid-term evaluations, which will be expected to deepen monitoring, analysing the early outputs and impacts of Structural Fund programmes and verifying the continued relevance of the policies being pursued. In the course of these studies, capturing the contribution of programmes to the IS will be a new challenge for many.

Information Society is mentioned explicitly only once in the EC's Working Paper on the forthcoming interim evaluations, and as one of a longer list of potentially complex issues which have to be addressed:

“A further concern for the evaluation of impact at mid term stage is related to the evaluation of expected impacts on a limited number of fundamental priorities...impact on environment and equality of opportunity between men and women in particular, but also SMEs, competitiveness and innovation, the information society, local development and employment with regard to the European

⁵⁵ Government Office for the North-East (2000) *North-East England Objective 2 Programme 2000-06*, part 3, p116.

*Employment Strategy as well as rural development.” [Underlining added.]*⁵⁶

The methodological and organisational challenges of addressing multiple programme objectives with sufficient depth in Structural Fund evaluations, whilst maintaining proportionality in terms of the time and resources dedicated to these evaluations, has not yet been satisfactorily resolved. The risk of numerous and conflicting demands is that only some are dealt with meaningfully. This raises the question of how much emphasis can and indeed should be placed on IS in the course of these studies. This decision relates, amongst other things, to the ambitions of the SPD itself. Where the focus on IS/ICTs is strong, it would be expected that an evaluation of the programme would have to take this dimension into account in a more considered way. In these circumstances, the drafting of evaluation terms of reference should certainly reflect the desired thematic balance of the evaluation, and the selection of evaluators should take into account the availability or otherwise of specific expertise in this area.

In Structural Fund regions where IS is regarded as a fundamental element of regional development, there are two potential additional evaluation responses: the first is to consider commissioning a targeted thematic IS evaluation (especially if there are issues whose resolution will increase the ability of the programme to facilitate IS development) and the second is to seek synergies with any dedicated evaluations of parallel IS strategies, ensuring that they also assess the capacity of the Structural Fund programme to reinforce them. A limiting factor here is that other regional initiatives and policies do not necessarily benefit from the same structured programme of evaluations as Structural Fund programmes do, even where they are EC co-financed programmes. For example, no formal evaluation of the RISI programme has yet taken place.

A final point to highlight is the potential for Structural Fund programmes to gain methodological support for the evaluation of IS-related activity from relevant studies which have already been undertaken. The EC is supporting a broad, thematic evaluation of Information Society interventions in the Structural Funds for 1994-99 and 2000-06 which may provide a valuable common reference point, as well as bringing a higher profile to the IS issue in Structural Fund programming.

5. CONCLUSIONS AND ISSUES

The ‘Information Society’ is a term which has emerged in recent years as a way of describing the rapidly changing social and economic environment, especially as a result of the increasing ubiquity of information and the growing importance of information and communication technologies (ICTs). Understood in the broad sense, the Information Society has the potential to affect every level of society and economy from the individual citizen or enterprise to multinational corporations and policymaking at regional, national

⁵⁶ DG Regio (2000) *The Mid Term Evaluation of Structural Fund Interventions, The 2000-2006 Programming Period*, Methodological Working Paper No 8, Commission of the European Communities, Brussels, p19.

and EU levels. As a result, the concept has been given greater attention in economic development policy-making in recent years, not least in many EU policy areas. To assess the importance of this concept in the 2000-06 Structural Fund programmes, the paper has considered the practical implications of the Information Society to EU regional policy. It first discussed the policy context for supporting the emergence of the Information Society at EU, national and regional levels, and then reviewed the approach to supporting the Information Society within current SPDs and considered the challenges to Structural Fund programme managers and policy-makers of adequately addressing Information Society issues. This final section summarises the discussion and key issues which emerged.

5.1 The Information Society: perceptions and policy influence

In its widest sense, the Information Society (or IS) can be a difficult concept to understand and relate clearly to policymaking. It has become a necessary ‘buzz word’ but one without a common definition or application. Nevertheless, the concept has already significantly influenced policymaking at EU, national and regional levels, with policies at one governance level frequently framing and influencing the policy actions of other levels.

At the highest level, the EU has placed an emphasis on the IS which has visibly grown over the last decade. At present, both the Commission and the Council initiated IS actions in several directions, including: sustained, high-level reflection as a prelude to policy development; awareness raising; legislative developments and institutional changes; dedicated initiatives for Information Society including Action Plans; and the refocusing of existing instruments, most notably the Structural Funds and the R&D framework programmes to facilitate the development of IS. Indeed, the new 2000-06 programming period of the Structural Funds is being viewed by the Commission as one where the focus and volume of activity in the area of IS should increase significantly, as reflected in its adoption as a horizontal programme theme.

The Information Society has also become more significant in the policies and strategies of the Member States, particularly at national level. Understanding the national (as well as the regional) policy context for the IS can be critical for being able to assess recent developments in the new Structural Fund programmes. At national level, most strategies have taken the form of pluri-annual frameworks, regularly updated and evaluated, and accompanied by a range of sectoral strategies which address key aspects of the IS, such as education/training, e-commerce and e-government. Some countries have developed a long and active tradition in this area – notably the Scandinavian countries – but all Member States have placed some priority on the issue.

IS has also been the subject of extensive regional activity. While integrated regional IS strategies are less widespread than their national counterparts, they are becoming increasingly common. They have been encouraged by the increasing importance of regions in the hierarchy of economic planning and decision-making as well as a renewed appreciation of the role of knowledge-based innovation in regional economic development. Regional activity in this area covers a broad spectrum and includes the drafting of dedicated IS

strategies, the incorporation of IS issues into development plans and specific strategic targeting of areas of regional IS strength. In aiming to become 'learning regions', two forms of regional IS strategy have been widespread:

- *Regional Information Society Initiative*, in which EU-based support for multi-regional initiatives encompass demonstrations of best practice in the use of ICT in key sectors (such as tourism, telemedicine, teleworking, public administration and business services) and integration of the IS concept into regional economic development and employment policies; and
- *regionally-initiated strategies*, which range from an overall assessment of the implications of the IS for public sector activities in the region to more targeted and forward looking strategies for ICT and IS developments.

5.2 The Information Society in current SPDs

Any review of the importance of the Information Society in the SPDs encounters a number of practical difficulties which should be borne in mind. The central one is that there is no standard definition of the intended scope of the IS concept. The imperative – as formulated by the Commission - has been interpreted in various ways, using different terminology and/or focusing on different aspects of what is already a broad and flexible concept. A second issue is the large potential mismatch between what is explicit in programmes and what is intended and/or will take place in practice. In some programmes, IS is likely to be more prominent in practice than is apparent in the SPD while in others, parallel strategies and initiatives which are designed to focus on SPD issues exclusively.

In designing a response to the IS in the new Structural Fund programmes, it is crucial to consider the wider strategic plans and initiatives at regional and national levels which often set the framework for potential actions. At regional level, these wider strategies and development initiatives may represent the most immediate and complete strategic development framework from which the new programmes draw inspiration and direction. These interactions can be classified in three ways:

- *passive*, in which the late introduction of the IS imperative by the Commission and the absence of existing IS initiatives has led to a policy decision to minimise IS content in the SPDs;
- *responsive* (which describes the majority of SPD approaches), in which existing IS strategies are integrated into the SPD; and
- *catalytic*, where the IS imperative has prompted the development of new IS initiatives in the context of the Structural Funds.

The role of the IS in the SPDs is commonly restricted to particular aspects of the strategies. Relatively few SPDs include a detailed or comprehensive analytical treatment of the regional situation as regards IS development. In some cases, the limited IS analysis in SPDs is linked to the parallel availability of significantly fuller analyses which have informed the development of dedicated IS strategies in the region. Similarly, in most SPDs, the IS and/or ICTs are not explicit elements of the overall statement of strategic objectives.

However, at priority and measure level, the IS concept is clearly visible. All programmes have at least one priority with relevance to the IS, and most have more (though no programmes have priorities explicitly dedicated to the IS). Where they are present, these measures have one of three configurations: (i) a measure specifically for ICT infrastructure; (ii) a measure proposing a mixture of IS interventions, which is conceived as the main focus for all IS activity in the programme; and (iii) a measure which provides a visible focus for selected policies, often derived from a wider IS strategy.

In this context, it is useful to distinguish between two types of policy actions: those which are *IS-based* (where developing different aspects of the IS is the main objective of the action, such as support for creating new internet-based technologies and services); and those which are *IS-assisted* (where different aspects of the IS are meant to facilitate other forms of development, such as enabling businesses and individuals to gain access to the internet). Overall, there is no standard, ideal combination of IS policies, though the IS dimension can be incorporated into a variety of policy aims. This is reflected in the diversity of IS-related measures found in the SPDs:

- *infrastructure*: a common measure in past programmes, this typically involves support for ICT infrastructure and the ability of individuals and businesses to make use of it;
- *business environment*: a more frequent and targeted option than infrastructure improvements in the current round, such measures aim to improve the IS-related equipment and resources of the business economic infrastructure;
- *business development*: as well as addressing supply issues, many IS-influenced measures aim at promoting demand for ICTs;
- *RTDI*: a range of measures is included here, such as support for technological development, the innovation capacity of businesses and training;
- *equity*: IS measures can address issues of urban and rural exclusion by using ICTs to improve social and economic access for disadvantaged groups and communities;
- *training*: human resource development is an essential element as serious skills gaps are putting a brake on its development of the IS;
- *equal opportunities*: given the recognised differences in gender access and usage of ICTs, there is clear scope for IS-related measures to address imbalances;
- *sustainable development*: many Structural Fund programmes aim to pursue sustainable development and to facilitate the IS, though an explicit link tends not be made between these parallel objectives; and
- *strategic initiatives*: co-financed activities in this area include the developing coherent strategic responses to the IS challenge, and improving information for decision-making.

5.3 Facilitating the Information Society: current challenges

Every SPD addressed in this study has made some form of commitment to progressing the development of the Information Society. The key challenge now for programmes is to ensure that they constitute effective instruments to contribute to this objective. However, they should not act alone. In reflecting on the challenges of the IS to Structural Funds programmes, it should be emphasised that the predominant role of programmes in this area is as enablers, facilitating the achievement of IS-related strategic objectives embodied in wider regional development programmes or IS strategies. Indeed, Structural Fund programmes more frequently provide a channel through which the objectives of parallel IS strategies can be pursued. In consequence, it is important not to focus solely on what Structural Fund actors can do, but to consider the Structural Fund programmes as part of a wider system.

That said, the role of incorporating IS considerations into the implementation as well as the design of the 2000-06 Structural Fund programmes is critical. Four facets of this are important: building the capacity of economic developers to respond to IS issues; increasing the IS-related activity supported by programmes; ensuring its quality; and monitoring and evaluating outcomes, in particular to facilitate a process of learning and increase the visibility of this area.

First, across many regions, the process of devising responses to the IS challenge highlights the need to increase programming capacities. As a relatively new but widespread, 'mainstreamed', element of economic development, the integration of the IS into a wide range of economic development policies has clear implications for knowledge and skills requirements. Relevant project design and/or selection activities will involve a learning process for many, but those actors involved are used to operating in a changing economic and policy environment, integrating new issues and responding to new priorities. Very inclusive, stimulating approaches have already raised levels of IS awareness among a wide range of actors involved in economic development, but mechanisms are still arguably required to update and extend the knowledge acquired. Each programme will have to address the question of whether special initiatives are required to equip those involved in Structural Fund programmes with the necessary knowledge and skills to enable the programmes to play their role as IS facilitators. A small number of Structural Fund programmes have already done so, making explicit provision to adapt their decision-making and programme steering structures to respond to the IS dimension.

Second, there is a need for Structural Fund programme actors actively to encourage a more dynamic approach to integrating the IS into projects at an early stage. Ideally, IS as a thematic priority should be followed through into each stage of programming, ensuring it is an integral part of all analyses, communications and decisions made. The project application and selection stages are crucial in this regard. Publicity for the relevance of the IS theme in projects is one important aspect of this. There is also scope for improving guidance to applicants, as not all programmes highlight the potential of ICTs in all relevant areas or have developed appropriate Structural Fund selection

criteria. Overall, while such an approach may omit some IS-related interventions and leave unanswered questions about the appropriateness of using the Structural Funds for IS projects (in light of the greater elements of risk and complexity), they can promote a greater IS dimension to projects.

Third, in raising the quality of IS interventions, it is important that the concept does not become a mantra or cure-all. While such 'e-mania' is fashionable at present, simply increasing the supply of ICT infrastructure without changing IS attitudes and capacities is insufficient (a lesson which has been learned in the past about technological infrastructure and investment in business sites and premises). It cannot be seen as an end in itself, but must instead be part of a wider development programme, supported by other actions aiming to exploit the infrastructure and/or increase demand for it. IS or ICT issues should not be a 'bolt-on' extra to projects; as with other universal programme themes, they need to be integrated into projects early on.

Monitoring and evaluation are particularly relevant here. Developing the IS has become a prominent EU-wide objective to be supported by the Structural Funds, so it will be necessary to be able to identify the contribution programmes have made. From the point of view of good programme management, some IS projects may be among the most risky and complex interventions undertaken. Moreover, from the perspective of policy effectiveness, given that this is an innovative and fast moving field, there is merit in being able to identify and disseminate lessons from the projects which have been undertaken and to identify and mainstream good practice.

Consequently, to identify and analyse IS-related outcomes, an appropriate monitoring framework is required at the start of programming, including quantified baselines and output and impact targets. For many of the current SPDs, the lateness of introducing the IS issue has undermined their ability to do this adequately. Both baseline data and output and impact indicators are lacking in many cases. To address the deficiencies of the SPDs in the short term, the indicators already contained in SPDs may provide a useful menu of options and specimen approaches. Moreover, the very mechanisms proposed by the EC to capture the amount of equal opportunities and environment-related activity through the monitoring process could be extended to cover IS-related activities. Identifying the contribution of programmes to the IS will be a new challenge for many and arguably, a new paradigm of economic development will demand new evaluation responses. Given the potential importance of this issue, it is recommended that evaluating the impact on the IS should be an explicit part of the evaluation brief.

Lastly, there are clear challenges to programme management. ICTs have powerful contributions to make in increasing the capacity of programmes to store and manipulate information with computerised monitoring systems, streamlining administration and facilitating more effective partnership relations.

5.4 Concluding issues

The information society is a new and challenging concept for programme managers, partners and beneficiaries. Although many regions have been promoting aspects of the IS under previous Structural Fund programmes – for

example, support for telecommunications infrastructure, IT skills training, information access – the novel aspect of current thinking about the IS is that it requires programme managers to take a strategic approach to the provision, awareness and exploitation of ICT.

The concept of mainstreaming IS within programmes may be new, but the nature of the programming responses outlined above will be familiar. Effective implementation of IS-based or IS-assisted strategies requires integrated planning (through all stages of the programming cycle) and investment in capacity building, project quality and monitoring to ensure a continuous process of learning. As with the mainstreaming of other horizontal themes - equal opportunities and sustainable development – the integration of IS within programmes is a complex and challenging exercise requiring changes in culture and behaviour as much as new organisational mechanisms and the re-allocation of resources.

In addressing the challenges of the information society, programme managers need to operate as part of a wider regional development system, and they are heavily dependent on the actions, commitment and resources of partner and applicant organisations. However, regardless of whether they are operating within ‘subsumed’ or ‘differentiated’ frameworks, programme managers have a unique ability to make a difference to the mainstreaming of IS within regional development. In their role as ‘process managers’, they have the potential to initiate, mobilise or facilitate changes in thinking and practice across organisational and policy boundaries. Realising that potential over the next six years would contribute significantly to enabling businesses, communities and individuals in less-favoured parts of the EU to participate more fully in the knowledge economy.