

# **Public Strategies for the Information Society in the Member States of the European Union**

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## **An ESIS report**

**Information Society Activity Centre  
DG Information Society**

**This version includes two additional  
contributions from the EFTA/EEA countries  
Norway and Iceland (November 2000)**

**September 2000**

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## The ESIS Project

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The Information Society Project Office (ISPO) at the European Commission set up a survey of European Information Society Projects and Actions in the 15 EU Member States called ESIS. This project ran for a period of two years between February 1997 and January 1999. It was further extended to 25 CEEC and Mediterranean countries and a continuation phase for Member States was implemented in 2000 with a narrower scope. **This report on Public Strategies for the Information Society in the Member States of the European Union has been produced to provide up-to-date and relevant information that would support the existing reports and database on the web site.**

ESIS holds information on a broad range of commercial and publicly funded Information Society application projects in Europe. It aims to provide a tool for benchmarking, knowledge, communication, partnership and the promotion of best practice examples. Furthermore, it can serve as a navigation tool for all key actors and help in the promotion of the Information Society in Europe.

More precisely, ESIS combines four categories of information:

- An inventory of projects, which is the core of ESIS. Projects must use ICT in an innovative, interactive way and provide remote access. They may concern a large number of social and economic sectors and be initiated by national, regional, public and private organisations, or through partnerships set up between public and private groups. This inventory is conducted on the basis of a standardised questionnaire that is filled in by project promoters. This permits national and European qualitative and quantitative analysis based on standardised data and statistics.
- The monitoring and regular analysis of new regulations and a collection of basic facts on Information Society developments.
- A permanent overview of public and private promotional actions and initiatives aimed at favouring the development of the Information Society.
- The mapping of the actors, notably the public or private network facilities offering Information Society infrastructure, services and applications (e.g. gas, railways, water supply, cable TV, highways, electric networks etc.).

The European Commission has made the general findings and statistical results openly available to all parties with a strong interest in the development and progress of Information Society initiatives, including various European Commission directorates, units and services, industry and social partners in Member States, individual organisations and research bodies, as well as the general public (<http://www.ispo.cec.be/esis>).

Sema Group and LL&A provide Project Management support services to the project.

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## Table of contents

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Introduction .....	9
<b>General Overview .....</b>	<b>11</b>
Towards Information Society Public Strategies.....	13
Key actors .....	14
Key points .....	15
Public Strategy Overview: main documents, key actors .....	19
Country Summaries .....	23
<b>Austria.....</b>	<b>39</b>
Introduction .....	41
1. Historical overview .....	42
1.1 <i>Telecommunications initiative Austria (1994)</i> .....	42
1.2 <i>The Austrian's way into the Information Society (1995-1996)</i> .....	42
1.3 <i>The Federal Information Society Report: an Austrian Strategy and Action Plan (1997)</i> .....	43
1.5 <i>Regional Information Society Initiatives</i> .....	44
2. "Österreich digital", Government's Information and Communication Project and "eAustria in eEurope" .....	45
2.1 <i>Österreich digital</i> .....	45
2.2 <i>Organisational changes</i> .....	45
2.3 <i>Launching the "Government's Information and Communication Project" and "e-Austria in Europe"</i> ....	46
2.4 <i>Recent development: E-commerce Task Force</i> .....	51
<b>Belgium .....</b>	<b>53</b>
Introduction .....	55
1. Historical Background .....	56
1.1 <i>Federal Initiatives (1994-1998)</i> .....	56
1.2 <i>Initiatives of the Flemish Government (1994-1998)</i> .....	57
1.3 <i>The Walloon Region (1995-1998)</i> .....	57
2. Current developments at the federal and regional level.....	58
2.1 <i>Federal Initiatives</i> .....	58
2.2 <i>Flanders Government initiatives</i> .....	60
2.3 <i>Walloon Government: Contrat d'Avenir pour la Wallonie</i> .....	61
<b>Denmark.....</b>	<b>63</b>
Introduction .....	65
1. From "Info-Society 2000" to "Action for Change": evolution of the Danish IT action plans.....	66
1.1 <i>White Paper "Info-Society 2000" (1994)</i> .....	66
1.2 <i>IT Policy Action Plan 1995: "From vision to action - Info-Society 2000"</i> .....	67
1.3 <i>IT Policy Action Plan 1996: "Info-Society for All – the Danish Model»</i> .....	67
1.4 <i>IT Policy White Paper "Authorities heading for a fall" and IT-policy Action Plan 1997/1998: "Action for Change"</i> .....	67
1.5 <i>National sub-strategies and sectoral action plans</i> .....	69
2. Digital Denmark; "Conversion to a Network Society" and "Realigning to a Network society" .....	71
2.1 <i>Preparation of a New IT Strategy (November 1998)</i> .....	71
2.2 <i>Publication of the Discussion Paper: "Digital Denmark: conversion to the network society" (November 1999)</i> .....	72
2.3 <i>IT Policy Strategy: "Realigning to a Network society" (December 1999)</i> .....	73
2.4 <i>Recent developments</i> .....	77

<b>Finland .....</b>	<b>79</b>
Introduction .....	81
1. Evolution of the Information Society in Finland .....	82
1.1 <i>The First IS national strategy and its implementation (1994)</i> .....	82
1.2 <i>Government Position Paper (Aho, 1995)</i> .....	82
1.3 <i>Lipponen's Government Programme and its implementation in 1995 and 1996</i> .....	83
1.4 <i>Starting the revision of the Finnish strategy (1997)</i> .....	84
2. A new Finnish IS strategy and its implementation .....	85
2.1 <i>A new IS national Strategy: "Quality of life, knowledge and competitiveness" (December 1998)</i> .....	85
2.2 <i>Information society in the new coalition programme (Lipponen II 1999)</i> .....	88
2.3 <i>Implementation of the Spearhead projects</i> .....	89
2.4 <i>New sectoral IS strategies and action plans</i> .....	91
2.5 <i>The Development of Information Society in Finland: report of the Information Society Advisory Board (June 2000)</i> .....	93
<b>France .....</b>	<b>97</b>
Introduction .....	99
1. Governmental action programme for entry of France into the information society	100
1.1 <i>French activities prior to 1997</i> .....	100
1.2 <i>The Prime Minister' Speech at Hourtin (August 1997)</i> .....	101
1.3 <i>Governmental action programme for entry of France into the information society (January 1998)</i> ...	101
2. The implementation of the French IS programme.....	106
2.1 <i>PAGSI Implementation in 1998-1999 and 1999 Appraisal</i> .....	106
2.2 <i>The Third Inter-ministerial Committee for Information Society (July 2000)</i> .....	109
2.3 <i>Build an Information Society for all: the future priorities of the French IS Programme</i> .....	111
<b>Germany .....</b>	<b>115</b>
Introduction .....	117
1. The first Federal Information Society Strategy and its implementation .....	118
1.1 <i>"Info-2000: Germany's Way to the Information Society" (February 1996)</i> .....	118
1.2 <i>Policies and Activities (1996-1998)</i> .....	119
2. The new Action Programme of the Federal Government .....	119
2.1 <i>Federal IS Action Programme: "Innovation and Jobs in the Information Society of the 21<sup>st</sup> Century" (November 1999)</i> .....	119
2.2 <i>Examples of initiatives resulting from the Government Action Programme</i> .....	124
3. Länder Information Society Strategies and Initiatives .....	126
<b>Greece .....</b>	<b>129</b>
Introduction .....	131
1. The first Greek White Paper on Information Society and its implementation .....	132
1.1 <i>The White Paper on the Greek Strategy for the Information Society (1995)</i> .....	132
1.2 <i>Examples of implemented or on-going actions (1995-2000)</i> .....	133
2. The Greek new IS Strategy and its implementation .....	135
2.1 <i>White Paper "Greece in the Information Society: Strategy and Actions" (February 1999)</i> .....	135
2.2 <i>The Greek Operational Program for the Information Society 2000-2006</i> .....	137
<b>Ireland .....</b>	<b>141</b>
Introduction .....	143
1. Preparation of an Information Strategy for Ireland .....	144
1.1 <i>Information Society Ireland: Strategy for Action (March 1997)</i> .....	144
1.2 <i>Proposal a framework for Action (December 1998)</i> .....	144
1.3 <i>Establishment of the Information Society Commission (May 1997)</i> .....	145
2. Implementing the Information Society in Ireland: An Action Plan .....	146
2.1 <i>The Irish Action Plan for Information Society (January 1999)</i> .....	146
2.2 <i>Progress Reports (July 1999 and April 2000)</i> .....	147
2.3 <i>Focus on some initiatives</i> .....	150

<b>Italy .....</b>	<b>153</b>
Introduction .....	155
1. The Evolution of IS in Italy: a public policy perspective .....	156
1.1 <i>The Information Society Forum (1996) and the first strategic document (1997)</i> .....	156
1.2 <i>Activities of Ministries</i> .....	156
2. The Italian Action Plan for the New Economy .....	161
2.1 <i>A New Institutional framework</i> .....	161
2.2 <i>Preparation of the Action plan</i> .....	162
2.3 <i>Launch of the "Action Plan for the New Economy" (April 2000)</i> .....	164
<b>Luxembourg .....</b>	<b>171</b>
Introduction .....	173
1. The Info 2000 Committee and its recommendations .....	174
1.1 <i>Creation of the Info 2000 Committee (1995)</i> .....	174
1.2 <i>Reports on the Info 2000 Committee (1995 and 1996)</i> .....	174
2. Information Society Initiatives .....	177
2.1 <i>Interdepartmental working groups on Information Society</i> .....	177
2.2 <i>The Government, Internet projects and electronic administration</i> .....	177
2.3 <i>Initiatives of the Ministry of Education, Training and Sport</i> .....	178
2.4 <i>Initiatives from other actors</i> .....	179
3. Current Developments: towards "eLuxembourg" .....	180
3.1 <i>The "Luxembourg Offensive": towards eLuxembourg</i> .....	180
3.2 <i>Recent developments</i> .....	182
<b>Netherlands .....</b>	<b>183</b>
Introduction .....	185
1. The Dutch Action Programme for the Information Superhighways and follow-up initiatives .....	186
1.1 <i>Publication of the Dutch "Action Programme for the Information Superhighways: From Metaphor to Action" (December 1994)</i> .....	186
1.2 <i>Further developments (1995-1997)</i> .....	187
1.3 <i>The re-calibration of the Information Superhighway Action Programme (April 1998)</i> .....	187
1.4 <i>Sectoral Actions plans</i> .....	189
2. The Dutch Digital Delta and further developments .....	191
2.1 <i>A new Information Society Strategy: "the Dutch Digital delta" (June 1999)</i> .....	191
3. Further Developments: focus on recent initiatives .....	197
3.1 <i>"Education On Line: connection to the Future": a new Action Plan for education (April 1999)</i> .....	197
3.2 <i>e-government: Contract with the future: A vision on the electronic relationship between government and citizen (May 2000)</i> .....	198
3.3 <i>Recent development concerning Internet and e-commerce</i> .....	200
<b>Portugal .....</b>	<b>201</b>
Introduction .....	203
1. From the Green Paper on Information Society to implementation of actions .....	204
1.1 <i>Information society: a priority for the Portuguese Government</i> .....	204
1.2 <i>Green Paper for the Information Society in Portugal (April 1997)</i> .....	205
1.3 <i>Implementation of the Information Society Green Paper and Appraisal of achievements</i> .....	206
2. Towards a knowledge-based information society: Operation Information Society 2000-2006 .....	210
2.1 <i>Objectives and targets</i> .....	211
2.2 <i>Programme content</i> .....	212
2.3 <i>Recent developments</i> .....	214

<b>Spain .....</b>	<b>217</b>
Introduction .....	219
1. Historical background .....	220
1.1 Spanish ministerial programmes related to IS launched prior to 1998 .....	220
1.2. Regional Information Society Strategies .....	221
2. Towards a Spanish national Information Strategy.....	223
2.1 Preparatory work during 1998.....	223
2.2 Interministerial Commission for the Information Society and new technologies (CISI) and the catalogue of governmental initiatives .....	224
2.3 The new Strategic Initiative on Information Society "INFO XXI: Information Society For all" (January 2000).....	225
2.4 Some highlights .....	230
2.5 Recent organisational changes .....	231
<b>Sweden.....</b>	<b>233</b>
Introduction .....	235
1. The first Swedish IT national strategy .....	236
1.1 The IT Commission at the centre of the Swedish Information Society (March 1994).....	236
1.2 The first Swedish IT strategy (March 1996) .....	236
2. Governmental IS initiatives .....	237
2.1 Activities of the IT Commission .....	237
2.2 Selection of public initiatives launched between 1996 and 1999 .....	238
3. The 2000 IT Bill "Information society for All": a new policy framework.....	242
3.1 The IT Bill "Information Society for all" (April 2000) .....	242
3.2 Focus on recent developments .....	247
<b>United Kingdom .....</b>	<b>251</b>
Introduction .....	253
1. The Information Society Initiative, an umbrella for Information Society .....	254
1.1 First sectoral strategies .....	254
1.2 The Information Society Initiative and its sub-programmes (1996).....	255
2. Our Information Age: the Government's vision .....	257
2.1 A new Government.....	257
2.2 "Our Information Age, the Government vision": a new strategy for the United Kingdom (May 1998).....	257
2.3 Realising the vision.....	260
2.4 Information Society in the devolved Administrations.....	263
3. "UK online" strategy .....	264
3.1 UK Online Annual Report (September 2000) .....	264
3.2 New developments: the "UK online" campaign .....	269
3.3 European and International co-operation.....	270
<b>Additional contributions .....</b>	<b>273</b>
<b>Norway.....</b>	<b>277</b>
Introduction .....	278
1 The Norwegian Way to the Information Society: .....	279
"Bit by Bit" .....	279
2. The eNorway action plan.....	280
2.1 Rationale and background .....	280
2.2. Central goals and issues in the eNorway action plan .....	281
3. Focus on some other initiatives .....	283
3.1 Electronic Commerce .....	283
3.2 Programme for E-commerce in the Norwegian Public Sector .....	285
3.3 Electronic Government.....	285
3.4 Competence, ICT and learning .....	288
3.5 Culture Net Norway .....	289

<b>Iceland .....</b>	<b>291</b>
Introduction .....	293
1. Information Society Strategy for Iceland.....	294
1.1 <i>First Government policy</i> .....	294
1.2 <i>The Icelandic Government's Vision of the Information Society 1996</i> .....	294
1.3 <i>Development project 1997-2002 steered by The Information Society Taskforce</i> .....	295
2. Implementing the Information Society in Iceland - Action Plans .....	295
2.1 <i>Policy Action Plans</i> .....	295
2.2 <i>Information policy in the health care system - Ministry of Health and Social Security</i> .....	296
2.3 <i>Action Plans within Ministry of Education, Science and Culture - Action Plans and Policies 1996-1999</i> .....	296
2.4 <i>Funds for Information Society Strategy Projects 1999-2000</i> .....	296
2.5 <i>Project Plan for the Development of e-commerce and e-government 2000-2002</i> .....	296
2.6 <i>Action Plans within the Ministry of Education 2000</i> .....	298
2.7 <i>Wireless networks and laptops in upper-secondary schools</i> .....	298





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## Introduction

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The national and regional strategies for the development of the Information Society in the European Union were studied in the ESIS survey, which covered the years 1997 and 1998 (see background information on the ESIS project above). Since then, a lot has been achieved and progress towards Information Society has been quick. However, new needs and challenges have emerged. Member States are now re-evaluating their policy goals and priority areas and are re-calibrating their policies and planning new measures.

Therefore, it appeared timely to provide an overview of the public strategies for the Information Society in the Member States of the European Union, taking into account past, current and proposed initiatives. The present document has been prepared in this perspective. It records in some detail the content of the strategies and actions plans of the European Union Member States towards the Information Society. Of equal importance, the overview enables the identification of the varying speed and progress of the different countries of the European Union in their approach to - and results in - Information Society development. It enables the analysis of both similarities and differences between countries, providing a valuable picture of the programmes supporting the development of the Information Society in the European Union. Furthermore, it identifies a number of sources, web sites, documents and policies that collectively enabled the development of this overview of the evolution of these strategies at the European level.

This report has been prepared bearing the **eEurope initiative** in mind and its emphasis on data collection and benchmarking Information Society developments. This is especially true as the eEurope initiative recognises the central role to be played by the Member States of the European Union in achieving the targets of the Lisbon European Council and setting further targets, providing adequate funding and removing obstacles for the development of the Information Society.

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This report results from deskwork carried out on the basis of existing ESIS material and new public documents and information that have been produced as paper based publications and/or made available on the Internet. Although we have tried to be as complete as possible, some material will inevitably be missing. The Report Team will be happy to receive additional information for inclusion in a future updated version (contact: Isabelle Chatrie [isa@ll-a.fr](mailto:isa@ll-a.fr) ).

Moreover, it is essential to add that the report's focus has been on Information Society Strategies and not on all policies, measures and bodies related to Information and Communication Technologies.



# General Overview



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## **Towards Information Society Public Strategies**

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From 1994, Member States of the European Union started to prepare and release national Information Society development strategies.

A group of countries began earlier than the others and published reports and action plans as early as 1994 or 1995. This was the case with the Netherlands, Denmark and Finland. The other governments started later. In 1996, Sweden, Germany and Luxembourg published strategies or national programmes. In 1997, Belgium and Ireland brought out their own strategies.

Several Governments started early on with an "Information Society Initiative", a "White paper" or a "governmental agenda" but they were more of an impulse and a framework for discussion and studies. They have been followed by more concrete action plans a year or more afterwards. This was the case with Portugal (Initiative launched in 1996, Strategic Green paper published in 1997), Austria (Initiative launched in 1994, Strategy and Action Plan published in 1997), Italy (first "governmental agenda" in 1995; a "reference scheme" in 1997) and Greece (first White Paper in 1995; second White Paper in 1999).

The United Kingdom started in 1996 with an Umbrella programme, the "Information Society Initiative" which embraced several areas. There was not a global strategy until 1998. Spain conducted several activities related to the Information Society but the general strategy was not adopted until November 1999. France launched a call for Information Highway projects in 1994 on the basis of several reports commissioned by the Government, in particular the "Théry Report". However, the first Governmental Action Programme for the entry of France into the Information Society was released at the beginning of 1998.

Some national strategies appear as pluri-annual documents with a one-year updating process and a regular evaluating/auditing system. The rapid pace of development creates a need for constant monitoring and progress assessment and the consequent revision and adaptation of objectives.

Some strategies are detailed and result in associated action plans, including funding and precisely quantified targets. This is now reinforced in countries where an Information Society strategy is implemented in the framework of the European Community Support Framework via "Operational programmes" covering 2000-2006, such as Greece or Portugal. Others provide a comprehensive framework incorporating measures but few precise deadlines.

Besides these national strategies, governments often develop sectoral strategies and action plans. Key sectors in this regard are education/training, electronic commerce and electronic government.

Also, regional governments have progressively developed their own IS strategies. The involvement of regions depends on the degree of decentralisation in each country, which leads to varying levels of autonomy, competencies and associated human and financial resources. It is clear that most regional and local strategies are found in Federal or largely decentralised countries. The situation also depends on other factors, such as economic development, the emergence of a regional leader, the presence in the region of a group of dynamic companies and the support of EU programmes, such as the Regional Information Society Initiative.

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## Key actors

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The Member States have followed a number of different routes in developing their national strategies or action plans. In some countries, specific organisations pilot the process or play a key role such as the IT Commission in Sweden, a two-member committee in Denmark, SITRA in Finland or the Mission for Information Society in Portugal.

Other specific groups have been established or are being established with different names but sometimes the same functions:

- National consultative committees for Information Society with members from the public and private sector (Finland, Belgium)
- Advisory bodies or information society commissions (Ireland, Portugal, Sweden)
- Interministerial Committees or Committees of Ministers (France, Luxembourg, Spain, Portugal, United Kingdom, Greece)
- Public Steering Committees or interdepartmental groups for Information Society larger than interministerial committees (Ireland, Luxembourg, United Kingdom, Italy)
- High level groups of experts, working groups and IS Observatories (Austria, Netherlands, Spain, Denmark, Greece)
- Authority for IT in public administration (Italy, France)
- Agency for telecommunications development (Belgium)
- Strategic Internet Committee (France)
- Coordination centre of territorial authorities (Italy, Austria)
- Information society Fora associating public and private partners from all sectors and providing a societal discussion platform from all sectors (Finland, Germany, Greece, Italy, Netherlands, United Kingdom, Portugal, Spain).

In some countries, a single ministry has directly managed the development and implementation of the IS strategy. In other countries, this process has been managed collectively by a group of ministries. Examples of the different types of ministries involved are: "Research and IT", "Science and Technology", "Research and Education", "Finance", "Transport and Telecommunications", "Trade and Industry", "Industry, Employment and Communications", "Economic Affairs", "Economy and Telecommunications".

In other countries, the Prime Minister, the Cabinet Office or the Council of State have taken the lead, such as in France, Italy, the UK, Greece, Ireland, Luxembourg, Belgium, etc. In such cases, small dedicated "policy development teams" and task forces have been established to carry out permanent preparatory work. Sometimes, "e-Ministers" or Ministers for Internet have been established (United Kingdom, Italy).

Very often, Education Ministries have released separate actions plans for IT in education. Also, ministries of civil service or public administration are increasingly playing a key role in the field of electronic administration but dedicated structures or "managers" for e-government have also been established.

Parliaments have also been influential catalysts of government action, as controllers and as topical contributors through various reports, especially in Sweden, Denmark and Netherlands.

Today, complex but more co-ordinated organisational systems have been established at high political levels in Member States. Interministerial co-ordination has been reinforced, often with IS correspondents within each ministry and interministerial committees. Public-private forums, permanent IS commissions and advisory bodies have been confirmed or created. Assignments are given to each of these structures and precise relationships and networking tools are defined to enable them to work together.

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## Key points

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Each of these public strategies has country specific aspects that are the consequence of many factors. These factors include the political situation and administrative situation (centralised or decentralised government), the degree of intervention by the State in the economy, the economic and social situation, the level of development of existing telecommunication infrastructures and business/household equipment, the presence of leading telecom companies, the degree of awareness amongst the general population and companies and the legal framework.

However, there are also many common features between the different public strategies and action plans; these similarities tend to be more evident, as a result of more concerted action between Member States, in particular in the framework of the launch of the eEurope initiative.

The key points arising from the analysis are the following:

- First of all, Information Society is now considered as a **major priority** for all European Union governments and is treated at a very high level. It is considered among the Member States that started early on that the time has come for further developments. They have evaluated, revised and updated their previous national strategies, setting new goals for future Information Society policies and strategies. Others have accelerated the process in 1999 and 2000 and many strategies and actions plans have just been released or will be released in the coming months. Several of them are presented as the national contribution to the eEurope initiative, which is welcomed and supported by Member States. Some strategies are also closely linked to the Structural Fund planning for 2000-2006.

New public IS policies are more **integrated and consistent**: it is becoming increasingly clear that ICTs have a major impact on the organisation and functioning of society. Therefore, ICT consequences have to be taken into account in all areas of public policy, in a coordinated manner.

- All fifteen EU countries have already engaged **lots of effort and resources** in raising awareness and the widespread the use of ICT, developing infrastructures, regulating and globally fostering the development of the Information society. It seems that these efforts will be substantially reinforced in the coming years, with huge amounts of funding to be engaged.

- The majority of governments try to precisely define the **limits of their role** and the precise spheres of action where public intervention can provide the greatest benefits.

It is often considered that the development of the Information Society is to a large extent fuelled by companies, organisations, consumers and citizens. They determine whether or not they wish to invest in ICT and use them because they see the opportunities offered and the benefits they can gain. Therefore, many developments in the ICT field are driven by the private sector without government intervention or investments.

However, it also appears that Governments do not wish to remain passive. The majority have taken steps, in differing ways and with differing strengths, to improve the global development of the Information Society in their country. Some actors have justified public intervention as they have believed it possible that market distortions and inadequate and ill-suited institutional and regulatory conditions could impede the use of ICT. Other arguments for the intervention of public authorities include the need for a solid national ICT base, both in terms of hard and soft infrastructures, the need to reduce the digital divide and provide chances for all to access ICT and the necessity of protecting citizens and economic actors in the information age. In the context of State modernisation, it is necessary for governments themselves to use ICTs to improve their own internal working processes and their delivery of external services and information. Benefits from this approach include reducing the cost of provision and access to public services, improving the efficiency and quality of public management systems, favouring the transparency of government actions and expanding the possible forms of democratic participation.

There is a strong will to associate representatives of the private sector and civil society through Information Society fora and other forms of public-private co-operation. Governments are also increasingly communicating their IS policies with the public, considering that education must play an important role in raising public awareness of the important changes deriving from ICT developments. Counterbalancing the government's education actions it is also important that they develop means of listening to the views and experiences of the general public. This will enable governments to regularly adapt their policies in accordance with the feedback they receive. This willingness on the behalf of governments to communicate ICT policies more widely also shows that Information Society issues are becoming a key component of modern political discourse.

- Today, the key words are **competence and skills, confidence, accessibility, quality of life and the modernisation of public administration** through ICT. **Regulatory and infrastructure issues** remain central but closing the digital divide is a question of increasing importance for all public actors. **Focus on people's needs and societal issues** are becoming a major concern.
  - ✓ The **education sector** has been among the primary targets of the first IS public strategies. Education is still a central concern, consisting mainly of equipping and connecting schools to the Internet, training teachers, developing educational tools and implementing school networks and electronic meeting places. Many governments are now adopting IT driving licences (including for teachers) and IT grades at schools.

In overall terms, education issues are now well underway, even if more progress is still needed. Today, in several Member States, emphasis is increasingly placed on **life-long learning and training processes**.



- ✓ All EU Member States are worried by the **increasing gap concerning ICT skills**. The explosion of ICT has led to considerable demand for IT specialists in most of the industrial nations but the information sector is suffering from a considerable shortage of skilled personnel. Therefore, several Governments have prepared National Skills frameworks and launched initiatives to alleviate this shortage of qualified personnel in ICT in co-operation with vocational training programmes, technical colleges and universities. This involves further education programmes as well as specific initiatives and "conversion courses" targeted at introducing job seekers and other people who would like to work with ICTs to the skills necessary to succeed in this sector. Governments are also seeking to attract foreign ICT experts to their country in order to fill the many vacancies in ICT related positions. One can cite the German Green Card Initiative, the Irish FIT Action Plan (Fast Track to Information Society), the Dutch Task Force on ICT shortages, the UK University for Industry programme and Skills for the Information Age, and measures to ease IT labour force entrance in France and in Ireland (e.g. visa legislation and work permit).
- ✓ Many governments are working on the concept of "**ICT for all**" or "**Internet for all**". As stated in the Dutch document "Contract for the future, A vision on the electronic relationship between Government and citizen", May 2000, Governments are faced with the problem of the "*haves and have-nots, dos and do nots and knows and know-nots*". Lots of effort is now dedicated to reducing inequalities in access and accessibility.

Governments are promoting numerous initiatives consisting of facilitating sales of PCs to households via tax incentives, recycling of business PCs, leasing schemes and gifts of multimedia equipment from employers to employees. Furthermore they are encouraging reduced telecommunication and Internet access costs, implementing Internet access points in public areas, libraries, cultural spaces, post offices, schools and launching major awareness raising campaigns. They are also developing an understanding of the social implications of the information revolution. Some initiatives are targeted at specific groups such as women, senior citizens, the disabled, students, and inhabitants of remote areas, islands and less favoured regions. Therefore, we can find several strategies entitled "Information society for all".

- ✓ In some countries, the development of the Information Society at the **regional and local levels** is considered as a fundamental pillar for the emergence of a true networked society. This is reinforced by the question of the unbundling of the local loop, which will favour a deeper involvement of local and regional authorities in Information Society projects.
- ✓ **Protecting citizens' rights in the Information Society** is a central concern of public strategies, which results in legislative, regulatory and organisational measures and guidelines covering a broad range of issues. These include:
  - the protection of citizens' rights: access to information, protection of information of a private nature,
  - consumer rights,
  - intellectual property issues: copyright, digital exploitation of work,
  - the legal aspects of electronic transactions: validity of transactions, digital signatures,
  - labour and insurance legislation for telework,
  - illegal matters: crime in cyberspace, safe surfing on the Internet, unlawful Internet content, protection of minors.
 In several fields, self-regulation and the preparation of codes of conduct are encouraged.

- ✓ **Electronic commerce** is also an important concern and several e-commerce and digital action plans have been prepared. Emphasis is put on regulation to foster confidence and security (electronic signature, encryption, Internet regulation with a focus on self-regulation and codes of conduct, data protection and privacy and consumer rights). Promoting the use of e-business solutions by SMEs, providing risk capital for Internet starts-ups and encouraging electronic commerce between business and administration (public procurement, e-tendering) are also seen as key action areas.
- ✓ **"E-Government"**, "digital Government" and "electronic administration" appear as a major challenge and task for Governments. Distinct action plans are being prepared and implemented, often by dedicated structures and managers.

There are three central tasks:

- "Open Government": increasing the quality of electronic government information. The majority of ministries and public agencies are now present on the Internet and Governments have issued guidelines and rules concerning the dissemination of public information. Government Internet Portals and one-stop-shops are also being implemented (overheid.nl, open.gov.uk, help.gv.at, danmark.dk, Infocid.pt, SverigeDirekt.se, etc.).
  - "Customer orientated Government": developing electronic services and "customer orientated" interactive service provision (the "electronic service broker"), for front office operations (authentication service, signature certifications, electronic forms, help desks and call centres, public e-mail and contact directories, jobs banks) and back office operations (transaction monitoring, information exchange, client feedback, etc.). Many administrative areas are concerned: land registry, taxes, passports, welfare and social service, revenue etc. Several Member States are developing Public Key Infrastructures (PKI), personal public service numbers (on the model of social security numbers) and Public service cards or electronic identity cards. One goal is to develop 24X7 Government services.
  - "Networked Government": improve internal working procedures within the central government but also between government agencies (regional representatives of Ministries) and decentralised public authorities (regional and local authorities). Many Governments implement cross-government knowledge management systems and Intranets, embedding Knowledge Networks in operational practice.
- ✓ New priorities for **research** programmes are more oriented towards IT. Also, telecommunication infrastructures for research are being extended, consolidated and boosted via high speed broadband research networks. Bridges and increased links between research and business are encouraged as well as the creation of IT Universities, IT Research Centres, IT Science Parks and clusters dedicated to electronic technologies.
  - ✓ Several Member States are concerned with the protection of their **culture heritage and language**, specifically on the Internet. Spanish, Portuguese, French and German speaking countries as well as Greece and the Nordic countries are developing programmes to promote wider use of their language, to support research on technical language tools and software, to promote cultural **content** and to favour the development of language communities in the new globalised environment (e.g. Greek, Portuguese and Spanish people abroad or within the French international community).

- ✓ Among the most advanced EU Member States in terms of IS development, there is now a concern about a **sustainable Information Society**, which is translated by using IT to promote ecologically sustainable development, helping to reduce the impact of transportation on the environment and public health and making IT equipment part of a sustainable, cyclical flow of materials ("**Green IT Policy**"). In these countries, issues related to **IT and democracy** are also well advanced. Electronic voting systems from home, democratic virtual meeting places and forums are good examples of this process.
- Several Member States feel the need to improve **measurement of the digital economy**. This issue gained real importance quite recently e.g. within the OECD and Eurostat. Despite the fact that there is already a number of national and international market surveys, prepared by consultancy companies and market analysts, many governments wish to approach with this problem more "scientifically". They are developing Information Society indicators, e-commerce monitors or "barometers", audits and assessments of achievement. They are also launching benchmarking studies to compare their achievements with other countries.

## Public Strategy Overview: main documents, key actors

	First strategic documents	Key actors	Latest strategic documents	Key actors
<b>Austria</b>	<ul style="list-style-type: none"> <li>• 1994: Telecommunication Initiative Austria</li> <li>• 1995: Austrian's way into the Information Society"</li> <li>• Oct. 1997: Austrian strategy and Action plan for Information Society</li> </ul>	<ul style="list-style-type: none"> <li>• Federal Chancellery</li> <li>• Federal Ministry of Science and Transport</li> <li>• Information Society Working Group and 10 Consultative experts groups</li> <li>• Austrian Platform for telematic Applications APTA</li> </ul>	Spring 2000: <ul style="list-style-type: none"> <li>• Österreich digital</li> <li>• Government's Information and Communication Project</li> <li>• "e-Austria in e-Europe" (Spring 2000)</li> </ul>	<ul style="list-style-type: none"> <li>• Federal chancellery</li> <li>• Federal Ministry for Education, Science and Culture</li> <li>• Federal Ministry of Transport, Innovation and Technology</li> <li>• Federal Ministry of Economic Affairs and Labour</li> <li>• Independent institution for telecom., information technologies and media (to be set up).</li> <li>• Austrian Platform for telematic Applications APTA</li> </ul>
<b>Belgium</b>	<ul style="list-style-type: none"> <li>• May 1997: Federal Action Plan for the Information Society</li> <li>• April 1994: Multimedia in Flanders</li> <li>• 1995: Walloon Region's telecommunication policy followed in Nov. 1997 by the Déclaration de politique régionale.</li> </ul>	<ul style="list-style-type: none"> <li>• Council of Federal Ministers</li> <li>• Federal Office for Scientific, Technical and Cultural Affairs (OSTC)</li> <li>• Ministry for the Economy and Telecommunications (Information Society Follow up service)</li> <li>• Institute for the Promotion of Innovation by Science and Technology in Flanders - IWT</li> <li>• Walloon Task force set up by the Minister-President</li> </ul>	<ul style="list-style-type: none"> <li>• Update of the Federal Action Plan for the Information Society</li> <li>• 1999: a new project for Flanders - the Colour memo; Flanders Digital Action Plan</li> <li>• 1999: Contract for a future for Wallonia</li> </ul>	<ul style="list-style-type: none"> <li>• Prime Minister and Council of Ministers</li> <li>• National Consultative Committee on Information Society (Oct. 1999)</li> <li>• ICT-Manager for the federal public administration</li> <li>• Prime Ministers</li> <li>• Agence Wallone des Télécommunications (AWT February 1999)</li> </ul>

	<b>First strategic documents</b>	<b>Key actors</b>	<b>Latest strategic documents</b>	<b>Key actors</b>
<b>Denmark</b>	<ul style="list-style-type: none"> <li>Oct. 1994: White paper "Info-Society 2000" (followed by the first IT policy action plan in 1995 "From vision to action", annual IT Policy action plans)</li> </ul>	<ul style="list-style-type: none"> <li>Ministry of Research</li> <li>Two Member Committee</li> </ul>	<ul style="list-style-type: none"> <li>Dec. 1999: IT policy strategy: "Realigning to a Network Society" (following the Digital Denmark report "Conversion to a Network Society")</li> </ul>	<ul style="list-style-type: none"> <li>Digital Denmark (2 member Committee)</li> <li>Ministry of Research and Information Technology</li> <li>Reference group of experts</li> </ul>
<b>Finland</b>	<ul style="list-style-type: none"> <li>Jan. 1995: "Finland towards the Information Society- A National Strategy" (followed by several position papers and reviews)</li> </ul>	<ul style="list-style-type: none"> <li>Ministry of Finance</li> <li>National Committee for Information Society (May 1996)</li> <li>Information Society Forum (May 1996)</li> </ul>	<ul style="list-style-type: none"> <li>Dec. 1998: Second strategy ""Quality of Life, Knowledge and Competitiveness" (revision process started in 1997)</li> <li>June 2000: report on the Development of the Information Society in Finland</li> </ul>	<ul style="list-style-type: none"> <li>Council of State</li> <li>Ministry of Finance</li> <li>Ministry of Transport and Communications</li> <li>SITRA (Finnish National Fund for Research and Development)</li> <li>National Committee for Information Society (new members nominated in July 1999)</li> </ul>
<b>France</b>	<ul style="list-style-type: none"> <li>Breton, Théry and Miléo reports (1994)</li> <li>Call for Information Highway projects (1994)</li> <li>Jan. 1998: Governmental Action Programme "Prepare the entry of France in the Information Society" (PAGSI) and Ministerial Action Programmes (PAMSI)</li> </ul>	<ul style="list-style-type: none"> <li>Prime Minister</li> <li>Ministry of Trade, Industry and Posts and Telecommunication</li> <li>Inter-Ministerial Committee for the Information Society (CISI)</li> <li>IS ministerial correspondents information and communication legal and technical department (SJTI)</li> </ul>	<ul style="list-style-type: none"> <li>Updated PAGSI in 1999 and 2000</li> </ul>	<ul style="list-style-type: none"> <li>Prime Minister</li> <li>Inter-Ministerial Committee for the Information Society (CISI)</li> <li>Ministry of Economy, Finance and Industry and IS ministerial correspondents</li> <li>Inter-ministerial technical support mission for the ICT dev. in administration</li> <li>Strategic Internet Committee for IT (to be set up in Autumn 2000)</li> </ul>
<b>Germany</b>	<ul style="list-style-type: none"> <li>Feb. 1996: "Info-2000: Germany's Way to the Information Society" (followed in 1998 by the Progress Report of the Federal Government Info 2000 strategy)</li> </ul>	<ul style="list-style-type: none"> <li>Federal Ministry of Economy and the Federal Ministry of Education, Science, Research and Technology</li> <li>Forum Info 2000 (Oct. 1996)</li> </ul>	<ul style="list-style-type: none"> <li>Nov. 1999: Action Programme "Innovation and Jobs in the Information Society of the 21<sup>st</sup> Century"</li> </ul>	<ul style="list-style-type: none"> <li>Federal chancellery</li> <li>Federal Ministry of Economy and Technology (BMWI)</li> <li>Information society Forum (Dec. 1999)</li> <li>Alliance for Jobs, Training and Competitiveness</li> </ul>
<b>Greece</b>	<ul style="list-style-type: none"> <li>1995: White Paper "Greek Strategy for the Information Society: A tool for employment, Development and Quality of Life".</li> </ul>	<ul style="list-style-type: none"> <li>Ministry of Industry</li> <li>General Secretariat for Research and Technology - GSRT</li> <li>Information Society Forum</li> </ul>	<ul style="list-style-type: none"> <li>Feb. 1999: 2<sup>nd</sup> White Paper "Greece in the Information Society: Strategy and Actions"</li> <li>Operational Programme for the Information Society 2000-2006</li> </ul>	<ul style="list-style-type: none"> <li>Prime Minister Office</li> <li>National Committee for eCommerce</li> <li>IS Observatory</li> <li>National Committee for the Information Society, chaired by the Prime Minister</li> </ul>
<b>Ireland</b>	<ul style="list-style-type: none"> <li>March 1997: "Information Society Ireland: Strategy for Action" (followed by a proposal for an action plan "Implementing the IS: a framework for action" in Dec. 1998 and reports from the Information Society Commission)</li> </ul>	<ul style="list-style-type: none"> <li>Information Society Steering Committee set up by the Minister for Enterprise and Employment (Forfàs March 1996)</li> <li>Information Society Commission (May 1997)</li> </ul>	<ul style="list-style-type: none"> <li>Jan. 1999: "Implementing the Information Society in Ireland: An Action Plan" (followed by progress reports)</li> </ul>	<ul style="list-style-type: none"> <li>Prime Minister's Office (Taoiseach).</li> <li>Interdepartmental Implementation Group for the Information Society</li> <li>Policy Development Team based in Taoiseach</li> <li>Information Society Commission - ISC</li> </ul>

	<b>First strategic documents</b>	<b>Key actors</b>	<b>Latest strategic documents</b>	<b>Key actors</b>
<b>Italy</b>	<ul style="list-style-type: none"> <li>• 1995: "A Government Agenda for Promoting the Development of the Information Society" followed in June 1997 by "Promotion of Information Society Development in Italy: a reference scheme"</li> </ul>	<ul style="list-style-type: none"> <li>• Information Society Forum (Sept. 1996)</li> <li>• Authority for IT in the Public Administration (AIPA)</li> </ul>	<ul style="list-style-type: none"> <li>• April 2000: "Action plan for the New Economy"</li> </ul>	<ul style="list-style-type: none"> <li>• Prime Minister Office and Task Force</li> <li>• Information Society Forum</li> <li>• The committee of Ministers for the Information Society</li> <li>• The Inter-Departmental Study and Working Group</li> <li>• Coordination Centre of Territorial Authorities</li> <li>• "Internet Minister"</li> </ul>
<b>Luxembourg</b>	<ul style="list-style-type: none"> <li>• Oct. 1995: First conclusions and Recommendations of the Info 2000 Committee</li> <li>• Nov. 1996: Info 2000 Committee report on the role of the State in the Information Society</li> </ul>	<ul style="list-style-type: none"> <li>• Info 2000 Committee</li> <li>• Interdepartmental working groups on Information Society</li> <li>• Centre de Recherche Public Henry Tudor</li> <li>• Data-processing Centre of the State - Centre of Communication of the Government - Service Information and Press</li> </ul>	<ul style="list-style-type: none"> <li>• The Luxembourg Offensive: national action programme e-Luxembourg (to be published in Autumn 2000)</li> </ul>	<ul style="list-style-type: none"> <li>• Prime Minister (also State Minister and Minister of Finance)</li> <li>• Ministry of Communication</li> <li>• National Committee for Information Society - CNSI (June 2000).</li> </ul>
<b>Netherlands</b>	<ul style="list-style-type: none"> <li>• Dec. 1994: "Action Programme for the Information Superhighways: From Metaphor to Action (followed by the recalibration document of Action Programme in April 1998)</li> </ul>	<ul style="list-style-type: none"> <li>• Several ministries involved (with a key role of the Ministry of Economic Affairs)</li> <li>• Working groups with the private sector on infrastructures and services</li> </ul>	<ul style="list-style-type: none"> <li>• June 1999: White Paper "The Dutch Digital Delta"</li> </ul>	<ul style="list-style-type: none"> <li>• Dutch Cabinet</li> <li>• Several ministries</li> <li>• External forum</li> </ul>
<b>Portugal</b>	<ul style="list-style-type: none"> <li>• 1996: National Information Society Initiative</li> <li>• April 1997: Green paper on the Information Society (followed by appraisal report in 1999).</li> </ul>	<ul style="list-style-type: none"> <li>• Minister of Science and Technology</li> <li>• Mission for the Information Society - MSI (march 1996)</li> </ul>	<ul style="list-style-type: none"> <li>• "Towards a knowledge-based Information Society 2000-2006: Operation "Information Society".</li> </ul>	<ul style="list-style-type: none"> <li>• Role of the Ministry of Science and Technology reinforced as the main coordinator on Information Society Policy</li> <li>• Interministerial Committee for Information Society to be set up</li> <li>• Permanent Forum on Scientific and Technological Policy</li> <li>• Mission for the Information Society</li> </ul>

	<b>First strategic documents</b>	<b>Key actors</b>	<b>Latest strategic documents</b>	<b>Key actors</b>
<b>Spain</b>	<ul style="list-style-type: none"> <li>Catalogue of governmental initiatives</li> </ul>	<ul style="list-style-type: none"> <li>Inter-ministerial Commission for Science and Technology (CICYT)</li> <li>Key roles of the Ministry of Industry &amp; Energy and the Ministry of Education &amp; Science</li> <li>Advisory Group on the Information Society (1998)</li> <li>Information Society Forum (Oct. 1998)</li> </ul>	<ul style="list-style-type: none"> <li>Nov. 1999/January 2000: Strategic Initiative for Information Society: "INFO XXI: Information Society for All" 2000-2002</li> </ul>	<ul style="list-style-type: none"> <li>April 2000: ministerial restructuration: coordination role for the new State Secretariat for Telecommunications and Information Society (Ministry of Science and Technology)</li> <li>Interministerial Commission for the Information Society and new technologies - CISI (July 1999)</li> </ul>
<b>Sweden</b>	<ul style="list-style-type: none"> <li>March 1996: IT Government Bill defined the first IS strategy</li> </ul>	<ul style="list-style-type: none"> <li>IT Commission (March 1994)</li> <li>Prime Minister</li> <li>Ministry of Transport and Communication</li> </ul>	<ul style="list-style-type: none"> <li>March 2000: IT Government Bill "Information Society for All"</li> </ul>	<ul style="list-style-type: none"> <li>Ministry of Industry, Employment and Communications</li> <li>IT Commission (4<sup>th</sup> 1998-2003)</li> </ul>
<b>UK</b>	<ul style="list-style-type: none"> <li>1996: Information Society Initiative (acted as an umbrella)</li> </ul>	<ul style="list-style-type: none"> <li>Department of Trade and Industry</li> </ul>	<ul style="list-style-type: none"> <li>May 1998: policy statement "Our Information Age: the Government's Vision" (in conjunction with the Competitiveness White Paper, "Our Competitive Future: Building the Knowledge Driven Economy")</li> <li>1999: Modernising Government White Paper</li> <li>e-commerce@its.best.uk report</li> <li>2000: UK Online</li> </ul>	<ul style="list-style-type: none"> <li>Prime Minister and Cabinet Office</li> <li>an e-minister</li> <li>Information Age Ministerial Network</li> <li>A responsible for e-government issues</li> <li>an e-Envoy and its office</li> <li>A network of e-commerce co-ordinators.</li> <li>The Information Age Government Champions Group (IAGC)</li> <li>Forum The Information Age Partnership (IAP):</li> </ul>
<b>Norway</b>	<ul style="list-style-type: none"> <li>1996: "The Norwegian way to the Information Society. Bit by Bit"</li> </ul>	<ul style="list-style-type: none"> <li>State Secretary Committee for IT</li> </ul>	<ul style="list-style-type: none"> <li>2000: eNorway action plan</li> </ul>	<ul style="list-style-type: none"> <li>Prime Minister</li> <li>Government eEnvoy</li> <li>Ministry of Trade and Industry and several other ministries</li> </ul>
<b>Iceland</b>	<ul style="list-style-type: none"> <li>1996: "The Icelandic Government Vision of the Information Society"</li> </ul>	<ul style="list-style-type: none"> <li>Prime Minister</li> <li>Committee and 9 work groups appointed by the Ministry of Industry and Commerce and chaired by the Minister of Parliament</li> </ul>	<ul style="list-style-type: none"> <li>1997-2002: the development project for the Information Society</li> <li>March 2000: new Project Plan for the Development of e-commerce and e-government</li> </ul>	<ul style="list-style-type: none"> <li>Information Society Task Force - under the auspices of the Prime Minister Office</li> </ul>

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## Country Summaries

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### Austria

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Since accession to the EU, a process that involved important structural adjustment and regulatory reform in telecommunications policy, the development of the Information Society in Austria has been quick.

Considering that the Digital Economy can provide huge opportunities for the development of the Austrian economy and employment, the Austrian Government has made early development of the Information Society a priority. In 1994, it launched the Telecommunication Initiative Austria and defined "The Austrian's way into the Information Society" in 1995. In 1997, the Federal government presented the Austrian strategy and Action plan for Information Society.

Today, it is considered as a key economic, social and political challenge. As stated in the new governmental programme, *"Austria must fully and actively take part in the vigorous development of the new technologies and use its innovative potential to the full"*. In order to meet these key challenges Austria has defined a comprehensive strategy and has implemented a set of measures to take Austria into the knowledge-driven economy. Key to this approach are the "Österreich digital", the "Government's Information and Communication Project" (Das Informations- und Kommunikationstechnologie-Projekt) and the initiative "e-Austria in e-Europe", launched in spring 2000 with the identification of 14 key areas for future development: e-learning and Internet, Public Administration: e-Government, Economy: e-Business, Tourism, ICT for Rural Areas, Social Domain, Justice, Art and Media, Research and Technology, Finance, National Defence, Internal Affairs, Foreign Affairs, Museums and Cultural Heritage.

In parallel, Austrian Länder have developed their own strategy and programmes, in relation to the Federal Government and within the interregional co-operation framework provided by the Austrian Platform for Telematic Applications (APTA).

### Belgium

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Belgium is a Federal State which consists of 3 communities (the Flemish Community, the French Community and the German-speaking Community) and 3 regions (the Flemish Region, the Brussels Capital Region and the Walloon Region). The country is further divided into provinces and municipalities. In this decentralised context, each level has been assigned certain competencies with regard to the Information Society and telecommunication infrastructures. Each level has undertaken, financed and supported its own different strategy and projects aimed at promoting the development of the Information Society.

In the past, actions and initiatives concerned with the transition to the Information Society were mainly undertaken at the regional and community level. For example, the Flemish region issued a policy paper entitled "Multimedia in Flanders" in 1994 in the framework of its general strategy plan "Flanders-Europe 2002". In 1999, the new regional Government of Flanders presented a Digital Action Plan and launched a general public debate on a "A new project for Flanders" based on a policy paper entitled "The Colour Memo".

Concerning the Walloon region, a task force on telecommunications was established in early 1995 and several programmes were launched, in particular the WIN project (Wallonia Intranet). The development of ICTs and the creation of an "integrated Knowledge Society" are two of the 4 key priorities defined by the Walloon Government in the "Contract for a future for Wallonia", adopted in 1999.

Prior to 1997, the Federal State's policy concerning Information Society was conducted in the framework of support programmes for the diffusion of telecommunications and multimedia. In May 1997, the Federal State started an umbrella policy with its Federal Action plan for the Information Society. In 1999, the new Federal Government announced several new structuring projects for the development of the Information Society: emphasis is put on the modernisation of the Federal administration to move *"from the Middle Ages to the virtual services of the XXI century"*. A National Consultative Committee and an ICT-manager for the federal public administration have been appointed. Belgium also presented its position concerning "Belgium in eEurope" where the need for a more balanced integration of economic reforms, employment and social cohesion is stressed in order to achieve "a Europe of innovation and knowledge". Furthermore, the paper argues that policies seeking to help the development of the Information Society must take into account the potential of the role to be played by SMEs.

## Denmark

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It is apparent that the transition to an Information Society has already begun in Denmark. As early as 1994, Denmark developed an IT strategy which has been accompanied by yearly updated Action Plans. Also in 1994, Danish IT policy was placed in a single ministry, the Ministry of Research, because it was considered that IT-development would be such a huge challenge that it would imply changes in society on a par with those experienced during the industrial revolution. During the first 5 years, Danish IT-Policy primarily focused on practical issues, such as liberalisation, infrastructures, hardware in education and several major projects for the public sector.

The Danish Government considered in the autumn of 1999 that the time had come for further development and set new goals for a future IS policy strategy. In particular, the Government now wishes to change the focus from the goal of having the greatest possible spread of IT to "IT as a tool in line with other goals" such as the Danish welfare model, employment and competitiveness. Therefore, the Minister of Research and IT initiated a re-evaluation of the Danish Policy. In November 1998, a new two-member committee was appointed under the heading Digital Denmark as it was considered that "Digital Denmark" should involve the whole Government and not only the Ministry of Research and IT. Following a discussion Paper entitled "Digital Denmark: conversion to the network society" published in November 1999 by the Committee for Digital Denmark, the Ministry of Research and IT, jointly with other ministries, published the new Danish IT Policy Strategy "Realigning to a Network society" in December 1999. The new strategy contains 6 objectives to be attained through 37 concrete initiatives:

- A modern future-proof telecommunications infrastructure to which as many Danes as possible are to have access at the lowest possible cost.
- A Network Society for all, with a code of fundamental rights for citizens to benefit from security and comfort on the Internet.
- Life-long learning
- e-commerce
- 24 hours/day digital Administration
- IT-Lighthouses, IT Maps and IT annual Reviews to improve the efficiency and monitoring of IT policy.

A range of other miscellaneous measures are planned in the field of education, widespread of computers and Internet access, research, green IT policy, etc.



## Finland

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Over the last few decades the Finnish have made a remarkable transformation from a farm/forest economy to a diversified modern digital economy. It is considered that the current success of Finland as a digital country results in part from a far-sighted, goal-oriented policy. During the first half of the 1990s, continuous work has been conducted on new programmes aimed at promoting the Information Society. Extensive studies were carried out with the aim of creating a national information strategy, which led in 1994-1995 to the first National Information Strategy, under the leadership of the Minister of Finance. Following on from this Finland launched a number of measures and revised action plans, at the national, regional and sectoral levels. Also, the Government has acted as a catalyst for the wide-take up of ICT and has been a leading user of ICT in delivering public services.

However, progressively the Finnish Information Society strategy has been criticised for placing too much emphasis on technology and competitiveness instead of citizens. Therefore, in 1997, a major evaluation and revision process of the 1994 Information Society Finnish strategy was engaged by the Finnish National Fund for Research and Development (SITRA), supported by the National Council for the Information Society and the Council of State. It resulted in a second strategic plan in December 1998 entitled "Quality of Life, Knowledge and Competitiveness" where Finland aims to position itself as a forerunner in the construction of an Information Society based on human values and sustainable development. Its vision is: *"Finnish society develops and utilises the opportunities inherent in the Information Society to improve the quality of life, knowledge, international competitiveness and interaction in an exemplary, versatile and sustainable way"*.

The cornerstones of this strategy can be summarised with 4 key words: Focus on People; Decentralisation; Permanent adaptation; Co-operation. Two fundamental principles underpin the Finnish vision: the development of ICT and infrastructure and balanced regional and local Information Society development.

Four main objectives have been defined:

- Electronic services and content
- Knowledge Management
- Network Economy
- Renewing the Public sector

Since then, actions lines have been followed by concrete actions, in particular the launch of 9 spearhead projects and development networks, which are considered as a concrete way of promoting the stated objectives and principles of development:

- Electronic Translation Services / e-government
- Personal Navigation services
- Electronic Learning
- Local and regional Information Society
- Content Industry
- Knowledge Intensive Work
- Teleworking
- Sustainable Information Society
- Business networking

Social welfare, healthcare and the popularisation of the Information Society are also involved in the Spearhead Project Network.

In June 2000, the Information Delegation presented to the Government a report on the Development of the Information Society in Finland.

## France

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France's decision to draw up a strategy for the development of the Information Society came late in comparison to the activities of several EU Member States and the EU itself. Despite several parliamentary and expert reports on the ICT revolution in the 1990s and the call for projects for Information Highway launched in 1994, France has fallen behind as stated by the Prime Minister Lionel Jospin: *"there were many obstacles. The importance of these technologies was not fully understood and there was a lack of commitment on the part of the Government"*. Therefore, it was only in August 1997 that the Prime Minister made France's entry into the Information and Communication Society a priority for government action.

But, since then, France has rapidly caught up. The last 3 years have been characterised by a proactive policy on the part of the French Government and much progress has been made. In January 1998, the Government published the governmental action programme promoting the development of the Information Society in France (PAGSI) with 6 priority areas:

- Education
- Culture
- Public services (e-government)
- Companies and the new economy
- Industrial and technological innovation
- Regulatory framework.

An inter-ministerial committee chaired by the Prime Minister and a major budgetary effort accompanied these actions. Finally, the plan sets out to assess, on an annual basis, the progress of the Action Programme. Two appraisals have since been conducted, the first in 1999 and the second in 2000.

At the beginning of the year 2000 the appraisal showed a satisfying level of achievement in the Action programme. Most of the 218 measures of PAGSI have already been implemented. People, businesses and administrations are rapidly adopting ICT tools and the Internet.

However, there is still progress to be made as France is not ranked amongst the leading countries in terms of IS development. Moreover, in spite of the decrease in the cost of equipment and rapid growth in the amount of equipment installed, sociological and geographic inequality with regard to access to information networks is still prevalent. There is a "digital divide". As announced during the last inter-ministerial committee in July 2000, the Government has decided to continue its action and launch major initiatives and legislative work in the coming years, focusing on Education, Internet access for all, new jobs and ICT training, ICT and the third sector, the unbundling of the local loop, international co-operation (North/South) and research and development for new ICT applications. New measures will be proposed by the French Government for e-Europe. In fact, assuming the European presidency from July 2000 to January 2001, the French government is also committed to playing a key role in the implementation of eEurope.

## Germany

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The Federal Republic of Germany consists of 16 states known as Länder. Both the Federal Government and the Länder Governments deal with the Information Society.

At the regional level, Länder have undertaken to design, finance and support their own Information Society development programmes, such as Baden-Württemberg media - perspectives for the development of the media in the state of Baden-Württemberg; Bayern Online - an IS programme of the Bavarian state government; Brandenburg's Information Strategy 2006 (BIS 2006); BRISE - Bremen's Regional Information Society Strategy Development; Initiative Information Society Schleswig-Holstein; The Berlin Way towards the Information Society; Media NRW - an initiative of the state of North Rhine-Westphalia.

The German Federal Government has for a long time seen the development of the Information Society in Germany as one of the most important tasks for the future. In February 1996, the German Cabinet passed an action plan entitled "Info 2000: Germany's way to the Information Society". The Federal Government has been implementing this programme ever since through numerous initiatives, supported by the Forum Info 2000 created in October 1996.

Since 1996, Germany has advanced a good deal on the way to the Information Society and according to the Government, Germany is on its way to a leading position in the Information Age. However, in November 1998, the new Federal Chancellor, Mr. Schröder, in his first statement as head of the Government Schröder made clear the importance for Germany to "embark on the Information Age". He announced that the Germany will prepare a new strategy and action programme and he stated that the most important objective for an IS policy is to reduce unemployment and create new job opportunities. "Germany's vision" will affect nearly every policy area.

One year after, in November 1999, a new Action Programme entitled "Innovation and Jobs in the Information Society of the 21<sup>st</sup> Century " was released. It is to run for a five-year period until 2005, the Government action programme is a cross-sectoral plan for accelerating the use and dissemination of ICT in all sectors of society in order to combat unemployment and to make Germany a leading nation in the IT sector in Europe. The strategy defines 4 strategic fields of action: Ensuring broad access to the new media and providing media competence; Increasing the confidence of suppliers and users with security legislation; Promoting state modernisation; Shaping change together.

Alongside the strategic fields of action are 10 general aims with concrete targets to be achieved by the year 2005:

- Wider Access to new media
- Access for all groups
- Consumer protection
- Education
- Research and development
- Lead in technology and Infrastructure
- Work organisation, innovative jobs and companies
- Ecology and sustainability
- Modernise the State through eGovernment
- European and International cooperation

The detailed program outlines the main aims, key measures and concrete targets necessary to enter the Information Age. The political sector, trade and industry, and society must join together in a joint effort to reach the targets. The new Information Society Forum and the Alliance for Jobs, Training, and Competitiveness can be helpful in this perspective.

## Greece

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In 1995, the Government prepared an Information Strategy White Paper entitled "*Greek Strategy for the Information Society: A tool for employment, Development and Quality of Life*". Presented by the Minister of Industry, Costas Simitris, now Prime Minister, it was the first of its type in Greece.

However, Greece is still less advanced in the course towards the creation of an Information Society as compared to other EU member countries. There are many obstacles in the development process in Greece, among which are the high telecommunications access costs as well as the relatively low level of familiarity of the average Greek with computers. While several of the actions included in the IS strategy have been implemented and a number of regulatory initiatives have begun, many others have since been reviewed or abandoned. Therefore, there was a need for a revised strategy to undertake a series of new reforms in all sectors of society in order to catch up with the emerging Information Society and close the gap between Greece and the other EU Member States.

This was done in February 1999 when a new White Paper "Greece in the Information Society: Strategy and Actions" was released by the Prime Minister, Costas Simitris who stated that "*the participation of Greece, as an equal, in the emerging Information Society is a major priority for the Government*". The document presents a comprehensive strategy for the future and a framework of actions with concrete goals, as well as means, initiatives and mechanisms for achieving them. It covers all sectors of the Greek economy and society. The White paper defines 10 major objectives:

- Open and effective government
- An education system for the 21st century
- Economic growth based on new technologies
- Improved job opportunities for and the skills of the workforce
- A better quality of life
- The promotion of Greek culture and civilisation
- The use of new technologies in mass media
- Regional participation in the information society
- Development of the national communication infrastructure
- Protecting citizens' rights in the Information Society

In order to implement the White paper, an Operational Programme for the Information Society (OPIS) is being adopted, in the framework of the Third European Community Support Framework (2000-2006). Around 2.3 million EUR should be dedicated to Information Society development over the seven next years around 5 lines of action:

- Education and culture;
- Modernisation the Public Administration and quality of life
- Employment and social inclusion
- The digital economy
- Communications.

There is a great potential for increased use of ICT and this programme offers Greece a unique opportunity to upgrade its position in the global economy and to improve the quality of life of its citizens.

## Ireland

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Ireland has performed remarkably well in the development of the Information Society. Ireland has been successful in attracting "information-based" operations, high profile telemarketing, sales and customer support services and research and development projects. Combining high technology manufacturing and IT services, the new image of Ireland is that of a "Digital Island".

This progress has resulted in part from the active commitment of the Irish Government since 1996. At that date, Ireland was ranked in the lower half of OECD countries on a number of other key telecommunications infrastructure and service parameters. There were low levels of awareness about ICT particularly in certain sectors of Irish society and geographical areas. Investment in ICT in education and in training was insufficient and there were emerging skill shortages in ICT with very few "citizen-centred public services". Moreover, while many groups were working at an international level (EU) or national (Nordic countries) to tackle the issues and challenges presented by the emerging Information Society, Ireland was not addressing these challenges.

Therefore, considering that *"It is the role of government to create the kind of environment in which the Information Society can flourish. Government action and support is also vital in helping to boost awareness, in regulation and in providing the right legal framework. It is vital, too, that government "shows the way" by being a model for service delivery, providing easily accessed citizen-centred services"*, the Government established an Information Society Steering Committee in March 1996.

One year later, in March 1997, the Steering Committee issued the first strategic document related to IS, "Information Society Ireland: Strategy for Action".

Since this first document, several initiatives have been launched. Further reports and recommendations have been issued to refine strategy and propose new initiatives as well as to measure and monitor Ireland's progress.

Much has been achieved since 1996. However, according to the National Competitiveness Council, *"there is no room for complacency if Ireland is to keep pace with competitor countries. Throughout the world, Governments are putting new policies into place to capture the exceptional opportunities for economic and social progress that e-Business provides. Ireland has the capacity to harness these opportunities fully for all its citizens, if our institutional structures are aligned with, and are capable of responding quickly and effectively, to the challenges of the digital economy"*.

Therefore, the Government is convinced of the necessity to continue in its commitment. In January 1999, a major strategy and action plan was released by the Taoiseach's Office under the title "Implementing the Information Society in Ireland: An Action Plan". As a blueprint for the Government, this paper aimed to provide a comprehensive and co-ordinated approach embracing all the tasks that needed to be addressed. It identifies 5 main areas and announces measures, including a combination of completely new tasks and tasks that had already been identified as necessary and where, in some instances, action had already commenced:

- Telecommunications infrastructure.
- Development of electronic commerce and business opportunities.
- Enabling measures, opening up access to the new technologies for the less privileged.
- Legislative and regulatory measures.
- Modernising the delivery of public services through new technologies.

Under the leadership of the Prime Minister's Office (Taoiseach), several initiatives are being implemented, monitored by progress reports of the Interdepartmental Implementation Group for the Information Society and activities of the "Information Society Commission", a public-private advisory body to Government created in May 1997. Six areas are specifically under permanent monitoring: Awareness, Infrastructure and connectivity, Legislation, Training and R&D, Access for all, Interactive service provision (e-Government).

During the Lisbon Special European Council, the Irish Government underlined its commitment to prioritising the Information Society agenda.

## Italy

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Italy has seen a slow widespread introduction of ICT for several reasons, among which cultural brakes, a certain lack of attention from the policy makers, some conservatism in the productive system and high telephone tariffs can be noted. This trend is in the process of being significantly reversed. In fact, over recent years, several bottlenecks have been or are being eliminated and although Italy is still lagging behind other European countries, the country is rapidly catching up.

Factors fuelling this development are numerous. The liberalisation of the Italian communications sector has had a profound impact on both the demand and supply sides. Also, government policy has progressively focused on the Information Society. After a period of individual activities initiated by ministries and promotional activities carried out by the Information Society Forum, the Government decided to move towards a more co-ordinated approach.

In 1999, it decided to commit itself in this strategic sector, with the aim of formulating a unified plan of action and promoting new modes of co-ordination and collaboration between the public and private sectors.

Therefore, in February 1999, the Prime Minister Massimo D'Alema pointed out that *"the development of the Information Society is a major goal of the Italian Government"*. He issued an important decree, which instituted three structures with the task of defining the Italian Action Plan for the Information Society: the Information Society Forum, the Interdepartmental Study and Working Group and the Committee of Ministers for Information Society. 1999 was a very active year, including a financial planning exercise in 1999 in order to prepare an action plan, national conferences, nomination of an "Minister for Internet" and reports on the development of the Information Society in Italy from the Information Society Forum. However, the publication of this Action plan was postponed due to governmental changes.

With the second Government of Giuliano Amato in April 2000, the process has come to an ambitious "Action plan for the New Economy" published in June 2000. It has been presented as the Italian contribution to the eEurope initiative. This action plan aims to enable Italy to keep pace with international competition and integrate the new economy with the Italian economy and society, placing special emphasis on disadvantaged sectors and southern Italy.

The action of the Government will focus on 4 principles:

- Encouraging co-operation and links among all participants;
- Supporting research, education and promotion using flexible, existing tools;
- Fostering competition in the ICT sector;
- Implementing training and social inclusion policies for southern Italy.

There are four areas of intervention:

- Human capital: training, education, research, development, employment and social inclusion
- e-government: government services
- e-commerce: co-ordination, rules and procedures
- Infrastructure, competition and access, beginning with the bid process for the allocation of frequencies for UMTS mobile telephony

Concerning e-government and e-commerce, two separate detailed action plans have been issued by the Government.

## **Luxembourg**

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The Grand-Duché of Luxembourg, which has 429,000 inhabitants and the highest standard of living among the EU Member States supported by continuous economic growth for well over the past ten years, is also well positioned in the Information Society landscape.

This good positioning results from the dynamism of the country and from its specific assets. The Government, supported by the public and private sectors, has advanced in the telecommunication liberalisation process and launched several initiatives, following the strategic recommendations of the Comité Info 2000 from 1995 and 1996, included in the report "Info 2000 Committee: First conclusions and recommendations" and the report on "the role of the State in the Information Society". Since then major achievements have been made in the health sector, education and information and public services.

With a new governmental programme, which followed the elections of August 1999 and in the framework of the eEurope initiative launched in March 2000, the Prime Minister Jean-Claude Juncker committed to fully implement the Information Society in Luxembourg. Therefore, the Government is currently preparing a new IS plan entitled "e-Luxembourg", which will align the Info 2000 programme with the eEurope programme with the co-ordination of all Ministries concerned. It should be published in the coming months but the Prime Minister has already announced several measures to be taken in the field of Internet development, e-government, telecommunications infrastructures, the legal framework, in particular concerning electronic commerce, education and research and the support of the creation of high tech companies in new media and the reinforcement of the communication sector.

The National plan will be prepared and monitored by the Minister of Communication, who will be assisted by a new structure, a National Committee for Information Society.

## **Netherlands**

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The Netherlands holds a central position in Europe's Information Society. Among the EU member States, it ranks after the most advanced group of Nordic countries, Sweden, Finland and Denmark. The Netherlands has very dynamic telecoms market which is open and liberalised, an international orientation, well-educated people with a good knowledge of foreign languages, logistical advantages ... all these factors constituting the so-called "Dutch Model" attract new investments, both domestic and foreign, particularly in the New Economy.

This good performance results in part from the early commitment of the Dutch Government to making the best possible use of the possibilities offered by ICT to ensure national prosperity and well being.

In December 1994, the Government launched a national "Action Programme for the Information Superhighways: From Metaphor to Action", which was reviewed in April 1998 with the "re-calibration note" of the National Action Programme. The Government launched a number of initiatives and programme clusters, working in close cooperation with the private sector, in particular in the framework of working groups on infrastructure and electronic services.

In 1999, following a motion of the Lower House of the Dutch Parliament, the Government decided to prepare a follow-up document to the National programme. In fact, the Lower House found that government initiatives in the ICT sector were threatening to become fragmented and it asked the government for greater coherence and streamlining in ICT initiatives. Moreover, even if the Netherlands is among the "information elite" today, it does not mean that the country will remain a leader. The Government considers that the competitive environment requires the Netherlands to make a great and renewed effort to maintain its good position.

This was achieved in June 1999 when the Cabinet published the White Paper "The Dutch Digital Delta: The Netherlands On-Line". The ambition of the Dutch Government is to have a "first class ICT base" i.e. to establish a sound base for the further development of the Netherlands into a "digital delta". Five pillars have been defined which together determine the strength of the national ICT base:

- (tele)communications infrastructure;
- Know-how and innovation,
- Access and skills;
- Regulatory issues;
- IT in the public sector.

This document offers a framework for a range of specific measures already implemented as well as planned measures with a horizon of 3 to 5 years.

This White Paper is accompanied by recent sectoral action plans, white papers and policy statements such as the Electronic Commerce Action plan and the Action Plan on Electronic Government. Moreover, in 2000, other topical framework documents were published, in particular on electronic government ("contract for the future"). ICT and e-commerce monitors are being implemented and an external forum is being set up.

## **Portugal**

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The Information Society in Portugal is less developed than it is in other western European nations. Among the lowest in the region in average disposable income, Portugal has been slow in liberalising telecommunications. However, the country is catching-up with other EU countries, which should be encouraged by the total liberalisation of the Portuguese telecom market, engaged in January 2000. There are several indications which show that things are about to change.

This move is strongly supported by the Portuguese Government. As soon as it took office in 1995, it committed itself to make the Information Society a priority in its programme and started to take actions to promote the use of ICT. In May 1996, the Government launched the "Portuguese Initiative for the Information Society" and created a permanent team chartered to give impulse to and monitor IS development under the leadership of the Minister of Science and Technology, the "Missão para a Sociedade de Informação". In April 1997, a Green paper on the Information Society was published, followed a few months later by an Action Plan. For the first time, IS issues became an integral part of planning policy instruments (National Employment programme, Grandes Opções do Plano) and major national guidance papers.



In 1999, an appraisal of achievement to-date showed good results but the Portuguese Government is determined to redouble its efforts to close the gap with other EU countries and to enter into the Information Age.

The drawing up of the Third Community Support Framework was a *"unique and decisive opportunity to overcome backwardness, to reinforce competitiveness and to push ahead with the advance of the Information Society in Portugal"*. To this end the government, through the Ministry of Science and Technology, prepared and submitted to the Community institutions an action programme specifically directed at the development of the Information Society, linking various sub-programmes. This programme is entitled "Towards a knowledge-based Information Society 2000-2006: Operation Information Society". Between 1.35 billion EUR and 1.45 billion EUR should be dedicated to Information Society development over the 2000-2006 period.

Operation Information Society is organised into 4 sub-programmes:

- Developing Skills: to provide training to all and to provide certification of skills in Information Science and Technology
- Digital Portugal / Internet initiative: to spread rapidly the use of computers and the Internet for all and avoid exclusion linked to economic factors (high cost of equipment and communications), technical factors, cultural factors and motivational factors (resulting from a limited diversity of content and services)
- The Open State: Modernising the State Administration
- Observation, Monitoring and Assessment

In order to improve the co-ordination of its Information Society policy, the Government decided to reinforce the role of the Minister of Science and Technology as the main co-ordinator of Information Society Policy in Portugal. Inter-ministerial co-ordination is also reinforced through the establishment of an Interministerial Committee for Information Society, placed under the responsibility of the Minister of Science and Technology.

The Portuguese Presidency, during the first semester of 2000 committed itself to give a strong impulse to "Bringing Europe into the Information Age". The Special European Council devoted to "Employment, economic reforms and social cohesion - for a Europe of innovation and knowledge", held on 23-24 March 2000 in Lisbon and the Feira European Council of June 19-20 dedicated to Information Society provided one of the milestones in the Portuguese Presidency by endorsing the comprehensive eEurope 2002 Action Plan "An Information Society for All".

## Spain

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Spain still lags behind many of its northern European counterparts. The reasons often indicated are infrastructure deficiencies, insufficient investments in R&D, low equipment levels of computers at home and in businesses and the limited presence of the Spanish language on the Internet. However, over recent years, there has been significant progress in catching up with other European countries and the ITC market in Spain is experiencing many changes. Today, the ICT sector is the most dynamic sector of the Spanish economy.

These profound changes are due to the positive effects of liberalisation as well as the proactive approach of the Government, which has worked on a package of measures to promote the increased use of ICT. After a period dominated by individual ministerial programmes, oriented towards technological development, the Government began in 1998 to develop a more integrated and co-ordinated policy, oriented to Information Society applications and Internet development.

This approach resulted in a Strategic Initiative for Information Society approved by the Council of Ministers in November 1999 and published in January 2000 under the name "INFO XXI, An Information Society for All". Also, this Spanish strategy has been prepared in relation with the eEurope initiative, following the Helsinki Council decisions in December 1999. The program is conducted over a period of 3 years (2000 -2002). The Spanish government is provisionally planning to invest some 2.53 billion EUR on Information Society objectives:

These priorities have been classified in 4 "Success Factors" which represent the necessary conditions to ensure the success of the initiative:

- Infrastructure and networks
- Legal Framework
- Commitment
- Public opinion awareness and motivation (in particular, "access to all" initiative)

Seven "Major action lines" have been defined:

- Emphasis on developing education and training
- Job creation
- Increasing innovation
- Increasing effectiveness
- Social cohesion
- Quality of life
- Projecting the external image of Spain

Also, as a decentralised State with 17 autonomous communities, the regional Information Society is very active. Early on, Spanish communities started to prepare their own IS strategies and have implemented many programmes and initiatives.

## Sweden

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"E-vikings blaze the on-line trail", "Digitales Volksheim", "a high-tech Goliath", "La Suède Championne d'Europe du high-tech"... the headlines from the foreign press quoted by the Minister for Trade Leif Pagrotsky during a recent conference are impressive. While in 1993 Sweden was a country in a deep economic crisis, today it is among the healthiest economies in Europe and ranks among the world's leading countries in IT, telecommunications and new media.

Sweden has a comprehensive spread of IT use and a high level of IT maturity. This is a result of several strengths, which are, according to the Swedish IT Commission: a well-educated and well-trained labour force, strong traditions and ambitions in Swedish society which favour the development of knowledge and know-how, a well-developed information structure, favourable prerequisites for business, good global awareness and culture, logistics experience, entrepreneurial skills and the presence of the world's leading ICT companies. The strengths are all the stronger due to the national action plan for Information Society, backed by the Government and Parliament as well as the active involvement of public authorities as key users of computers and networks in conducting their activities.

Sweden started to define its strategy very early on. Based on the work of the IT Commission created in 1994, the Government issued its first IT Bill in 1996, which proposed a strategy and an action plan. Numerous programmes and initiatives were launched in this framework, allowing Sweden to obtain these good results.

Today, the Government considers that this situation does not give to it an excuse *"to lean back and fall into the trap of complacency. We need to go on. We have no time to lose. We need constant change and improvement"*.

Therefore, the Government is still strongly committed to keeping Sweden a society that embraces change and that it is fast to put new technology to use. In March 2000, the government presented a new IT Bill for the creation of "the Information Society for all". The Swedish government is determined to consolidate Sweden's position as a leading IT nation in Europe and the world and the ambition is now to make it an Information Society for all and to become the first country to create such an Information Society.

The bill identifies eight IT policy goals:

- Growth
- Employment
- Regional development
- Democracy and justice
- Quality of life
- Gender equality and cultural diversity
- Sustainable society
- Efficient public administration

The Government proposes to divide the work into three priority areas which includes concrete measures:

- IT confidence: greater security and confidence.
- IT accessibility: greater access to the services of the Information Society. This applies both to technological hardware (e.g. lines, cabling and other equipment) and to logical software (programmes, standards, primary information bases and communal services of various kinds).
- IT competence: greater know-how as regards the development and use of IT, not only among specialists but also by the provision of basic skills to all.

Sweden will hold the presidency of the European Union from 1 January–30 June 2001. In its programme, the Swedish Presidency has announced that it will promote the Information Society by stimulating innovation in telecommunications and IT. An important element will be the ongoing review of all Community legislation relating to electronic communications. Sweden will also follow up the eEurope initiative. However, it considers that eEurope should add a new trade policy agenda that supports the efforts of Member States to modernise their economies by promoting the ICT sector. But Europe is not enough and it should embrace open markets and free trade: *"We can't protect Europe against the future. Instead, we should prepare Europe for the future"*. In that perspective, Sweden has defined the main lines of a new trade policy agenda for IT.

## **United Kingdom**

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The United Kingdom is one of the countries that anticipated the spread of the new technologies. Among other British technological achievements, it is worth remembering that Tim Berners-Lee, a British scientist, pioneered the World Wide Web. It is considered that the UK is amongst those countries in tune with the fast pace and complicated procedures of the information age and that the country's position reflects its established ICT infrastructure and computer literate population.

The British Government has developed strategies and initiated action in all the fields of the Information Society. Starting in 1996, the Information Society Initiative led by the Department of Trade and Industry acted as an umbrella for the initial actions of the UK Government, comprising programmes for the business and the public at large (IT for all). Other major programmes have been conducted in the health and education sectors.

The Information Society is a priority for the New Labour Government elected in May 1997, in particular for the Cabinet Office of the Prime Minister, Mr. Tony Blair.

In May 1998, the Government set out its aims for the development of the Information Society in its policy statement "Our Information Age: the Government's Vision". This document statement was realised in conjunction with the Modernising Government White Paper (1999), The Competitiveness White Paper, "Our Competitive Future: Building the Knowledge Driven Economy" (1998) and the Cabinet Office's Performance and Innovation Unit's, "e-commerce@its.best.uk" report (1999).

More recently, building on the establishment of a new organisational structure for the effective realisation of the Government's Information Society strategy, founded on an e-Minister and an e- Envoy and consultative groups, the Government has implemented UK Online. The UK Online Annual Report (September 2000) sets out the Government's detailed strategy for getting the UK online with a clear action plan for the future. The Annual Report was accompanied by the launch of a, "UK Online" Campaign comprising further initiatives and investment to get people, business and the government itself online.

The UK online goals, to be attained through concrete measures detailed in the action plan, are the following:

- Modern markets: getting the market framework right
- Confident people
- Successful businesses
- Getting government online
- World class supply
- Leadership and co-ordination
- Measuring success

The devolved regions of Scotland, Wales and Northern Ireland are also actively taking forward the Information Age agenda with Digital Scotland, the Wales Information Society Initiative and the Northern Ireland Information Age Initiative.

## **Additional contributions**

### **Norway**

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Norway is among the most developed Information Society countries in the world. Norway is now ranked 4th out of 55 countries in the 2000 Information Society Index (IDC/World Times Survey), after Sweden, United States and Finland. The country is among the world leaders in access and use of Information Society Technologies, for example concerning technological infrastructures, internet penetration, PC access and use, electronic commerce, mobile phones and ICT in schools.

Norway's Information Society policies have developed gradually from the first half of 1990s. The title of one of the most central policy documents in the previous decade was "The Norwegian way to the Information Society. Bit by Bit" (1996). The title ("Bit by bit") reflects that the country's policy in this field has not been one of revolutionary vision, "grand schemes" and radical societal change with a strong, centralised governmental political and financial involvement. Rather, the Norwegian approach to ICT and Information Society issues has since the 1980s been characterised by more decentralised, modest and incremental visions and measures, by "piecemeal engineering" and a focus on stimulating local and decentralised development. The central governmental plans have focused on constructing political and organisational frameworks.

Judging from the results, it could be argued that the Norwegian way seems to have been rather successful. However, and this is the negative side, Norway has not managed properly to utilise its advantages in the use of ICT to create new industries, e.g. in the important field of electronic business and e-commerce. This is also connected to another challenge which Norway is facing. In a few years' time, the revenues from the petroleum sector will decrease. In order to maintain the welfare state at its current high level, the country is dependent on new value creation and the formation of new companies.

An important policy document from 1996 presented the overall goals for Information Society in Norway. This report from the State Secretary Committee for IT provided a basic policy framework for utilisation of ICT in different sectors. In recent years, the most important initiative has been the "eNorway action plan" which was launched in 2000. The Government's objective is to influence and accelerate the development of a knowledge society, so that technology can be used by the whole country and its entire population to increase our value creation and safeguard our welfare level.

## **Iceland**

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The population of Iceland is about 279,000 and around 62 percent of the population live in the capital city, Reykjavik, and neighbouring municipalities. The economy is now transforming from a resource based economy into a diversified modern digital one. A survey conducted in September 2000 found that about 78% of Icelanders have access to a computer with an Internet connection. The survey also showed that 64.7% of Icelanders have access to the Internet at home. Roughly half of those who have access to the Internet (51.7%) use it daily or almost daily. Mobile phones seem to be widely used and 79.1% of Icelanders between the ages of 16 and 75 use GSM mobile phones.

In 1996 the Government published an Information Strategy titled "The Icelandic Government Vision of the Information Society". In May 1997 the Government decided to establish a development project for the information society in Iceland. The project will last for five years, from 1997 to 2002. A steering group, The Information Society Taskforce, operating under the auspices of the Office of the Prime Minister, steers the Information Society Project.

Iceland has performed well in the development of the Information Society. The software and information industry is growing and conditions for such an industry are favourable. The new Project Plan for the Development of e-commerce and e-government from March 2000 contains focuses that can potentially lead to greater economic growth, job creation, increased international trade and improved social conditions. The Government in Iceland is committed to using new technology to increase quality of life for the citizens of Iceland, bring government closer to the people and make government more responsive to citizens.



# Austria





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## Introduction

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Since accession to the EU, a process that involved important structural adjustment and regulatory reform in telecommunications policy, the development of the Information Society in Austria has been quick.

Today, Austria is ranked 16th in the 2000 Information Society Index (IDC/World Times Survey). It ranks in the 8th position of EU Member States. The Austrian national telecom and ICT market is today the most important sector of the national economy. With almost 7.3 billion EUR, it represents more than 4% of GDP. The number of the software and services companies has tripled since 1990, to attain 17,000 today. The number of persons employed in the Telecom sector increase of 42,000 since 1997 and up to the year 2003 at least 85,000 new jobs will be created in this sector.

The Austrian market for Internet services represents a rapidly growing market. Recent findings of the Austrian Internet Monitor (AIM) indicate that 44% of Austrian companies have a homepage, while 73% of companies have Internet access in July 2000. Almost 25% of population access the Internet regularly versus 3.4% end 1996. There are 34 Internet hosts by DNS domain per 1000 inhabitants in January 2000, versus 18.6 at the end 1998. There are still some obstacles to the development of Internet. High telephone costs, high subscription fees, a general reluctance by Austrian users to utilise electronic payments and data protection issues hinders Internet use. Nevertheless, the future of electronic commerce in Austria appears promising and the Government is actively working to foster Information Society development.

In fact, considering that the Digital Economy can provide huge opportunities for the development of the Austrian economy and employment, the Austrian Government has made early the development of the Information Society a priority. In 1994, it launched the Telecommunication Initiative Austria and defined "The Austrian's way into the Information Society" in 1995. In 1997, the Federal government presented the Austrian strategy and Action plan for Information Society.

Today, it is considered as a key economic, social and political challenge. In order to meet these key challenges Austria has defined a comprehensive strategy and has implemented a set of measures to take Austria into the knowledge-driven economy. Key to this approach are the "Österreich digital", the "Government's Information and Communication Project " and the initiative "e-Austria in e-Europe", launched in spring 2000 with the identification of several key areas for future development.

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# 1. Historical overview

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## 1.1 Telecommunications initiative Austria (1994)

A milestone decision on a national strategy and encouraging public awareness was taken in 1994 at the "Alpbacher Technologiegespräche" (<http://www.forum-alpbach.at/>). During this annual meeting of high level experts and politicians the Federal Chancellor announced that the development of telecommunications was to become one of the Government's key areas of concern. A major consequence of Alpbach 1994 was the first "Telecommunications Initiative Austria" led by the Federal Ministry of Science and Transport. Four groups were established to discuss the following topics in detail: legal foundations, strategies and measures for TC development, telecommunications, information technologies and the economy, research, and science. However, the time schedule of these project groups was interrupted by the unforeseen parliamentary elections of December 1995.

## 1.2 The Austrian's way into the Information Society (1995-1996)

In July 1995, in the framework of the Telecommunications Initiative, the Federal Chancellery established the "Information Society Working Group" in order to identify opportunities and threats associated with Information Society development in Austria and to develop a vision and a framework for entering the Information Society.

The working group set up 10 high level expert groups co-ordinated by different ministries with 350 members including policy experts, economists, social and technical scientists, representatives of social partners, the PTT, telecom industry, hardware and software providers, representatives of different ministries as well as of different user groups.

During 1995 and 1996, these Consultative Expert Groups discussed the following topics and a series of major documents resulted from the work of these expert groups:

Expert Group / Issue	Co-ordinator
<b>Legal aspects of the Information Society</b>	Federal Ministry of Justice and Federal Chancellery
<b>Telecommunications</b> TC and competition TC infrastructure, interconnectivity and interoperability Promotion of TC applications	Fed. Ministry of Science and Transport
<b>Telecommunications and Austria's competitiveness as a business location</b>	Fed. Ministry of Science and Transport
<b>Information technologies and their economic applications</b>	Federal Ministry of Economic Affairs
<b>Research, science and culture</b>	Fed. Ministry of Science and Transport
<b>IS and social challenges</b>	Federal Ministry of Social Affairs
<b>New media, education and training</b>	Federal Ministry of Education
<b>IS and health care</b>	Federal Ministry of Health Care
<b>Applications in federal administration</b>	Federal Chancellery
<b>Public communications and citizen services</b>	Federal Chancellery

### 1.3 The Federal Information Society Report: an Austrian Strategy and Action Plan (1997)

- **The Federal Information Society Report (April 1997)**



Each expert group produced a thematic report for the "Austrian Federal Government Working Group". These reports resulted in the "Information Society Report" (also called "White Paper" - <http://www.austria.gv.at/service/INFOGES.PDF>).

Published in April 1997, the Information Society Report:

- outlines fundamental objectives,
- formulates terms of reference for strategic (long-term) decision-making on the part of the Federal Government
- lists urgent measures to be implemented,
- and elucidates steps to which priority has been accorded.

The Reports contains 10 Chapters, 7 of which are dedicated to the following topics:

Title	Content
<b>"Business location and Social Security"</b>	Deals with changes in economic background conditions, the progressive spread of ICT and the increasing significance of modern telecommunication infrastructure as a factor of economic and social development.
<b>"Telecommunications - The linchpin of the Information Society"</b>	Examines the changing requirements for telecommunications policy in a competitive international environment. In particular the consequences of the deregulation of market access for new forms of regulation.
<b>"Scientific Research and Universities"</b>	As Information Society is an interdisciplinary research topic, the public research institutes, universities and special colleges have a key role to play in the use of ICT (research networks), as repositories of technical expertise and as training facilities.
<b>"Innovation and Technology"</b>	Argues that Federal Technology Policy should favour the development and spread of ICT.
<b>"Education"</b>	Examines the enlargement of educational targets to provide new knowledge and skills and explains the requirements for using new media and ICT in the educational sector.
<b>"State Administration"</b>	Describes the opportunities for using ICT to modernise and improve administrative procedures and public services (standards of "customer orientation") as well as to promote democracy.
<b>"Health and Public Social Services"</b>	The public health system is an important area for the use of ICT. For public social services, ICT helps to achieve rationalisation targets and to improve services for citizens
<b>"The Law and (Multimedia) Network"</b>	Is devoted to legal topics related to the provisions governing the use of ICT (IPR issues, protection of privacy, consumer protection, encryption and security, etc.)

The Report announced that *"the next stage of the process must include deepening social dialogue at every level and supplementing the planned measures drawn up by the individual ministries in an Overall Action Plan"*.

One major aim of this Action plan is to improve the co-ordination of the existing actions and initiatives of the various ministries in the area of information technologies and related research.

A further major result of the working group has been the re-organisation and restructuring of the Austrian research funding system. A specific programme on information and communication technologies has been included within the Innovation- and Technology Fund (ITF): a fund that focuses on structural improvement in Austria's economy. It has also been decided to focus on support for SMEs, in order that they can get capital grants for and information about telematic applications.

- **Information Society Action Plan (October 1997)**

In response to the Information Society Report, the Austrian government prepared an Action Plan (Aktionsplan zur Informationsgesellschaft), co-ordinated by the Federal Chancellery.

The measures include the provision of a legal framework, government procurement, implementation of new public information services, government R&D programmes, business promotion programmes and awareness and information services.

The plan does not set targets or deadlines for completing the overall agenda, although some are given for individual programmes, projects and initiatives.

The Action Plan was updated in 1998.

### **1.5 Regional Information Society Initiatives**

As a federal State, the regional level plays an important role as regards Information Society development. Thus, in 1996, each province started its own regional initiative. Leading this process were the provinces of Upper and Lower Austria, Salzburg, and Vorarlberg. The same year, the APTA (Austrian Platform for Telematic Applications) was established to group together and co-ordinate the 9 regional Data-Highway and Telecommunication Initiatives (autonomous Laender of Burgenland, Carinthia, Lower Austria, Upper Austria, Salzburg, Styria, Tirol, Vorarlberg and Vienna <http://www.apta.at>).

Supported by the Federal States of Austria, APTA aims to broaden the use of new telecommunication services in Austria with a clearly regional approach. A key aim is to support those rural companies and institutions that are at a disadvantage compared with the economically strong central regions and cities.

Each of the APTA members is expected to conduct a major telematic applications project in its region and to share the results and conclusions with the other members. Examples of such projects and initiatives are:



- SchoolNet (Vorarlberg, Burgenland)
- IndustryNet (Styria)
- Network for Graphic and Print Industry (Salzburg)
- CultureNet (Upper Austria)
- Alpine-Adria Net (Carinthia)
- Net for Public Administration (Tyrol)

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## 2. "Österreich digital", Government's Information and Communication Project and "eAustria in eEurope"

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Following recent elections and a change of government Austrian policy is changing in a number of areas, including Information Society.

### 2.1 Österreich digital

In February 2000, the new Austrian Government published its programme "A new Governance for Austria" in which it announced its priorities, in particular the launch of the "Österreich digital" Initiative. This was followed in March 2000 by the update of the Stability Programme covering the period 2000 - 2003. The Government programme affirms the need to raise a "technology billion" for a "technology offensive".

The "Österreich digital" Initiative is a partnership between industry and the Government aimed at the rapid development of the information society. As stated in the governmental programme, *"Austria must fully and actively take part in the vigorous development of the new technologies and use its innovative potential to the full"*.

Different measures are planned including;

- the expansion of the telecommunication infrastructure,
- the provision of specific training in all types of schools and in further education, including technical universities and specialised colleges,
- the intensified use of electronic media in training and advanced training programmes,
- market-oriented regulation of e-commerce and the implementation of a support programme encouraging Internet use by SMEs,
- the digitisation of the public administration and social insurance institutions as well as their communication with citizens and customers (e-government),
- the exploitation of Austria's cultural heritage in digital form,
- ensuring established institutions support business start-ups in the digital economy (capital, know-how),
- and the implementation of a new programme of R&D in which new electronic technologies should play a greater role: *"Austria has opted out of nuclear research and also largely out of gene engineering research. What is essential for us now is to mark out future-oriented research fields and these research fields are in the area of the new electronic technologies."* said the Minister of science.

### 2.2 Organisational changes

One of the first measures of the new government was to focus ministerial attention on ensuring improved co-ordination and administrative processes. On 1 April 2000 the amendment of the Austrian Bundesministerienengesetz (the law governing the structure and responsibilities of Austrian Federal ministries) entered into force (*BMG-Novelle 2000*). Responsibility for science, research and technology is now divided between three different ministries:

- BMBWK - Federal Ministry for Education, Science and Culture (<http://www.bmbwk.gv.at/>),
- BMVIT - Federal Ministry of Transport, Innovation and Technology (<http://www.bmv.gv.at/>)
- BMWA - Federal Ministry of Economic Affairs and Labour (<http://www.bmwa.gv.at/>).

Moreover, two new organisations should be established in the near future:

- Council for Research and Technology Development.  
Its tasks should be as follows:
  - To choose mandatory areas for the funding policies of all research funds.
  - To advise the Federal government.
  - To broker contact between academic research and applied research in industry.
  - To monitor and conduct international benchmarking for the innovation system.
  - To prepare a long-term Austrian R&D strategy and to monitor its phased implementation.
  
- An "independent institution for telecommunications, information technologies and media". All authorities and quasi-authorities such as the Telecom Regulator in the Transport Ministry, the Private Radio Cable and Satellite Broadcasting Authority in the Federal Chancellery, the Commission for the Implementation of the Broadcasting Act will merge in this institution. It should have the following responsibilities:
  - To advise the Federal Government on the drafting of positions, at the European and international level.
  - To ensure co-operation with EU institutions and the Council of Europe.
  - Licensing and supervisory powers.
  - To act as a "vehicle of know-how for the future progress of media and communications in Austria" and to be a stimulator of technological development contributing to the creation of new jobs resulting from the broad deployment of ICT.

It will be divided in three sectors: engineering / technology, substance / content and competition.

### **2.3 Launching the "Government's Information and Communication Project" and "e-Austria in Europe"**





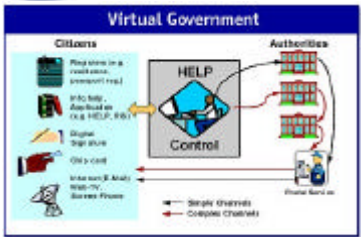
The announced "Digital Austria" has now taken the form of the Government's Information and Communication Project (Das Informations- und Kommunikationstechnologie-Projekt).






As its launch has coincided with the launch of the e-Europe Initiative, it clearly refers to the priorities of the e-Europe initiative presented during the Lisbon Summit on 23-24 March 2000 and thus has been called "eAustria in eEurope" (<http://www.bmuk.gv.at/pnews/000424.htm>).

Placed under the leadership of the Ministry of Research and Education Elisabeth Gehrler by the Federal Chancellor Dr. Wolfgang, the programme was presented in April 2000. It describes activities already undertaken by the Federal Government, accomplished results and the planned programme until the end of the legislative period (2003). There are 14 areas: e-learning and Internet, Public Administration: e-Government, Economy: e-Business, Tourism, ICT for Rural Areas, Social Domain, Justice, Art and Media, Research and Technology, Finance, National Defence, Internal Affairs, Foreign Affairs, Museums and Cultural Heritage.




Below are summarised some actions in some areas.



Actions already implemented	Actions planned until 2003
<p><b>e-learning and Internet</b></p> <ul style="list-style-type: none"> <li>• Internet connection for 100% of Federal schools and 43% of national schools</li> <li>• Internet access for 17,000 teachers via the Austrian School network but many others have access with alternative operators</li> <li>• 50 % of specialised teachers are already trained in ICT</li> <li>• 2,000 Schools Development Programme of the Federal Government (SCHEP 2000)</li> <li>• Computer driving licence: 4,000 pupils certified by end 2000 with this procedure</li> <li>• Training Virtual offer: 9 education servers in the Länder, 4 servers at BMBWK (<a href="http://www.bmbwk.gv.at/">http://www.bmbwk.gv.at/</a>); distance learning centre in Bregenz;</li> <li>• Training courses</li> </ul> <div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p><a href="http://www.bmuk.gv.at/fssin.htm">www.bmuk.gv.at/fssin.htm</a> <a href="http://www.blackboard.at">www.blackboard.at</a></p>	<ul style="list-style-type: none"> <li>• Increase of bandwidth from 2 Mbit/s to 10 Mbit/s in Federal schools</li> <li>• Goal: 100% of the national schools connected to Internet.</li> <li>• Teachers training offensive in ICT</li> <li>• Intensive courses in co-operation with companies</li> <li>• Establishment of a steering group who will define priorities for the use of the "computer billion" (72.7 million EUR), which will be available starting from autumn 2001</li> <li>• Multimedia learning centres for education and training</li> <li>• Computer driving licence: introduction in commercial and technical schools and for training of teachers</li> <li>• Introduction to the teaching profession of "computer science managers"</li> <li>• Cross-linking structure of Länder's intranets with link to the Austrian School network (Länder competency)</li> <li>• Virtual training offer: continuation of the education servers with databases and educational contents ; all new audio-visual media of the BMBWK will be digitised and accessible through the Internet</li> <li>• Expansion of the pilot project of the virtual university</li> <li>• Development of ICT in professional schools</li> </ul> <p>Die Kommunikationsplattform des <b>bm:bwk</b></p> 
<p><b>e-government</b></p> <ul style="list-style-type: none"> <li>• since 1997, project @mtshelper on-line. This information platform (<a href="http://www.help.gv.at">http://www.help.gv.at</a>) supports the citizens in their relations with almost all authorities and official routines. All Federal Ministries, Länder, large cities and municipalities are present within this platform connected.</li> <li>• Over this platform, free access to legal information (federal and regional laws, Courts decisions, etc.) and paying access to consult electronic library and land register.</li> </ul>	<ul style="list-style-type: none"> <li>• At the end of 2001, all public services will be integrated on @mtshelper on-line</li> <li>• Development of Electronic forms</li> <li>• At the end of 2003 already, a set of public procedures will be available on-line (common routines such as passports, driving licences, etc.)</li> <li>• In 2005, all public procedures will be in electronic form</li> </ul> <div style="text-align: center;">   </div> <p><a href="http://www.help-eu.at/uk/html/uds_uk.html">http://www.help-eu.at/uk/html/uds_uk.html</a></p>



<b>e-business</b>	
<ul style="list-style-type: none"> <li>• Liberalisation of the Telecommunications market; UMTS frequencies (4-5) are written out until December 2000 (auction)</li> <li>• Special Internet tariff; some operators offer free Internet access for private households</li> <li>• Implementation of ICT programs : "Multimedia Business Austria", "EDI Business Austria", electronic commerce, APTA</li> </ul> <p style="text-align: center;"><b>edi business austria</b></p> <ul style="list-style-type: none"> <li>• Pilot project IT co-ordination for electronic public procurement</li> <li>• AMS-Infodrehscheibe: self-service devices for job searches in each AMS office</li> </ul>	<ul style="list-style-type: none"> <li>• Continuation of the existing ICT programs of BMWA with a focus on technology transfer, export and usability and content-use</li> <li>• Implementation of an "e-business program", especially for SMEs; establishment of an Info-platform and discussion forum on e-business ; information campaign for SMEs (Roadshow), Portal for SMEs "Eine Anlaufstelle " with best practices ; Reinforcement of training, seminars (<a href="http://www.bmwa.gv.at/ebusiness/index.htm">http://www.bmwa.gv.at/ebusiness/index.htm</a>)</li> <li>• Establishment of Competence Centres between companies and scientific community</li> <li>• Pilot project in the BMWA for introduction and/or improvement of electronic communication between companies and the administration</li> <li>• Competition will lead to decrease of Internet access costs</li> <li>• AMS-Infodrehscheibe available on the Internet Europrix Multimedia Art (<a href="http://www.europrix.org">www.europrix.org</a>) Prix MultiMediaAustria 2000 (<a href="http://www.prix-mma.at/">www.prix-mma.at/</a>)</li> </ul> <div style="text-align: center;">  </div>
<b>Tourism</b>	
<ul style="list-style-type: none"> <li>• Study of regional tourism organisations</li> <li>• Destination management – manual</li> <li>• Seminars and Workshops training programme for Destination management manager</li> <li>• X-Ray-analysis : competitive ability of tourism regions</li> <li>• "Destination management monitor Austria" - DMMA</li> </ul>	<ul style="list-style-type: none"> <li>• Austria-wide development and intensification of electronic reservations and bookkeeping systems for travel organisers, hotel reservation and catering</li> <li>• Training offensive for Internet users within the tourism range</li> <li>• Focus on SMEs in the tourism sector (96 % of Austrian enterprises are SMEs)</li> </ul>
<b>ICT for Rural Areas</b>	
<ul style="list-style-type: none"> <li>• BMLF Infonet: Information system on country, forest, water (<a href="http://www.bmlfinfonet.at">www.bmlfinfonet.at</a>)</li> <li>• PC-Aktion "Profit-Paket": computer equipment and Internet connections.</li> <li>• Internets for rural areas: Internet portal of the agriculture department, <a href="http://www.landinfo.at">www.landinfo.at</a>; Netvillage (<a href="http://www.netvillage.at/">http://www.netvillage.at/</a>)</li> <li>• <a href="http://www.lebensministerium.at">www.lebensministerium.at</a></li> </ul> <div style="text-align: center;">  </div>	<ul style="list-style-type: none"> <li>• Development of higher economic institutes.</li> <li>• Completion of the information and unification of the different existing initiatives concerning country, forest, water etc.</li> <li>• Extension of the Internet services for agriculture</li> <li>• Promotion of the "Telelearning Kurskonzepten"</li> <li>• Adult education so that farmers are motivated for the use PC and the Internet</li> <li>• Activities for other target groups: Consumers, pupils, journalists (information and on-line shopping)</li> </ul> <div style="text-align: center;">  </div>



<b>Social field</b>	
<ul style="list-style-type: none"> <li>• Specialised Health information systems</li> <li>• Social ministry web</li> <li>• Actions towards disables</li> <li>• Multiplicity of training programs within regions and NGOs.</li> </ul> 	<ul style="list-style-type: none"> <li>• Development of e-services in the health sector (electronic recording and transmission of patient data, establishment of medical expert systems for medical practice; chip card)</li> <li>• Cross-linking of individual initiatives onto a Health data network: MAGDA-LENA. Over 20,000 health professionals are to be connected on this network</li> <li>• Information campaign and development of projects targeted at women</li> </ul>
<b>Justice</b>	
<ul style="list-style-type: none"> <li>• Signature law entered in force on January 1, 2000.</li> <li>• The e-land register (ADV land register) and the e-commerce register (ADV Firmenbuch) are already operational</li> </ul>	<ul style="list-style-type: none"> <li>• Extension signature law to all types of documents</li> <li>• Modernisation of e-land register and e firm register in a comprehensive Intranet/Internet -solution</li> <li>• Closer linkage between the e-land register and cadastre</li> <li>• Copyright issues</li> <li>• Electronic communication between courts and parties</li> <li>• Cyber-criminality</li> </ul>
<b>Research and Technology</b>	
<ul style="list-style-type: none"> <li>• Connection of R&amp;D bodies to ACOnet high speed Network (<a href="http://www.aco.net/">http://www.aco.net/</a>)</li> <li>• "Austria national host " - ANH.</li> <li>• BIT - office for international research and technology Co-operation - functions as service and co-ordination department for EU programs</li> <li>• Liberalisation of the Telecom sector</li> <li>• Participation in the Research network in IST</li> <li>• EDL courses for blind people</li> <li>• Project "people with special needs" (IST)</li> <li>• Project CULTAVITE (IST)</li> <li>• House of the future</li> <li>• Program logistics Austria</li> <li>• Technology for safety questions (project SIT)</li> </ul>	<ul style="list-style-type: none"> <li>• Further development and increase of competition via market mechanisms</li> <li>• Development of a current on-line catalogue of resources and opportunities in R&amp;D</li> <li>• Cross-setting of international initiatives within the framework of the "user friendly information company " (IST programme)</li> <li>• Assignment of regional portable radio; Frequency assignment for portable radio systems of the 3<sup>rd</sup> generation</li> <li>• Regulatory impulse for wide-band access to the Internet</li> <li>• Expansion of the ECDL action for as much as possible population circles</li> <li>• Factory of the future</li> </ul>  

<b>Culture and Media</b>	
<p>Amendment of the Media law (compulsory delivery of electronic media to Austrian libraries)</p> 	<ul style="list-style-type: none"> <li>• Creation of an electronic portal for all museums and cultural institutions</li> <li>• "Future lab", "Quartier21": a future-oriented laboratory (<a href="http://www.aec.at">http://www.aec.at</a>)</li> <li>• Promotion of "media art"</li> <li>• Creation of an independent mechanism for telecommunications, information technology and media</li> <li>• Establishment of an initiative for awareness raising in new media and ICT</li> <li>• Digitisation of the Austrian cultural heritage and creation of an appropriate platform "Digital platform Austria"</li> </ul>
<b>Finance</b>	
<ul style="list-style-type: none"> <li>• BMF-Homepage (<a href="http://www.bmf.gv.at">www.bmf.gv.at</a>)</li> <li>• @mtshelfer online (<a href="http://www.help.gv.at">www.help.gv.at</a>)</li> <li>• FinanzOnline (<a href="http://finon.datakom.at:2048/">finon.datakom.at:2048/</a>)</li> </ul> 	<ul style="list-style-type: none"> <li>• Development of HELP with interactive and transaction possibilities</li> <li>• Development of FinanzOnline</li> <li>• Development of on-line tariffs for the realisation of electronic data exchange between customs administration and companies</li> <li>• Creation of e-Government-HW/SW-standards as basis for the conversion of the projects specified above</li> </ul>
<b>National Defence</b>	
<ul style="list-style-type: none"> <li>• Full PC equipment for management</li> <li>• Internet presence for each agency</li> <li>• All military schools and academies connected to Internet with equipped training rooms</li> <li>• IT training courses for personnel</li> </ul>	<ul style="list-style-type: none"> <li>• Conclusion in 2003</li> <li>• Conclusion in 2000</li> <li>• Pilot e-commerce project for the development of suitable procedures and structures in the of field logistics</li> <li>• Introduction of the European computer driving licence by end of 2000</li> <li>• Pilot project Teleworking</li> </ul>

### Museum and cultural heritage

- Project "MUSEUM ON LINE 2000" [www.museumonline.at](http://www.museumonline.at)
- Digitisation of the Austrian national library: Access to the ÖNB catalogue via Internet [www.onb.ac.at](http://www.onb.ac.at)
- Digitisation of collections of all federal museums, cross-linking by EDV of the museums with connection to the ACO-Net, integration of the museums into a set of EU projects
- Digitisation of the Austrian cultural heritage and archives
- Use of modern presentation techniques in Austrian federal museums
- Project "Österreichs libraries on-line" (<http://www.bibliotheken.at/>)
- DERAL: Telematics for Libraries in rural areas - multimedia education centres (<http://deral.infoc.ulst.ac.uk/>)
- Expansion of the compulsory delivery to the national library on electronic media
- Implementation of an InfoNET on popular Austrian culture covering all types of culture (folk music, literature etc.); digitisation of historical popular song archives
- Development of the use of electronic media and ICT in the scientific and economic work of the federal museums and in their public relations



### 2.4 Recent development: E-commerce Task Force

In June 2000, in order to boost Internet trading, the Austrian Economics Minister, Martin Bartenstein, set up 7 working groups on e-commerce. Their aim is to analyse why Austrian small and medium enterprises still face too many obstacles on their way onto the Internet. The Austrian Government considers that Austria is late in adopting e-commerce solutions: only 7% of Austria's SMEs offer their customers interactive services and total e-mail sales add up to only 291 million EUR per annum - 0.8% of the Austrian retail trade's total sales. However, 30% of Austrians are regular Internet users and approximately one third of them have purchased goods or services on the Internet at least once.



# Belgium



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## Introduction

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Belgium is a Federal State which consists of 3 communities (the Flemish Community, the French Community and the German-speaking Community) and 3 regions (the Flemish Region, the Brussels Capital Region and the Walloon Region). The country is further divided into provinces and municipalities. In this divided and decentralised context, each level has been assigned certain competencies with regard to the Information Society and telecommunication infrastructures. Each level has undertaken, financed and supported its own different strategy and projects aimed at promoting the development of the Information Society.

In the past, actions and initiatives concerned with the transition to the Information Society were mainly undertaken at the regional and community level. For example, the Flemish region issued a policy paper entitled "Multimedia in Flanders" in 1994 in the framework of its general strategy plan "Flanders-Europe 2002". In 1999, the new regional Government of Flanders presented a Digital Action Plan and launched a general public debate on a "A new project for Flanders" based on a policy paper entitled "The Colour Memo". Concerning the Walloon region, a task force on telecommunications was established in early 1995 and several programmes were launched, in particular the WIN project (Wallonia Intranet). The development of ICTs and the creation of an "integrated Knowledge Society" are two of the 4 key priorities defined by the Walloon Government in the "Contract for a future for Wallonia", adopted in 1999.

Prior to 1997, the Federal State's policy concerning Information Society was conducted in the framework of support programmes for the diffusion of telecommunications and multimedia. In May 1997, the Federal State started an umbrella policy with its Federal Action plan for the Information Society. In 1999, the new Federal Government announced several new structuring projects for the development of the Information Society and presented its position concerning "Belgium in eEurope".

Today, Belgium is ranked 15th in a group of 55 countries by the 2000 Information Society Index (IDC/World Times Survey), and 7<sup>th</sup> amongst the EU Member States. The growth of the Belgian telecommunications sector has been strong in recent years. In 1999, the Belgium telecom and ICT market represented 13 billion EUR, 12.3% greater than 1998. According to Fabrimetal, 38% of the active ICT companies in Brussels in 1999 did not exist 5 years ago. Mobile telephone penetration surged by 80%, with over 3.2 million Belgians now owning a mobile phone. Since the introduction of free Internet access at the end of 1999, Internet access has seen staggering growth. Recent figures released in March 2000 by the Belgian Internet Service Provider Association show that the total number of connections increased from 302,450 in June 1999 to more than 1,353,000 in March 2000, which represents an increase of 350% over the 10 months. It is very significant that free connections continue to grow at a speedy pace. It is estimated that 75% of home users have a free subscription.

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# 1. Historical Background

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## 1.1 Federal Initiatives (1994-1998)

In December 1994, the federal Council of Ministers approved the implementation of a 1994-1998 general Programme of support for the diffusion of telecommunications.

Further decisions, taken at the federal level in 1996, have led to the creation of a Support Program for the Information Society, including three sub-programs for the period 1996-2000:

- Support plan for the IS: Support for the TEN-34 project
- New services on BELNET
- Telematics in Public administrations.

These programmes were implemented by the Federal Office for Scientific, Technical and Cultural Affairs (OSTC, <http://www.belspo.be>). Administratively, the Federal Office for Scientific, Technical and Cultural Affairs (OSTC) is one of the Offices of the Prime Minister, and comes under the authority of the Federal Minister responsible for science policy.

In May 1997, the federal government, and more particularly the Minister for the Economy and Telecommunications, Elio Di Rupo, began an initiative to stimulate the development of the Information Society in Belgium.

On 30<sup>th</sup> May, 1997, a special Council of Federal Ministers was devoted to the Information Society. During this meeting the Council set up a Federal Action Plan for the development of the Information Society.

The action plan aimed to use new technologies to improve communication within the federal administrations as well as between public authorities, the public and commerce and industry.

Its main objectives were to propose:

- Simple and direct access to information for all categories of citizens and companies.
- Legally sound ICT applications.
- Optimal co-ordination among public administrations.

Three main actions were to be pursued:

- Reinforce and confirm the role of Belnet, the internet common access provider for research institutions
- The adaptation of Bistel, a videotext application, to Internet technology with a new brand name, FEDENET (mid-1997)
- Enabling of Internet access for all citizens to a major administrative database, with email facilities for further interrogation.

An Information Society Follow-up service has been established within the Department of Economic Information of the Ministry of Economy and Telecommunications.

Moreover the Minister of Economy and Telecommunications has announced:

- A vast consultation of federated entities (Regions, Communities) in order to finalise common applications and links
- A public consultation process concerning IS for spring 1998 under the form of a "Roundtable of the Information Society"



During 1998, several initiatives took place:

- Public consultation took place in 1998. Called "@GORA, Les Assises de la Société de l'Information", it consisted of three sessions targeted at specific public groups and dedicated to three topics: "Information Society and Companies"; "Information Society and Consumers"; "Information Society, Young people, culture and democracy" (proceedings available at [http://mineco.fgov.be/information\\_society/index\\_en.htm](http://mineco.fgov.be/information_society/index_en.htm)).
- On 12<sup>th</sup> June 1998 the Council of Federal Ministers decided to update its Action Plan with a view to improving administrative processes through the use of ICT. Additional actions have been added to this plan in order to achieve an efficient and effective administration through the application of ICT.

## **1.2 Initiatives of the Flemish Government (1994-1998)**

In 1992, the first Van den Brande Government launched a comprehensive plan called "Vlaanderen-Europa 2002" (Flanders-Europe 2002) whose objective was to develop a long-term vision for public policy, including a chapter on ICT.

Following the transfer of authority for science and technology from Federal Government to regional government in 1993, the Government presented a Policy document entitled "Technologienota Vlaanderen 2002" in April 1994 aiming "to build the Flemish Information Society" (Multimedia in Flanders) in accordance with the general strategic plan. The objective of "Technologienota Vlaanderen 2002" was to provide a new basis for the allocation of funds concerning R&D in three domains: ICT and multimedia, biotechnology and new materials.

In order to set up the Flemish action programme for IT, programmes were launched by the "Vlaams Instituut voor de bevordering van het Wetenschappelijk-Technologisch onderzoek in de industrie" (Institute for the Promotion of Innovation by Science and Technology in Flanders - IWT - <http://www.iwt.be>) to stimulate the R&D in IT. It formed the basis of the "Actieprogramma Informatietechnologie".

Several other major projects and funds were launched such as "Telenet-Vlaanderen" in 1995-1996 (an interactive broadband network on existing cable TV networks and alternative infrastructures) and Medialab (research centre). In 1998, other R&D programmes were launched: the "Multimedia Demonstratie Projecten" programme and the "Strategische Technologieën voor Welzijn en Welvaart – STWW Programma".

## **1.3 The Walloon Region (1995-1998)**

In early 1995, the Minister-President of the Walloon Region launched a Task Force to define a policy in response to the European Information Highways policy and to the Flemish policy initiatives. This Task Force gathered the major multimedia actors present in Wallonia (cable TV operators, Belgacom, Alcatel Bell, etc). Its tasks were to draw up an inventory of all existing infrastructures in the Walloon Region, to design scenarios for the development of networks that would be able to support interactive multimedia applications and to assess the financial and institutional conditions of the Walloon Region's telecommunication policy.

In May 1996, the Economic and Social Council of the Walloon Region unanimously adopted a series of recommendations for the information, telecom and media sector.

They have resulted in the launch of two initiatives:

- Programme for the development of a telecommunication policy in the Walloon region (Programme pour le développement d'une politique des télécommunications en Wallonie) - WIN (Wallonie Intranet): this project aims to develop a fibre network infrastructure covering most of Wallonia and to encourage the development of applications and services in the area of SMEs activity, the modernisation of public administration, schools on the Internet, etc.



WIN Network (source: awt)

- "Du Numérique au Multimédia" programme: this 1997-1999 programme of 17.5 million EUR aimed to promote new services and products potentially linked with new markets and employment, accelerate the coming Information and Communication Society, and reinforcing the Walloon know-how in the European market.

In November 1997, the Government of Wallonia launched its regional plan, which included specific actions promoting the Information Society. The "Déclaration de Politique Régionale", included, as part of the chapter about "a dynamic Wallonia", several ICT measures;

- an equipment initiative,
- a multimedia fund in favour of all Walloon secondary schools,
- a training plan for SMEs,
- the creation of a WIN management group,
- the creation of specific higher education multimedia programmes,
- the support for multimedia companies and multimedia products,
- the creation of a server dedicated to documentation about applications for disabled people
- and the creation of a specific governmental agency concerned with the promotion of telecoms and multimedia in the Region. Accordingly, the "Agence Wallone des Télécommunications - AWT" was established by a Decree on February 1999. It has established a regional Internet Portal concerning Information Society in Wallonie (<http://www.awt.be>).



Since then, several sectoral initiatives, in particular "Cyberecoles" for schools (<http://www.cyberecoles.wallonie.be>) and a series of measures to support SMEs and municipalities have been launched.

## **2. Current developments at the federal and regional level**

### **2.1 Federal Initiatives**

Following the election in June 1999 of a new Government, the Prime Minister Guy Verhofstadt presented his Declaration of Federal Policy in which he insisted on the necessity of modernising public administration through the use of ICT and electronic services (<http://premier.fgov.be>).

- **ICT and the Federal Administration**

The modernisation of the public administration will be a key challenge for the coming years: according to the Belgium Government, there is a long way to go as in terms of ICT the public administration must move *"from the Middle Ages to the virtual services of the XXI century"*.

Therefore, the Council of Ministers decided in October 1999 to create a National Consultative Committee on the basis of the proposal of the Minister for Civil Service and modernisation of the public administration. The National Consultative Committee is composed of representatives from various public bodies, industry and academics. Its role is to propose legal, technical and organisational solutions that should help to remove obstacles to Information Society development within the next 2 years. In particular the modernisation and accessibility of the public sector and the development of electronic government (electronic signature and public key infrastructures - PKI, electronic identity card, national registry, privacy, security, electronic public services, etc.). The Council gave its assent to this new body on 30<sup>th</sup> June, 2000 ([http://www.mazfp.fgov.be/fr/modernisation/belgique/public/commission\\_socinfo/intro.htm](http://www.mazfp.fgov.be/fr/modernisation/belgique/public/commission_socinfo/intro.htm)).

On 4th February, 2000, Erik Verhulst was appointed as the ICT-manager for the federal public administration. He has been appointed to co-ordinate and promote synergies between all Federal ministries and departments. The role also involves preparing a strategy for a global ICT vision and a common platform for ICT in the Federal public administration. He will also set concrete objectives regarding human resource requirements (the total number of workers and their necessary qualifications) and ways of implementation. The time frame for the formulation of the strategy is limited to a year.

Also in the field of public administration, the Council of Ministers approved on 31<sup>st</sup> May, 2000 a project extending the use of the provisional electronic signature system for social security. This was a proposal of the Ministers of Employment, Interior, Social Affairs and Pensions, and Agriculture and self-employed. As a consequence declarations and communications with social security system can be signed electronically. A legal solution to the question of the use of electronic signatures in all sectors of society is expected.

Finally, on 30<sup>th</sup> June, 2000, the Council of ministers approved the budget required for the implementation of a number of projects concerning the application of ICTs in the Justice System. The "e-justice" project will consist in launching pilot projects in Hasselt and Charleroi, providing judges and lawyers with ICT based tools such as videoconferencing and form digitisation (<http://www.just.fgov.be/>).

- **Electronic commerce**

In February 2000, Rudy Demotte, Minister of Economy, presented an orientation memorandum on electronic commerce that was adopted by the Council of Ministers on July 14, 2000. This memorandum seeks to promote the safe development of electronic commerce and states that the Government must institute a series of framework regulations, concerning in particular consumer protection, the respect of privacy and rules for e-commerce in the internal market. The memorandum states that the regulations should not place too great a burden upon developing e-commerce activity. Therefore, the challenge for public authorities is to find the balance between business opportunities and consumer rights ([http://mineco.fgov.be/information\\_society/e-commerce/orientation\\_paper/home\\_fr.htm](http://mineco.fgov.be/information_society/e-commerce/orientation_paper/home_fr.htm)).

- **Belgium in eEurope**

The Belgian federal government prepared a text under the title "*New European Ambitions for the New Millennium, an Agenda for an Information Society with Opportunities for all*" which represented the Belgian position to the European Council of Lisbon held on 23-24 March, 2000.

The paper stressed the need for a more balanced integration of economic reforms, employment and social cohesion in order to achieve "a Europe of innovation and knowledge". Furthermore, the paper argues that policies seeking to help the development of the Information Society must take into account the potential of the role to be played by SMEs.

The Belgian position was discussed with Great Britain on the occasion of the visit of the British Prime Minister, Mr. Tony Blair, to Belgium on February 23, 2000. A common position was on the role of government in the development of the Information Society was issued after the visit (<http://premier.fgov.be>).

## **2.2 Flanders Government initiatives**

- **The Coalition Agreement: A new project for Flanders 2000-2004**



Following the election results of June 13, 1999 a new Government of Flanders was formed in early July. Prior to its installation the new Government drew up a global coalition agreement presenting the policy priorities for the period 1999-2004 (<http://www.flanders.be/public/authority/government/policy/index.asp>).

This Coalition Agreement, called "*A new project for Flanders*", has been give substance by each minister in a policy paper, explaining the proposed actions in their specific area of competence for the next five years.

As far as Information Society is concerned, "*the breakthrough of the knowledge and information society, the abolition of internal borders in Europe (...) and the technological and biological revolution herald a new era, the scope of which is not yet clear. (...). There are also real threats: the threat of the division of society on the basis of the access to knowledge and the Information Society, and the degeneration of the environment, to name but two.*"

The Flanders Government intends to implement policies, which take these new social challenges into account. It has set out the following action lines:

- Integration of ICTs in the public administration in order to create customer-oriented services.
- Further provision of computers in education in order to avoid ICT literacy.
- Increasing the finance available for technological research.
- Strengthen Flemish scientific and technological potential and develop the content of the Flemish innovation policy in the context of the Innovation Act. An integrated innovation policy will encompass a focus on development, the distribution and use of new technologies, particularly for SMEs, and the combination of non-technological knowledge and technology. In this respect, the autonomous nature of the Institute for the Promotion of Innovation by Science and Technology in Flanders (IWT) will be reinforced as well as its support for SMEs.

Moreover, the Government has announced the introduction of a **Digital Action Plan**, which will significantly strengthen the position of Flanders in the digital economy. The digital action plan will have the following objectives:

- Stimulate the user of ICT in industry through easier access to ICT.
- Overcome the bandwidth problem of information networks and ensure suitable peripheral conditions, so that investments in the knowledge-based infrastructure become more attractive.
- New developments in the field of ICT, and the integration of these new developments in Flemish industry should be encouraged.
- By 2002, one quarter of all government services should be accessible via the Internet.
- A code of conduct for electronic commerce and Internet business should be established within one year.

- **"A new Flemish project for the coming decades: the Colour memo"**



On 7 July 2000, the Prime Minister Dewael announced that he would like to instigate a general public debate on *"a new Flemish project for the coming decades"*. The project is outlined in a paper called *"Colour Memo: Giving Flanders colours today and tomorrow"* (*"Pour une Flandre haute en couleurs"*).

The Paper has been drawn up following intensive discussions with more than 160 leading figures from the Flemish social, economic, cultural and educational sectors. It was then discussed and approved by the Government of Flanders. It will replace "Flanders 2002", the *"inspirational project"* of the previous government which appeared to have *"gone off the rails"* and was *"too corny"* according to the Prime Minister. This new plan should become the Flemish counterpart of "the active welfare state", which forms the guiding principle of federal policy.

Again, the importance of the information society is stressed as well as the necessity to *"respond quickly and creatively to the enormous opportunities offered to us by the new economy, but at the same time as protecting ourselves against its detrimental effects on society"*. A specific web site was put on-line by the Government in order to encourage exchange and debate amongst the public ([http://debat.vlaanderen.be/kleurennot\\_EN.html](http://debat.vlaanderen.be/kleurennot_EN.html)).

### 2.3 Walloon Government: Contrat d'Avenir pour la Wallonie



The development of ICTs and the creation of an "integrating Knowledge Society" is one of the 4 key priorities defined by the Walloon Government in the "Contract for a future for Wallonia".

This is a general development plan that was adopted in September 1999 and revised in 2000, following a major consultation process (revised version at <http://gov.wallonie.be/gov/caw/cawtop.html>).

During the contract's first phase, 20 measures are planned which include measures for the development of the Information Society, in particular:

- Support for the creation of business networks, using ICT and fibre optic networks and support for e-business and e-commerce.
- Creation of an Internet one-stop-shop (Portal) allowing citizens to access information and services offered by all Wallonian ministries.
- Integration of ICT with R&D policy including specific support measures.
- Development of new technologies in environmental fields.

- Establishing the Cyberecoles network and achieving the goals of the schools equipment plan. As of August 2000, there are 415 cyber media centres established in Walloon schools (<http://cyberecoles.wallonie.be/>).



- Awareness raising and dissemination of ICT amongst the general public, with the view to democratising access and ensuring a high level of service quality: Internet one-stop-shop, Internet access points in public spaces, citizen spaces on the Internet.

- Development of the Information Society at the local level, in particular in municipalities: local electronic services, the training of civil servants, Intranets within and between municipalities.



The Minister for the Public office released a budget for municipalities in order they can develop a citizen-oriented Internet site, the objective being that all the Walloon municipalities have their own site by November 30, 2001. In order to accompany the communes in this step, a guide of a hundred pages was developed by the Walloon Region. It details the procedures to be followed to conclude the tasks relating to the creation and the exploitation of an Internet site. (<http://www.awt.be/cgi/fr/vad/vademenu.asp>).

- The creation of an inter-universities Intranet.
- The economic development of the Win network (<http://www.win.be/>).
- The operation of regional actors and institutions in networks of the economy will be promoted in order to increase access to knowledge, simplify administrative procedures and facilitate the development of a structured and productive economy.

# Denmark





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## Introduction

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It is apparent that the transition to an Information Society has already begun in Denmark. As early as 1994, Denmark developed an IT strategy which has been accompanied by yearly updated Action Plans. Also in 1994, Danish IT policy was placed in a single ministry, the Ministry of Research, because it was considered that IT-development would be such a huge challenge that it would imply changes in society on a par with those experienced during the industrial revolution. During the first 5 years, Danish IT-Policy primarily focused on practical issues, such as liberalisation, infrastructures, hardware in education and several major projects for the public sector.

Since 1996 the Danish telecommunication market has been liberalised, resulting in fierce market competition and constantly decreasing telecommunication prices - some of the lowest in Europe. Denmark ranks 5<sup>th</sup> out 55 countries in the 2000 Information Society Index (IDC/World Times Survey) and 3<sup>rd</sup> among the EU Member States. Denmark has one of the most advanced telecommunication infrastructures in Europe (fibre-optic backbone throughout the country, fully digitised telecommunication network). It is one of the world's leading countries in IT investment per capita. According to figures from the Danish National Telecom Agency (end of June 2000), there are almost 57 mobile subscribers per 100 inhabitants as compared with 27.3 at the end of 1997. Denmark also benefits from widespread use of the Internet: in June 2000, there were 28.6 Internet subscriptions per 100 inhabitants, against 21.3 Internet subscriptions per 100 inhabitants at the end of 1999. Other figures show that more than 52% of Danish households own a PC and that that 3 in 5 Danes over the age of 15 have Internet access - this is among the highest rates in the world. Only 40% of companies had access to the Internet in 1997, but close to 90% are expected to have access in 2000 according to Danish Statistics, 2000.

Therefore Denmark has a number of advantages, which can be used in its conversion to the network society. However, there are also several obstacles. According to the Government, these are a poor high-tech entrepreneurial culture, a lack of large enterprises that can push the digital market forward, a sector-divided public sector, which makes it difficult to co-ordinate the process of conversion. In particular, according to a recent study by the Copenhagen Business School, Denmark is behind in the field of electronic government, as compared to other countries. For example, only 7% of all public institutions have a homepage (Ministry of Research, 2000). Some progress is needed: *"the new challenge is that government now is focused on its own processes for procurement, recruitment, etc. and not solely on providing assessable information, interaction and innovative IT-services"*.

In view of this, the Danish Government considered in the autumn of 1999 that the time had come for further development and set new goals for a future IS policy strategy. In particular, the Government now wishes to change the focus from the goal of having the greatest possible spread of IT to "IT as a tool in line with other goals" such as the Danish welfare model, employment and competitiveness. Therefore, the Minister of Research and IT initiated a re-evaluation of the Danish Policy under the heading "Digital Denmark". Following a discussion Paper entitled "Digital Denmark: conversion to the network society" published in November 1999 by the Committee for Digital Denmark, the Ministry of Research and IT published the new Danish IT Policy Strategy "Realigning to a Network society" in December 1999. Since then, new actions have been initiated according to new priorities.

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# 1. From "Info-Society 2000" to "Action for Change": evolution of the Danish IT action plans

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## 1.1 White Paper "Info-Society 2000" (1994)

In October 1994, Denmark launched its first national strategy for the development of the Information Society. The two-member Government Committee (L. Dybkjaer and S. Christensen) appointed by the Danish government outlined the national strategy in the White Paper "Information Society by the year 2000" ("Info-samfundet år 2000") (<http://www.fsk.dk/fsk/publ/info2000-uk/>).

*"Applied successfully, information technology is a source of economic development, improved life quality and better services, both public and private. A strategy must rely upon the extensive use of information technology, and it must be based upon values such as openness, democracy and responsibility for all members in society in order to avoid a division among Danes into an "A-team" and a "B-team" with regard to information technology. The public sector shall be actively involved with the private one and be the leading force in the efficient use of information technology."*


The priorities were the following:

- Implementation of an electronic service network in the public sector (at both central and local level - amt and kommune).
- Utilisation of data and protection of personal data (e.g. Citizens card).
- A better health sector with more efficient treatment (a nation-wide electronic health network enabling information exchange between doctors, hospitals, pharmacies and health authorities, and the introduction of electronic patient case files).
- The "global village" of research. (research networks; "Danish electronic research library"; the preservation of Danish language and culture).
- New ways in the educational system supported by technology.
- Children, IT and primary and lower secondary education. (IT network for all Danish schools and teachers, computers in schools).
- Libraries in the age of IT.
- The mass media through new channels.
- Better traffic with IT.
- The companies' network. (development of EDI, use of EDI for public procurement).
- New and cheaper tele-communication services.
- Open network of society ("a coherent "network of society", which appears as clear and accessible to ordinary citizens and companies as the telephone system").
- Everyday life of the Danes: life at work - life at home.
- Disabled people in the Information Society.

Further to this strategy, the Minister of Research and Technology has conducted a follow up process, re-adjusted the policy action plan on an annual basis in order to be compatible with changing reality.



These 4 areas have been implemented through 6 policies resulting in a number of initiatives:

POLICIES	INITIATIVES
<b>Policy 1 :</b>  <b>CITIZENS' RIGHTS IN THE INFORMATION SOCIETY</b>	<ul style="list-style-type: none"> <li>• "Fundamental rights in the Information Society": preparation of a green paper concerning citizens' rights in the information society</li> <li>• All libraries to provide free Internet access for all</li> <li>• Better, less expensive, Internet access</li> <li>• Senior citizens and IT</li> <li>• IT must speak Danish</li> <li>• Universal Design</li> </ul>
<b>Policy 2 :</b>  <b>OPEN PUBLIC SECTOR</b>  	<ul style="list-style-type: none"> <li>• "Self-service" in public administration</li> <li>• All user-oriented forms on the Internet</li> <li>• A home page for every government agency by January 1, 1998. <a href="http://www.danmark.dk/">http://www.danmark.dk/</a></li> <li>• An official e-mail address for every government agency</li> <li>• Legal Information freely available on the Internet</li> <li>• The Danish Legal and Official Gazettes on-line (<a href="http://www.jm.dk/">http://www.jm.dk/</a>)</li> <li>• Improved service in the courts</li> <li>• "Testing open mailing lists" on the Internet</li> <li>• Internet Bookstore</li> </ul>
<b>Policy 3 :</b>  <b>FLEXIBLE ADMINISTRATION</b>	<ul style="list-style-type: none"> <li>• Communication between municipalities, ministries and government agencies</li> <li>• Establishing a new distribution system for real estate data</li> <li>• Establishing public address sharing</li> <li>• A common, computerised visa register</li> <li>• Government Intranet</li> </ul>
<b>Policy 4 :</b>  <b>DIGITAL BUSINESS</b>	<ul style="list-style-type: none"> <li>• "Consumer rights": Legal protection for the consumer on transnational digital networks and the Internet (transactions)</li> <li>• Taxing Net-based services</li> <li>• Corporate Denmark</li> <li>• EDI in public procurement</li> </ul>
<b>Policy 5 :</b>  <b>SECURITY AND SAFETY IN THE INFORMATION SOCIETY</b>	<ul style="list-style-type: none"> <li>• Bill for digital signatures</li> <li>• Developing security solutions - "Privacy on the Net": through the IT Security Council (<a href="http://www.fsk.dk/">http://www.fsk.dk/</a>), the Ministry of Research is taking the initiative to review questions about the right to privacy, etc</li> <li>• "Making the most of the Internet": the Ministry of Research is taking the initiative for individual ministries and examining the need to change legislation or implement new regulations to ensure the optimum use of the Internet's potential</li> <li>• "Twenty-first Century dates in IT systems": public sector's handling of the year 2000 problem</li> </ul>
<b>Policy 6 :</b>  <b>DEVELOPING COMPUTER LITERACY.</b>	<ul style="list-style-type: none"> <li>• The IT promise</li> <li>• Education of teachers and continuing education</li> <li>• Developing state-of-the-art teaching tools for public schools</li> <li>• Electronic institutions of learning - <a href="http://www.uvm.dk/fsa/janus/janus.htm">http://www.uvm.dk/fsa/janus/janus.htm</a></li> <li>• Virtual education co-operation in the Øresund Region</li> <li>• National sub-strategy for IT research</li> <li>• Denmark's Electronic research libraries - <a href="http://www.bs.dk">http://www.bs.dk</a></li> <li>• The Centre for Multimedia</li> </ul>

## 1.5 National sub-strategies and sectoral action plans

As an extension of its IT strategies, the Danish Government has prepared sectoral sub-strategies and Action Plans.

- **Electronic Commerce in Denmark - a national EDI action plan (Elektronisk handel i Danmark - en national EDI-handlingsplan) - 1996**

On November 1996, the Government presented the Danish national EDI action plan which constitutes a comprehensive initiative for electronic communication between companies and between the public and private sectors (<http://www.fsk.dk/fsk/publ/elcom/>).

The EDI action plan contains 7 initiatives:

- Establishment of EDI standards in all sectors
- EDI for public procurement contracts
- Handling EDI in public-sector financial systems
- EDIFACT-based interchange of administrative information with the public sector
- Development of EDI software
- Legislation on digital signatures and electronic documents
- Danish EDI Council as initiator and co-ordinator

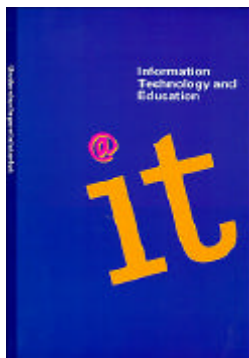
Its implementation is co-ordinated by the Danish EDI Council (<http://www.edi.dk>).

- **"Freedom to Choose: Action Plan for IT Use by People with Disabilities" (Frihed til at vælge - Handlingsplan for handicappedes IT-brug) - 1996**

Published in January 1996, "Freedom to Choose - Action Plan for IT use by People with Disabilities" follows up the Government's IT Policy Action Plan 1995.

This action plan emphasises the need for a purposeful effort to make the Info-Society accessible to people with disabilities (<http://www.fsk.dk/fsk/publ/1997/freedom/>).

- **ICT in the Education System: Action plan for 1998-2003 (Informations- og kommunikationsteknologi i uddannelsessystemet - Handlingsplan 1998-2003)**



Based on the report "Information Technology and Education" ([http://www.uvm.dk/eng/publications/9Informationtec/eng\\_it.htm](http://www.uvm.dk/eng/publications/9Informationtec/eng_it.htm)) published in 1997, the Ministry of Education published in 1998 a combined Strategy and Action plan for the integration of ICT into the education system during the period 1998-2003.

The strategy describes five central areas, where a number of ICT-initiatives will be implemented during the next five years: Pupils and ICT; Teachers and ICT; Subjects and ICT; Equal and flexible access to lifelong education; Co-ordination of ICT-based research and education.

This Strategy and Action Plan will be supplemented and revised regularly. The aim of the government is that the Danish education system is to be among the 5-10 best in the world. It is available at <http://www.uvm.dk/eng/publications/10InformationCom/1.htm>.

- **Government National sub-strategy for IT Research (National delstrategi for IT-forskning)**

In 1997, in order to prepare a national sub-strategy for IT research, the Ministry of Research and Information Technology appointed a strategic committee with

representatives from the Ministry of Research and Information Technology, the Ministry of Business and Industry and the Ministry of Education, as well as Research Councils.

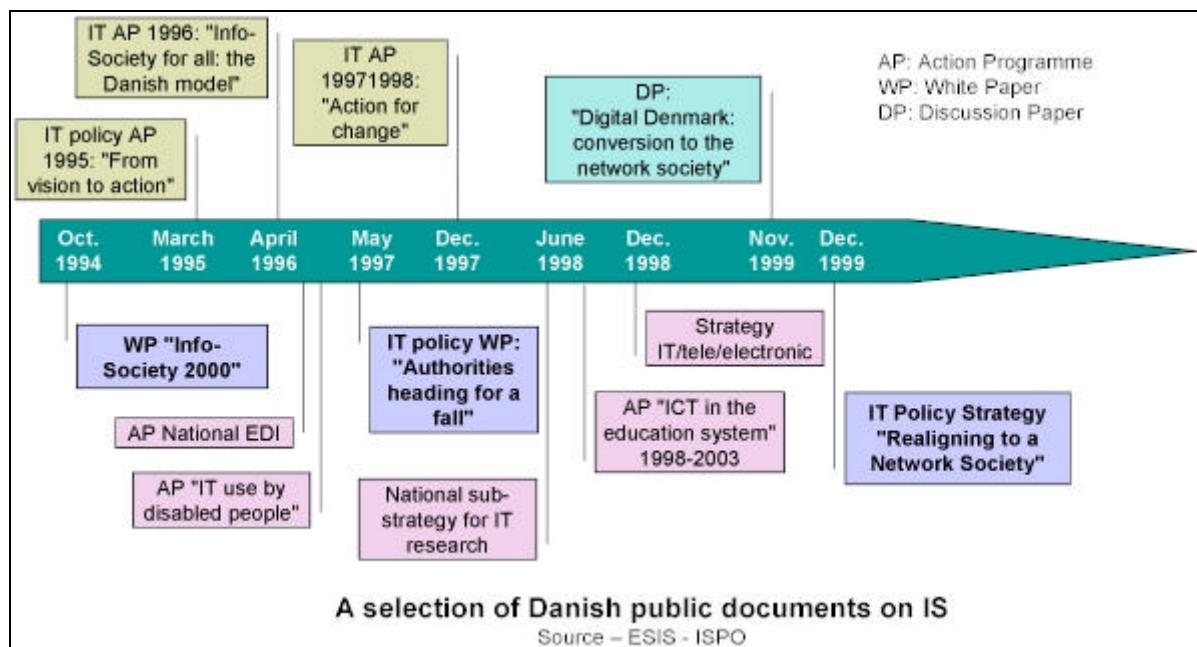
Published in June 1998, the sub-strategy provides a framework for IT research. It outlines the overall goals for IT research and provides guidelines for prioritising research subjects and areas in the field of IT, work allocation and co-ordination, as well as the distribution of resources (available only in Danish at <http://www.fsk.dk/fsk/publ/1998/nation/>).

- **Danish strategy for the IT, Telecommunication and Electronics industries (Danmarks Erhvervspolitiske Strategi - IT/Tele/Elektronik)**

In December 1998, the Government released a Strategy for the IT, Telecommunications and Electronics industry "Denmark Strategy for Growth".

This sector provides the basis for the development for all companies, all citizens and the whole of the public sector - indeed, the whole of society. Also, Danish IT, telecommunications and electronics companies provide almost 100,000 jobs and have sales of more than 20 billion EUR. The sector is growing faster than other sectors of industry. Therefore, the Government considers that it is vital for Denmark to have strong IT, telecommunication and electronics sectors and that these sectors are the subject of particular and constant political focus.

Following a close dialogue with the entire industry – from hardware, telecommunications and electronics to software, multimedia and other digital products, the Government presented an integrated strategy for the industry, based on three pillars: manpower, research and venture capital. The Strategy contains 75 initiatives and guidelines. Amongst the concrete initiatives are the creation of an "IT College", a Centre for IT Research (CIT), a Research Network (Research-Net), a Centre for power electronics and Business Development Finance for innovative companies.



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## **2. Digital Denmark; "Conversion to a Network Society" and "Realigning to a Network society"**

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In autumn 1999, the Government decided to re-assess its IT Policy. It considered that after 5 years of success for the first technology-oriented policy, the policy should become more socially oriented:

*"A new overall IT policy strategy for the Government should have as its starting point that information technology is already widespread in society, and should identify on the basis of a critical analysis of the positive and negative social consequences of information technology what key areas Denmark should aim at - where it is crucial that we should still be at the forefront, also seen in an international perspective, and where this can only be ensured via political initiatives. At the same time, it is important to identify the areas in which political initiatives are not needed, either because - in view of the general goals we have for Danish society - they are areas in which it is not essential to have a leading position, or because they are areas in which IT developments are driven by factors other than political initiatives".*

Therefore, the Minister of Research and IT initiated a re-evaluation of the Danish IT Policy under the heading "Digital Denmark" and started to prepare a new IT strategy. It considered that "Digital Denmark" should involve the whole Government and not only the Ministry of Research and IT.

### **2.1 Preparation of a New IT Strategy (November 1998)**

In November 1998, the Danish Minister of Research and IT appointed a new two-member Committee (comprising Lone Dybkjær, Member of the European Parliament and Jørgen Lindegaard, Managing director of GN Store Nord) to prepare a proposal for the Government's future IT political strategy entitled "Digital Denmark". On the basis of this Committee's report, the Minister of Research and Information Technology, in co-operation with the relevant ministries, drew up a proposal for an overall future IT policy strategy for the Government.

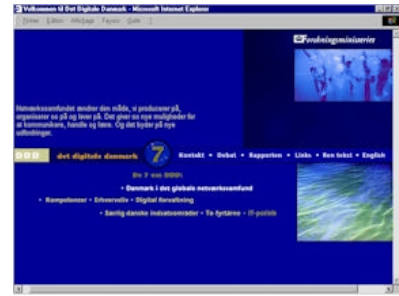
As a basis for the Committee's work, the Ministry of Research and IT drew up a status report of IT development in Denmark. In addition, the Minister of Research and IT, in consultation with the Committee, appointed a reference group for the Committee consisting of about 10 people from the business sector, IT industry, the universities and the public sector. It was also possible for the Committee to draw on international experts. Moreover, information and inspiration have been gained during the course of the work thanks to a group of 50 - 60 people from the most important organisations in Denmark who took part in thematic seminars, hearings and consultations on topics such as:

- A technological leap - from plough to portal
- Danish identity in a network society
- The business community in a network society
- Competence in a network society
- IT in the public sector
- A life with IT



There was also an open electronic debate on each of the themes launched by the Minister of Research and IT, Jan Trøborg.

A tele-consultation web site has been created: <http://www.detdigtaledanmark.dk>.



The Committee has also taken into account, "Agreement in Principle on Telecommunication Policy aims - The Danes' admission Ticket to the Network Society", agreed by all political parties in the Danish parliament in September 1999 (<http://www.ing.dk/tekraad/eng/publicat/rt/rtt121.htm>).

## 2.2 Publication of the Discussion Paper: "Digital Denmark: conversion to the network society " (November 1999)

One year after its creation, in November 1999, the Committee for Digital Denmark published its discussion paper on the Danish IT Strategy for the future under the title "Digital Denmark - conversion to the network society" (Det Digitalt Danmark - omstilling til netværksamfundet' - <http://www.detdigtaledanmark.dk/english/contents.html>).



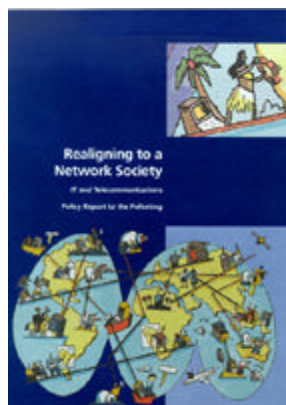
The Report presents a list of IT policy goals for the development of a network society and a number of recommendations for concrete initiatives in this area. It recommends that the government's new IT policy strategy focuses on the use of IT (where, how) and not only on disseminating new technology. The paper takes into account the fact that technology is developing rapidly throughout the world. Therefore it analyses the challenges and opportunities facing Danish society in connection with the development of information technology.

Consequently, the IT policy strategy that the committee has formulated aims to ensure that Danish development is focused on the areas where they are strongest and where the best opportunities for the future lie. Five objectives and areas of actions have been identified:

- **Life-long Learning:** As the first country in the world, Denmark is to ensure its citizens access to life-long learning in the network society.
- **Denmark as an E-commerce Nation:** Denmark is to be one of the five countries in the world which have the largest e-commerce turnover per inhabitant in 2003 and Denmark is to be able to offer competitive outline provisions for enterprises in the network society.
- **More effective and cheaper services via Digital Administration:** At the latest by 2003, Danish public administration is to provide the best and most efficient public service in the Nordic countries with the help of digital administration.
- **Danish Internet Initiatives:** Participation in democracy, open decision-making processes and Danish cultural activities are to be supported by new and attractive Internet services for all citizens by 2003 at the latest.
- **IT Lighthouses:** Two IT lighthouses are to be established in Denmark, one in Northern Jutland and one in Ørestaden, to promote, from different perspectives, IT development and IT use in the network society.



## 2.3 IT Policy Strategy: "Realigning to a Network society" (December 1999)




In response to the suggestions of the Discussion Paper "Digital Denmark" the Ministry of Research and IT published the IT Policy Strategy under the title "Realigning to a Network society" in December 1999 (<http://www.fsk.dk/fsk/publ/2000/realigning/>)

It is drafted as a report from the government to the Danish parliament (Folketing). The report contains 6 objectives to be attained through 37 concrete initiatives. These are to be implemented within a specific timeframe during the year 2000 as a first step following on from the report from the Committee on Digital Denmark. In addition, other initiatives are being considered (see table below).




The Government's objective is that Denmark:

- should have the most modern, future-proof infrastructure in which as many citizens as possible have broadband access
- gives its citizens fundamental IT rights so that they feel comfortable and secure when they are on the Internet
- assures its citizens of life-long learning and quality in the network society
- is committed to e-commerce and maintains Denmark's position of strength as a competent trading nation
- makes it easy for its citizens to contact the public authorities 24 hours a day
- enhances IT policy efficiency through, for example, annual network reports

### Objectives and Initiatives

Objectives	Initiatives
<p><b>Telecommunications Infrastructure</b></p> 	<p><b>Objective:</b> Denmark should develop a modern future-proof telecommunications infrastructure to which as many Danes as possible are to have access with the lowest possible cost:</p> <ul style="list-style-type: none"> <li>• Wireless subscription Network: an alternative network which will enhance competition - See National Telecom - Telestyrelsen Agency <a href="http://www.tst.dk/">http://www.tst.dk/</a></li> <li>• Mobile Access to the Internet (UMTS): an invitation to tender for frequencies will be implemented, which is to form the basis for the build-up of these third-generation mobile networks</li> <li>• Cheaper to make calls on mobile Phones: give mobile market access to more frequencies</li> <li>• Increased Competition: new and more effective telecommunications legislation to ensure real competition</li> <li>• Better Communication for Emergency and Stand-by Purposes: establish a professional and reliable network for improving communication in the field of emergency and stand-by-arrangements</li> </ul>

<p><b>A Network Society for all</b></p>	<p><b>Objective:</b> a code of fundamental IT rights should be established for citizens to benefit security and comfort on the Internet:</p> <ul style="list-style-type: none"> <li>• Security on the Internet: encryption policy is to be drawn up</li> <li>• Telephone Line to the public Authorities: one collective telephone number to the public Authorities from which citizens can obtain general information will be established</li> <li>• IT in Danish: language technical tools are to be developed (translation engines, Danish language technical dictionary)</li> <li>• IT and Public Service</li> <li>• Accessibility for the disabled: a situation report on the IT initiatives for the disabled which have been taken so far is to be prepared. The Government has decided to set up an inter-disciplinary ministerial committee to deal with issues concerning the disabled</li> <li>• The Public Libraries in the Network Society: a new Act on library activities will give the population improved access to information (access to the Internet and digital information resources and to lend music media and CD-ROMs, search and order materials at libraries via the Internet)</li> </ul>
<p><b>Life-Long Learning</b></p>	<p><b>Objective:</b> It should be ensured that all citizens have the opportunity to participate in a wide range of education programmes on a continual basis:</p> <ul style="list-style-type: none"> <li>• Virtual University: remote teaching for students in Denmark and abroad via the Internet</li> <li>• Better IT at Universities</li> <li>• Home Pages for Students</li> <li>• Learning Lab Denmark: a research-based experimental centre, which focuses on learning and skills development. By means of experiments LLD develops a knowledge of how companies (private as well as public), educational institutions and organisations learn and develop new skills and competencies (<a href="http://www.lld.dk/">http://www.lld.dk/</a>)</li> <li>• IT integration in All Subjects: Denmark is to be the first country in which IT is included as an integral element in all subjects</li> <li>• Life-Long learning: all citizens, irrespective of their age, educational background and residence, are to be offered the possibility of keeping up and developing new competencies and skills, which are in demand in the network society</li> </ul>

<p><b>E-Commerce</b></p>   	<p><b>Objective:</b> to make Denmark a leading IT nation, allowing businesses of all sizes to sell their goods and services online:</p> <ul style="list-style-type: none"> <li>• Electronic Signature: the Ministry of Justice has set up a committee, which is to prepare proposals on the use of electronic communication</li> <li>• Objectives for Public E-Commerce</li> <li>• A Public Auction Hall on the Internet: development of a centre for e-commerce: Ørestaden. It will be built up in connection with the large-scale initiatives which have already been planned in the area: the IT College, the IT Science Park, Focus on E-commerce Initiative / Fokus på E-handel (<a href="http://www.e-fokus.dk/">http://www.e-fokus.dk/</a>), Centre for e-commerce/ Center for Elektronisk Handel (<a href="http://www.inf.cbs.dk/cec/">http://www.inf.cbs.dk/cec/</a>, etc.). To this are added a number of new elements: <ul style="list-style-type: none"> <li>- In connection with the IT College and the IT Science Park, an E-commerce House - E-hus Danmark - will be established a building in which know-how, methods, tools and international contacts can be built up and where e-commerce enterprises can locate their business etc. (<a href="http://www.elektroniskhandel.dk/">http://www.elektroniskhandel.dk/</a>)</li> <li>- An annual international e-commerce competition is to be held with prizes being awarded to the enterprises and countries that have done best</li> <li>- An overall home page (Copenhagen Cyberport) is to contribute to establishing an international environment in which knowledge about e-commerce can be exchanged</li> </ul> </li> <li>• E-commerce Thermometer to monitor the development in Danish e-commerce</li> <li>• Better management of the Enterprises of the Network Society: partnership is to be established on e-management development with participation of trade organisations, educational establishments and other relevant science centres. The task of which will be to establish nation-wide initiatives within the e-management of the conversion of the enterprises to the network society</li> <li>• Prize Award for Digital Businessmen</li> </ul>
<p><b>Digital Administration</b></p>	<p><b>Objective:</b> 24 hours/day digital Administration will facilitate the contact between citizens and public authorities</p> <ul style="list-style-type: none"> <li>• Electronic Bridge across Øresund. In order to facilitate the integration of citizens and trade and industry in Øresund and create a basis for Øresund as an e-commerce centre, an information function is to be established in the region</li> <li>• Citizen's Access to Their Own Electronic Data</li> <li>• Personal internet Access to Public Authorities: all Danish citizens are to be offered personal Internet access to publicly registered information about themselves. It will be a customised information system, which is to easy, rapid and secure</li> <li>• Creation of a Public Information Server, on the basis of already existing public registers</li> <li>• Electronic Forms: An increasing number of forms are to be offered on the Internet so that all important forms can be found on the Internet before the end of 2002 (<a href="http://www.indberetning.dk/">http://www.indberetning.dk/</a>)</li> </ul>

	<ul style="list-style-type: none"> <li>• Effective Electronic Filing: a review is being implemented as an introduction to a plan of action, which is to speed up the switch of the public administration to electronic administration, including effective electronic filing</li> <li>• Mark Book for Public Home pages: a quality check of the public home pages will be made four times a year</li> <li>• Open Mail Lists on the Internet</li> </ul>
<b>IT-Lighthouses IT Maps and IT Reviews</b>	<p><b>Objective:</b> An Annual reporting network of IT Lighthouses, IT Maps and IT reviews is expected to improve the efficiency of IT policy.</p> <ul style="list-style-type: none"> <li>• Denmark's first Electronic Society (Northern Jutland): establishment of a regional IT environment and an IT lighthouse the region</li> <li>• Strategy for Ørestaden as Network Society: A strategy is to be prepared for Ørestaden as a network society based on the large-scale initiatives which have already been planned in the area, but with greater speed, more focus and a clearer strategic cohesion</li> <li>• IT maps: with a view to achieving synergy effects from the many IT projects around Denmark, an initiative will be taken to gather and communicate experience of projects at political, administrative and technical levels which are otherwise kept separate</li> <li>• Report on Convergence in the Network Society</li> <li>• Annual IT Policy review</li> </ul>
<b>Miscellaneous Initiatives</b>	<p>A number of initiatives are being considered:</p> <ul style="list-style-type: none"> <li>• <b>Share Options:</b> the rules on the taxation of share options are to be changed so that they can be used to a greater degree as a tool for recruiting and holding on to employees</li> <li>• <b>Access to the Internet for every 10th Pupil:</b> an analysis is to be made of the status of and plans for high-speed Internet access for the pupils in primary and lower secondary schools and out-of-school educational establishments. On this basis, it will be considered whether to include the subject in the negotiations on the coming municipal agreement to ensure at least one high-speed link-up to the Internet for every 10th pupil</li> <li>• <b>More Computer Science Graduates:</b> the number of students admitted to the computer science degree courses is to be doubled over three years</li> <li>• <b>PC Scheme for All Publicly Employed Teachers:</b> for a 2-year period, all publicly employed teachers and instructors are to be offered a home PC with Internet access. Financed by a combination of user payment via subtractions from the gross salary and employer's contribution</li> <li>• <b>Development of Digital Teaching Aids and Materials:</b> a specialist and financial partnership is to be established between the Ministry of Education, producers of teaching aids and materials and multimedia on the development of digital teaching aids and materials of a high quality for different levels in the educational system</li> <li>• <b>More IT research and teaching</b> on further education degree courses to attract more IT students</li> </ul>

	<ul style="list-style-type: none"> <li>• <b>Danish IT research:</b> promotion of the Danish research initiatives in the network society in certain areas (e.g. security and encryption of telephony). An IT and telecommunications public-private consortium is to be established</li> <li>• <b>Research Programme on a Network Society for All:</b> increased research initiatives focused on the social perspectives of the network society (IT and democracy, cohesion of Danish society, knowledge gap)</li> <li>• <b>Five IT "Incubators"</b> as a Food Chain for the Innovation Environments</li> <li>• <b>Efficiency in the State Sector:</b> digitisation of the State sector's internal administrative routines is to be begun. (e.g. payroll and personnel functions, IT operations and support, electronic case-handling systems and government procurement)</li> <li>• <b>Portal <a href="http://www.foreninger.dk">www.foreninger.dk</a>:</b> to support the associations' interactive communication with their members, public authorities and other interested parties</li> <li>• <b>Green IT Policy:</b> As part of the Danish environmental protection policy, calculations are to be made which highlight the environmental consequences of increased communication and e-commerce in the network society</li> </ul>
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The Government wants to ensure that this IT strategy will not be "just a one-off affair". In that perspective, the 37<sup>th</sup> initiative states that there will be an annual IT policy review. The Government is to prepare an annual IT policy network report to the Parliament (<http://www.ft.dk/>), in which:

- The IT policy initiatives are compared with the many objectives, strategies and plans of action within various sectors.
- A review of legislation pertaining to IT policy will assess which Bills in the last session of Parliament have had the greatest significance for the development of IT and the conversion to the network society
- A comprehensive IT statistical model will quantify the development of IT in Danish society and Denmark's position in relation to other leading IT nations.

This will be set in motion in the fourth quarter of 2000.

For the Government, it is also essential that all interested actors and citizens in Danish society participate in shaping the continuous development of the network strategy. Therefore, 3 regional IT policy conferences are planned in the course of the year 2000.

## 2.4 Recent developments

- **Electronic commerce: code of conduct**

The Danish Ministry of Trade and Industry has, together with the Ministry of Research and Information Technology and a number of consumer and business organisations, taken the initiative to develop an e-commerce webseal scheme for Danish Businesses i.e. a code of conduct for Internet trading and marketing. During the summer of 2000 the working group agreed on a set of guidelines (available for download at <http://www.e-fokus.dk>). At present, members of the working group are discussing whether to set-up an authority that shall manage the scheme and ensure that companies are following the guidelines. The Danish Government has supported this scheme, but it is a non-governmental scheme and the government will not be involved in its further development.

- **A programme on IT in education**

Denmark is in the frontline regarding IT equipment in schools. An international study from the International Association for the Evaluation of Educational Achievement (IEA) shows that Danish pupils are among those who use the Internet the most in the teaching. The share of Danish schools, which have access to the Internet for use in the teaching, was 85% in December 1999, and it is increasing steadily. Of the 26 countries dealt with by the study, this was the 6th highest share. Only approximately 1% of Danish schools had no plans to access the Internet during the 1999/2000 School year.

However, the Government considers that there is a constant need for improvement in the development and pedagogical use of IT-technology and other media in basic school education. Therefore a political decision was taken in June 2000 to spend 46 million EUR on IT and media in the Folkeskole (municipal primary and lower secondary schools). The whole action will take place over a 3½-year period, and it will start on 1 January, 2001.

This budget shall ensure that Danish pupils and teachers will be up to date in IT-technology. It will be used in particular to develop digital teaching materials and to train teachers in primary and lower secondary schools and colleges of education. Furthermore, all schools will be connected to the Internet.

The action will be organised in four interrelated sub-projects.

**1. The education offer**

The project is to contribute to establishing the framework for enabling all pupils in the Folkeskole to take part in state-of-the-art teaching with IT and media in an integrated way. The Ministry has already launched in August 1999 Denmark's first web portal tailored specially to the needs of teachers and pupils, which is called the EMU – the electronic meeting place for the educational world (<http://www.emu.dk>).

**2. DR– education**

The project will among other things support the development taking place in the wake of media mergers. In this context, Radio Denmark will produce teaching materials that will utilise text, sound and pictures. These can be presented in analogue as well as in digital form.

**3. Connection to the Sektornet and the Internet**

Basic schools (approximately 25%) that are not yet connected to the Sektornet (joint network for all educational institutions in Denmark - <http://www.sektornet.dk/en/>) will be offered connection (with which they will also get access to the Internet) under the same grant allocation terms that apply to those who are already connected.

**4. Pedagogical IT driving licence**

Through a system of grants, the teachers will as soon as possible be offered a pedagogical IT driving licence. In addition, the continuing training provision for college teachers will be intensified.

# Finland





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## Introduction

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Over the last few decades the Finnish have made a remarkable transformation from a farm/forest economy to a diversified modern digital economy. Today, Finland has become one of the world's leaders moving towards the Information Society: it is ranked 3<sup>rd</sup> in the world by the 2000 Information Society Index (IDC/World Times Survey), after Sweden and the United States. Through large investments in education, research, product development and infrastructure, Finland has reached advanced levels of development, implementation and diffusion of telecommunications systems and ICT based services. The country is number one in computers connected to the Internet per capita and in mobile phone ownership: in early 2000, 65% of Finns had a mobile phone subscription and 78% of the 2.35 million households in Finland now have at least one mobile phone according to the recent report "Mobile phones and computers as parts of everyday life in Finland" from Statistics Finland. At the end of 1999, there were approximately 121 hosts per thousand inhabitants ranking Finland second in the world after the United States (Hostcount by DNS domains per 1,000 inh.). According to Finnish Internet Tracking study carried out by Taloustutkimus Oy, 56% of Finns between 15 and 74 years of age were using the Internet in May 2000, which represents a growth rate of 19% since the previous year. 25% of them use the Internet daily or almost daily.

It is considered that the current success of Finland as a digital country results in part from a far-sighted, goal-oriented policy. During the first half of the 1990s, continuous work has been conducted on new programmes aimed at promoting the information society. Extensive studies were carried out with the aim of creating a national information strategy which led in 1994-1995 to the first National Information Strategy, under the leadership of the Minister of Finance. Following on from this Finland launched a number of measures and revised action plans, at the national, regional and sectoral levels. Also, the Government has acted as a catalyst for the wide-take up of ICT and has been a leading user of ICT in delivering public services.

However, progressively, the Finnish information society strategy has been criticised for placing too much emphasis on technology and competitiveness instead of citizens. Therefore, in 1997, a major evaluation and revision process of the 1994 Information Society Finnish strategy was engaged. It resulted in a second strategic plan in December 1998 entitled "Quality of Life, Knowledge and Competitiveness" where Finland aims to position itself as a forerunner in the construction of an Information Society based on human and sustainable development. Its vision is *"Finnish society develops and utilises the opportunities inherent in the Information Society to improve the quality of life, knowledge, international competitiveness and interaction in an exemplary, versatile and sustainable way"*.

Since then, actions lines have been followed by concrete actions, in particular the launch of the spearhead projects and development networks which are included in the Strategy.

During the Finnish Presidency of the European Union (1<sup>st</sup> July - 31<sup>st</sup> December 1999), Finland played an active role in the development of a European Information Society. The Helsinki European Council took note of the progress achieved during the Finnish Presidency and welcomed the e-Europe initiative launched by the Commission on 8 December 1999.

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# 1. Evolution of the Information Society in Finland

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## 1.1 The First IS national strategy and its implementation (1994)

In Finland, the Information Society strategy concept dates back to the work of the Information Society Advisory Board (1976 to 1991) and a country review of Finland's IT and telecommunications policies performed by the OECD between 1990 and 1992. One of the conclusions of the OECD's work was that Finland had reached very high levels of IT and telecommunications penetration and expertise but that the country was lacking a clear statement of strategy in these areas. At the same time, the United States was launching the concept of the Information Highway and, following the Bangemann report the European Union was preparing a strategy for the European way into the Information Society.

Consequently, the Government decided to charge the Ministry of Finance with the task of preparing the first Finnish IS strategy. It was completed at the end of 1994. The report is entitled "Finland towards the Information Society – a National Strategy".

It highlighted 3 challenges facing the country:

- External challenges linked to globalisation: Finland must integrate with the open global economy.
- Internal challenges linked to economic crisis: Finnish society needs renewal to overcome the economic depression.
- Pressures for change arising from new information technology.

Therefore, this first Information Society strategy for Finland was based on three main elements:

1. Renewal into an Information Society.
2. The development of an information industry.
3. The creation of the necessary conditions: research, know-how, development of an IT infrastructure.

The strategy contained 5 lines of action:

- Action Line 1: IT and information networks to serve as tools in private and public sector renewal.
- Action Line 2: Information industry to become an important sector of economic activity.
- Action Line 3: Professional expertise in ICT to be maintained at a high overall level, with selected peaks.
- Action Line 4: Everyone to have the opportunity and basic skills to use the services of the information society.
- Action Line 5: Finland's information infrastructure to perform competitively and to be capable of providing high quality services.

Each action line encompassed a number of recommendations, 46 in all.

## 1.2 Government Position Paper (Aho, 1995)

At the beginning of 1995, at the initiative of the Prime Minister, Esko Aho, and on the basis of the 1994 Report and inputs from other ministries, the Cabinet Office drew up a Position Paper on measures for the development of the Information Society, which was approved on January 1995. It stipulated that each Ministry, Department and Agency should prepare detailed sectoral operational plans and concrete actions to implement the principles of the IS strategy.

### **1.3 Lipponen's Government Programme and its implementation in 1995 and 1996**

A new Government was appointed in March 1995. The new Prime Minister prepared a new programme in which he confirmed the emphasis on Information Society and the implementation of the Action Lines included in the previous Position Paper. A document was published by the Minister of Finance, which presented a brief summary of the 1994 report and an analysis of developments related to its implementation during 1995 and 1996. It was published under the title "*Finland's way to the information society - The National Strategy and its Implementation*"(<http://www.tieke.fi/arkisto/tikas/engala.htm>).

In fact, numerous activities took place in 1995 and 1996.

#### **• Sectoral Information Society programmes**

Several ministries published their sectoral IS strategies with a development programme and an "IS budget".

The most active were:

- The Ministry of Education And Culture: The first strategy was focused on education, training and research and was built upon the recommendations of a special working group established in June 1995. The second strategy was the Cultural Information Society Programme, whose aim was to improve the availability of cultural services (libraries, museums) through IT.
- The Ministry of Transport and Communication: In February 1996, the Ministry of Health and Welfare presented its IT strategy entitled "Exploitation Strategy of Information Technology for Welfare and Healthcare". (<http://www.vn.fi/stm/suomi/vastuullamme/tietotekninen/tteknmain.html>)
- In March 1995, under the leadership of the Ministry of Interior, the Telework Theme Group of the Advisory Committee on Rural Policy prepared a national programme for developing and promoting telework (<http://www.uta.fi/telework/>).

#### **• Creation of the National Committee for Information Society**

In May 1996, the Government created a National Committee for Information Society Issues (also named "National council for Information Society"). Members of the committee, nominated for a period of 3 years, represent the private and the public sector as well as research. The chairman of the committee was the Minister for Administration, Jouni Backman, and the vice-chairman was the Minister for Education, Olli-Pekka Heinonen. The Ministry of Finance provides the secretariat.

The Committee's tasks are:

- To promote information and discussion about the development and the impacts of the Information Society.
- To follow the development projects focused on the Information Society at the national level.
- To develop and work towards new initiatives.
- To promote national and international co-operation.

#### **• Establishment of the Information Society Forum**

Also in May 1996, the Ministry of Finance established a broad "Information Society Forum". The Forum comprises around 55 experts representing different viewpoints on the Information Society. The IS Forum assists the National Council for the Information Society. It was chaired by Yrjö Sotamaa, the Rector of the University of Art and Design, Helsinki.

The Forum founded four working groups:

- Fundamentals of Information Society.
- Network Economy and Work.
- Democracy, Every day life and Learning.
- Shared Information and Interaction Market.

#### • **Local and regional authorities**

Local and regional authorities have started to work on IS issues and launched projects. Among IS regional strategies which have been developed, one can cite:

- Etelä-Savo - ESMO Southern Savo Multimedia Network (<http://www.mikkeli.amk.fi/esmo/maintxt.htm>)
- the Kainuu region (<http://www.kainuu.fi/tietoyhteiskunta/>),
- North Karelia (<http://195.237.228.176/nokis/indexeng.htm>),
- Varsinais-Suomi (<http://www.tolppa.net/>),
- Northern Finland Information Highway (<http://www.otm.fi/pstv/index.html>),
- Koillismaa (<http://www.koillismaa.fi/>) etc.

Full description of IS regional strategies and projects are available on the Local and Regional Information Society web site (<http://www.locregis.net>).

#### • **Launch of National Multimedia Programme**

A National Multimedia Programme (KAMU) was launched by the Ministry of Trade and Industry and TEKES (The Finnish Centre for Technological Development - <http://www.tekes.fi/>) to create "content industry" (1995-November 1997)

#### • **The Computer Driving Licence**

TIEKE (Centre for IT development - <http://www.tieke.fi/>) innovated with the Computer Driving Licence which is a hands-on examination which measures the candidates' computer basic skills in information technology. CDL is now internationally recognised and has been adopted by some countries and adapted to their needs.

### **1.4 Starting the revision of the Finnish strategy (1997)**

In 1997, Ministries revised their sectoral action plans, such as those of the Ministry of Education and Culture in October 1997.

More fundamentally, the National Information Society Forum took the initiative in the spring of 1997 to launch a wide review of the 1994/1995 Finnish IS strategy. The reason behind this was the focus of the earlier strategy on technology and economy. In fact, according to the Finnish Minister of Transport and Communications during the ESIS conference in March 1998: *"The Finnish information society strategy has been criticised for placing too much emphasis on technology and competitiveness instead of citizens. It has been criticised for neglecting the regional and local aspects as well as the needs of different citizen groups - the elderly, the handicapped, the unemployed. It has also been criticised for not paying attention to cultural questions such as content or language issues"*.

Now, Finland considers that the future strategy should focus more on people and their development in a rapidly changing environment. In particular, they regard improving the quality of life, supporting sustainable development, ensuring social balance and preventing the exclusion of people, communities and regions as being the biggest challenges in the development of the Information Society. The participation of municipalities, regions and community organisations in the development of the Information Society is therefore very important.

The National Council for the Information Society, the Council of State and the Finnish National Fund for Research and Development (<http://www.sitra.fi>) supported this revision process. A steering group for strategy renewal was implemented. This group was chaired by the chairman of SITRA and vice-chaired by the Minister of Finance. Members of the group were representatives of both the public and private sectors (Ministries and Agencies, ICL Data, Nokia, Trantex, etc.). A permanent secretariat headed by Antti Rainio (SITRA) was established.

To back up the strategy renewal process, around 20 thematic and generic studies were produced. Experts were interviewed and several events and seminars took place in 1997 and 1998. A wide public discussion on the values under-pinning the vision was organised and carried out.

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## 2. A new Finnish IS strategy and its implementation

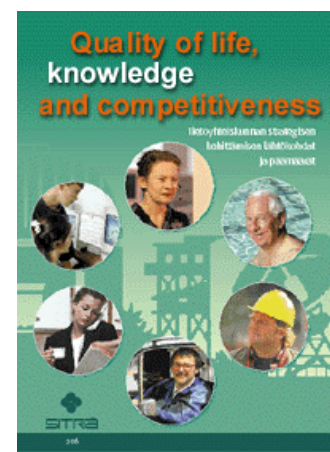
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### 2.1 A new IS national Strategy: "Quality of life, knowledge and competitiveness" (December 1998)

In December 1998, SITRA published the revised strategy under the title "*Quality of life, knowledge and competitiveness - Premises and Objectives for the Strategic Development of the Finnish Information Society*" ("kansallisen tietoyhteiskuntastrategian: Elämänlaatu, osaaminen ja kilpailukyky").

The cornerstones of this strategy can be summarised with 4 key words:

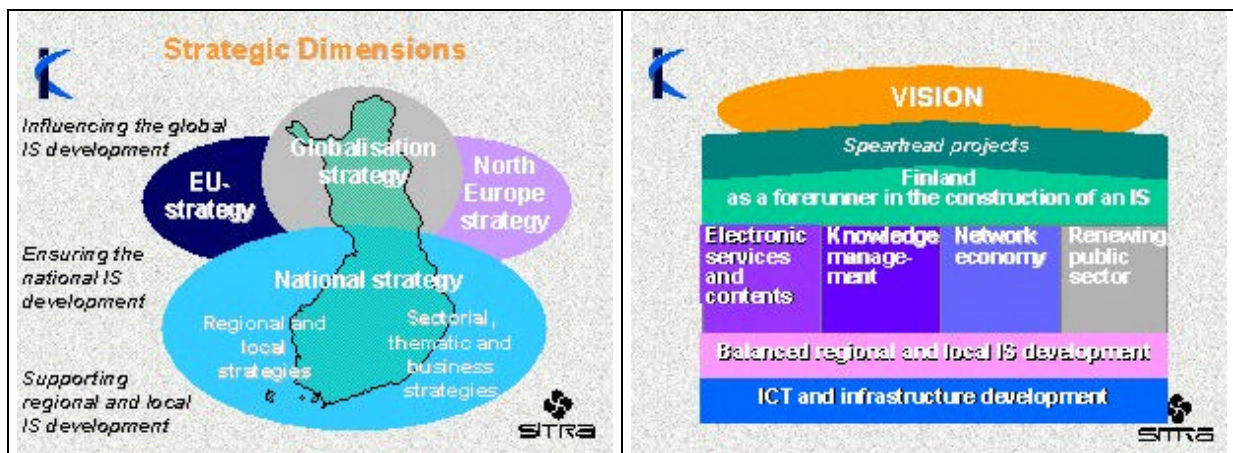
- **Focus on People:** The development of the Information Society should be clearly based upon people's needs.
- **Decentralisation:** The Information Society evolves in a decentralised manner, and it is neither possible nor necessary to co-ordinate it. However, some centralised measures are still needed.
- **Adaptation:** Due to the rapid pace of development, the strategy has to be constantly revised.
- **Co-operation:** Intensive co-operation between public and private sectors, individuals, businesses, industry and administrative fields, within Finland and in the international context is important.



The goals in the Finnish Information Society initiative are stated as follows:

- To ensure welfare, employment and income levels for citizens.
- To ensure equal opportunities in the acquisition of knowledge.
- To ensure conditions for entrepreneurship, quality of working life and to promote competitiveness.
- To provide opportunities for human interaction and co-operation.
- To strengthen democracy and provide opportunities for social influence.
- To improve security, individual data protection and the citizen's status as a consumer.

- To develop services, cultural provision and international interaction.
- To ensure Finland's attractiveness as a location for innovative enterprises.
- To promote equality between regions.
- To support sustainable development.



The strategy identifies a series of "Spearhead Projects" (top project areas), which are considered as a concrete way of promoting the stated objectives and principles of development. The purpose is to try to use concrete examples to promote Information Society development in Finland. SITRA itself will not finance such pilot projects (except to a limited extent during the planning stage) but will participate actively in their implementation and also help to identify sources of finance. In fact, the public sector must promote co-operation and make sufficient funding available for the Spearhead Projects in order to generate useful services and action models and to promote the creation of development networks.

Project's objectives and procedures	
<p><b>1. Cultural and information products and services.</b></p>	<ul style="list-style-type: none"> <li>• Digitalisation of major archive and library materials and an extensive and varied use of information materials maintained and produced by authorities (museums)</li> <li>• Development of the content creation business and enhancement of its international competitiveness</li> </ul> <p><b>Procedure:</b></p> <ul style="list-style-type: none"> <li>• The public and private sectors must co-operate to develop and disseminate new solutions developed for the description, refinement and commercialisation of information materials, for the management and integrated use of information, for the pricing of information materials, and for copyright management</li> </ul>
<p><b>2. Electronic transactions and service processes.</b></p>	<ul style="list-style-type: none"> <li>• To compile development projects relating to electronic transactions and trade</li> <li>• To promote synergy and coherent services</li> </ul> <p><b>Procedures:</b></p> <ul style="list-style-type: none"> <li>• To encourage co-operation between the public administration, research institutes, business enterprises and organisations in order to ascertain service needs from a client- centred viewpoint and to develop service production processes and safe and reliable methods and user interfaces for electronic transactions and trade</li> <li>• To adopt measures to remove obstacles to electronic trade and to develop the data protection and status of individual consumers</li> </ul>

<b>3. Personal navigation.</b>	<ul style="list-style-type: none"> <li>• To develop an entity of services for personal navigation, which supports all forms of mobility and which will be implemented gradually as the terminal hardware and data transfer technology develops</li> </ul> <p><b>Procedures:</b></p> <ul style="list-style-type: none"> <li>• Necessary services relating to traffic and transportation, such as maps, addresses, routes, prices and timetables and different services relating to transactions and trade must be implemented on open technical interfaces based on tenders</li> <li>• The transfer of location data must be developed with a view to emergency situations</li> </ul>
<b>4. Electronic learning environments</b>	<ul style="list-style-type: none"> <li>• To bring together ongoing projects</li> <li>• To develop and implement an ICT-based service and content entity which complements the traditional education system, supports independent, lifelong and special-needs learning and enables learners to study for a diploma</li> </ul> <p><b>Procedures:</b></p> <ul style="list-style-type: none"> <li>• To develop methods for the creation and publishing of electronic learning materials</li> <li>• At the initial stage, it is designed to help in the study of general upper secondary syllabuses</li> <li>• At a later stage, it must be expanded to university and polytechnic education and vocational training</li> </ul>
<b>5. Knowledge-intensive work.</b>	<ul style="list-style-type: none"> <li>• To develop alternative organisational models for knowledge-intensive work, knowledge requirements for individuals, working groups and networks and knowledge transfer methods</li> <li>• To ascertain the demands placed on the knowledge-intensive work environment by people's psycho-physiological welfare</li> </ul> <p><b>Procedures:</b></p> <ul style="list-style-type: none"> <li>• To develop, implement and test different action models and tools for the management of electronic interaction and the growing information flow and for the assessment of work loads with a view to preventing accidents due to burn-out and exhaustion</li> </ul>
<b>6. Business networking and teleworking.</b>	<ul style="list-style-type: none"> <li>• To collect, develop and test services, good practice and action models which promote entrepreneurship and networking between SMEs</li> <li>• To eliminate obstacles to networking</li> </ul> <p><b>Procedures:</b></p> <ul style="list-style-type: none"> <li>• To develop and implement electronic services for the international marketing of commercial products and services</li> <li>• To promote electronic transactions and interaction between business enterprises</li> <li>• To develop opportunities for teleworking and relevant recruitment systems</li> <li>• The supportive services needed must be developed in close collaboration with business enterprises. The aim of supportive services is to generate new business</li> </ul>

<b>7. The local information society.</b>	<ul style="list-style-type: none"> <li>• To collect and develop good practice in implementing regional and local information societies</li> <li>• To promote regional co-operation and interaction with a view to improving services and consolidating democracy</li> </ul> <p><b>Procedures:</b></p> <ul style="list-style-type: none"> <li>• To promote the pooling of resources with a view to developing generally applicable solutions and products for both international and national markets</li> <li>• To produce a handbook on best practice</li> <li>• To create a supportive service for local and regional decision-making</li> </ul>
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The strategy is available for downloading in Finnish and Swedish, French, German and English. (<http://www.sitra.fi/tietoyhteiskunta/>).

## **2.2 Information society in the new coalition programme (Lipponen II 1999)**

On 15 April 1999 the President of the Republic appointed a new Government headed by Prime Minister Paavo Lipponen. He has reaffirmed that *"the Government will seek to promote the development of a vigorous Information Society, Internet business and communication services"* and that *"Finland is seeking to play a pioneering role in implementing a humane and sustainable Information Society"*. The 1998 IS strategy and Spearhead projects will continue to lead the Government's work.

The Governmental Programme (<http://www.vn.fi/vn/english/index.htm>) includes several lines of action, with an emphasis on education:

- Revision of regulation of communication services and security in order to create a favourable legislative environment.
- Development of electronic services in a cultural and information context that is easy-to-use and secure for the citizen. Microcomputers, digital television and cellular phones should be at everyone's disposal.
- Emphasise co-operation among different sectors and administrative branches.
- Co-operation within the EU and with international organisations is of central importance in the creation and development of a working framework for an Information Society.
- Social exclusion of citizens and regions will be prevented by providing the services of the Information Society to all on an equal basis.
- ICT will be used to improve the cost efficiency and smooth operation of public services while at the same time ensuring the protection of data.
- Development of vocational education and training is an important task, and the implementation of actions aiming to improve its status: periods of on-the-job learning in co-operation with social partners, apprenticeship schemes, re-examination of the results obtained from teaching experiments in upper secondary education.
- Emphasis on the role of adult education is key to guaranteeing key skills and professional mobility.
- Develop proactive vocational education for adults with particular attention to the individual needs of the long-term unemployed.
- Legislation governing polytechnics (AMKs) will be reformed in order to raise the quality of education and training



New reports have been published by SITRA in the course of 1999, in particular:

- "Finland as an Information Society - Forwards on the Paths and Highways of Knowledge" (Risto Nevalainen - Suomi tietoyhteiskunnaksi - eespäin tiedon poluilla ja valtateillä),
- "Finnish Information Society Projects - An assessment of the Spearhead Project Situation" (Reijo Lilius - Suomalaiset tietoyhteiskuntaprojektit - Kärkihankekohtainen tilannearvio - Including a comparison with the ESIS inventory - <http://www.sitra.fi/tietoyhteiskunta/suomi/st2f.htm>).

After 3 years of its first mandate, a new National Committee for Information Society Affairs (or "Information Society Advisory Board") was appointed in July 1999 to drive forward the IS national strategy and to seek increased co-operation between the industry and trade sector and the administration. The Committee is made up of representatives of public administration, private sector companies (Nokia, TietoEnator, ICL), and citizens' organisations. The Minister for Transport and Communications, Mr. Olli-Pekka Heinonen, serves as the Chairman and Minister of Finance, Ms. Suvi-Anne Siimes and Minister of Education, Ms. Maija Rask serve as Vice-Chairmen of the Committee

### 2.3 Implementation of the Spearhead projects

In early 2000 the actual implementation of the Spearhead projects, prepared during 1999, began. Each Spearhead Project has its own host organisation, which is responsible for the preparation of the project in collaboration with the relevant authorities, companies, research institutes and other organisations.

There are at present 9 Spearhead Projects (Kärkiverkosto):

1. <b>Electronic Translation Services / e-government:</b> Ministry of the Interior. A three-year e-Government project - JUNA has started (see below and <a href="http://www.intermin.fi/suom/juna">http://www.intermin.fi/suom/juna</a> )
2. <b>Personal Navigation services:</b> Technical Research Centre of Finland VTT ( <a href="http://www.vtt.fi/tte/samba/project/navigointi/navigation_en.html">http://www.vtt.fi/tte/samba/project/navigointi/navigation_en.html</a> ). As a result of the planning project, a three-year NAVI programme has been proposed for the period 2000-2002 ( <a href="http://www.vtt.fi/virtual/navi/">http://www.vtt.fi/virtual/navi/</a> )
3. <b>Electronic Learning:</b> Ministry of Education
4. <b>Local Information Society:</b> The Finnish Association of Local and Regional Authorities - Kuntaliitto
5. <b>Content Industry:</b> Ministry of Education
6. <b>Knowledge Intensive Work:</b> Finnish Institute of Occupational Health ( <a href="http://www.occuphealth.fi/e/index.htm">http://www.occuphealth.fi/e/index.htm</a> )
7. <b>Teleworking:</b> University of Tampere - Information Society research Centre. <a href="http://www.info.uta.fi/winsoc/projekti/flexwork.html">http://www.info.uta.fi/winsoc/projekti/flexwork.html</a>
8. <b>Sustainable Information Society:</b> University of Oulu
9. <b>Business networking:</b> Kemi-Tornion Polytechnics



To support the Spearhead Projects and follow the development of the Information Society, SITRA has created a Spearhead network supported by a web site: "Spearhead network – Information Society for All": <http://karkiverkosto.sitra.fi>.

This Network is not only used by the Spearhead Projects but it also serves the Macro Pilot project dedicated to IS in social welfare and health care (see below). Moreover, the Modern Times project (Nyky aika - <http://nykyaika.lasipalatsi.fi/>), which is involved in the popularisation of the Information Society, is also a member and user of the Spearhead network.

**Focus on some Spearhead projects:**

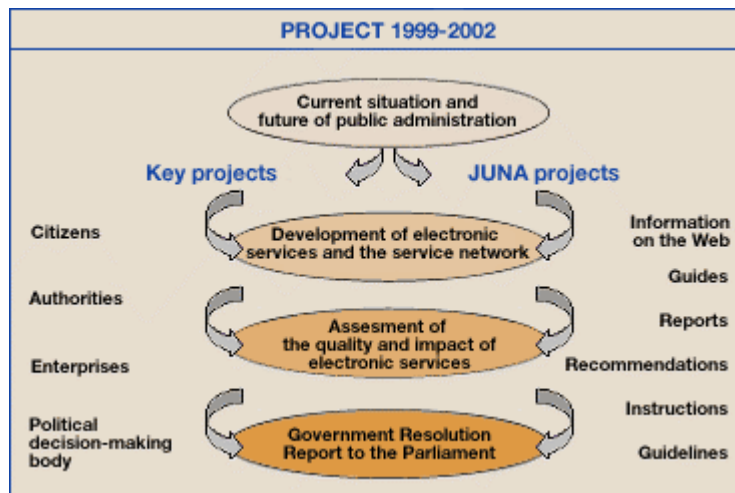


**The e-Government project - JUNA**

Led by the Ministry of Interior, the "Development Project for e-Government JUNA" is one of the Spearhead Projects. It aims to coordinate and support the development of e-government i.e.: electronic public services provided to citizens, enterprises, organisations and other administrative units (<http://www.intermin.fi/suom/juna/>).

It covers all sectors of public administration, that is the State and the local level as well as indirect State administration. Started in 1999, it will last until the end of 2002. The Ministry of the Interior has appointed an expert group representing the most important actors of public administration to monitor and promote the implementation of the objectives of the project.

A report has been produced on the current situation and future development. The first key projects and JUNA projects have been selected. In autumn 2000, the project will concentrate on improving services and the service network as well as on assessing the quality and impact of e-Government.



Source: Juna project



JULKISHALLINNON YHTEYSHAKEMISTO

Also, in September 2000, the Julha project will be launched: it is a public email and contact directory service in Finland

The Directory contains details of the organisations and their email users' name, title, address, telephone, fax and mobile phone numbers, Internet, email and X.400 addresses. Customers can access the service by using LDAP or via Internet (<http://www.julha.fi>).



### **Macro Pilot**

Macro Pilot began at the beginning of December 1998 and will last until the end of the year 2000 (<http://www.makropilotti.fi>).

Its goal is to develop a health care and social services system that is efficient and seamless for the consumer and crosses traditional organisational boundaries.

It also aims to improve Data Security and Privacy by adopting a new Social Insurance Card. Macro Pilot is divided into constituent projects as follows:

- Regional direction models
- Seamlessness
- Independent living
- Information and client services
- Technology: Regional data network
- Information security and protection
- Education and training
- Communications
- Evaluation
- Pilot projects

## **2.4 New sectoral IS strategies and action plans**

### **• An updated National Strategy for education for 2000-2004**



The Ministry of Education made public, on April 23, 1999, a new information strategy program for the period 2000-2004: "*National Strategy for Education, Training and Research in the Information Society for 2000-2004*" (<http://www.minedu.fi/julkaisut/information/englishU/index.html>). This new strategy results from the work of a working group set up by the Ministry December 1998.

The aim of the new program is to make sure that by the year 2004 Finland is one of the world's leading countries as a society based on know-how and interoperability. Success will be based on equal opportunities for all citizens to study and to develop their skills, as well as to have extensive access to information sources and training services.

The strategy consists of three parts:

- The first part evaluates the results of the previous plan (1995-1999) and envisages the potential situation in 2004.
- The second part focuses on the present day and its imperatives through visions of the next millennium.
- The third part introduces the action programme designed to achieve the objectives listed in the strategy.

In December 99, the Ministry of Education amended this new plan and included different project plans:

- Information Society skills for all
- Training for teaching staff.
- Training for the IT industry and digital information professionals.
- The virtual university.
- The virtual school.
- Learning environments on the information network and content production.

The Strategy stated that the main focus remains coherently on the spearhead projects outlined in the report "Quality of Life, Knowledge and Competitiveness", namely cultural and information products and services, electronic learning environments and, to some extent knowledge-intensive work and the local Information Society.

The majority of the programme will be implemented as a part of normal activities without separate funding, but the above project plans will require well-allocated funding to keep Finland progressing steadily. Funding will be collected as during the last strategy period in the form of an appropriation in the state budget for the Ministry of Education, albeit in a more centralised way and utilising opportunities offered by the Finnish National Fund for Research and Development (SITRA), the Technology Development Centre (TEKES), and the EU's Fifth Framework Programme and structural funds.

**Resources targeted at the action programme of the National Strategy for Education, Training And Research in the Information Society during 2000–2004, an annual approximation.**

The separate funding of new focal areas	Million EUR
Information society skills for all	7.5
Network as a learning environment	6.0
Accumulating digital information capital	3.3
Strengthening information society structures in education, training and research	9.0
<b>Total</b>	<b>25.8</b>
Assistance to research, education and training projects and services launched during the strategy period 1995–99 and assistance to public libraries	24.2
<b>Total average annual funding</b>	<b>50</b>

- In April 2000, the Minister of Labour presented "**Finland's national action plan for employment**" for 2000. The Information Society is included among the main areas of focus, as shown by Guideline 8 entitled "Reinforcing the Information Society".
- **IS strategy of the Ministry of Transport and Communications :**

At the end of January 2000, the Ministry of Transport and Communications presented its operating strategy and financial plan, which includes the pivotal aims of the transport and communications policy for 2001-2004 (<http://www.mintc.fi/www/sivut/english/tele/index.html>).

This Plan promotes the role of the Information Society in the fields of communications and transport and strengthens the role of the Ministry of Transport and Communications as the Ministry responsible for Information Society affairs.

The main objectives are:

- To ensure competition between the services provided in various networks by reforming the statutes of communication networks (neutrality in terms of technology i.e.: the same acts will apply to communications in fixed, and mobile networks and digital television networks).
- To increase users' trust in electronic services and the Internet by ensuring the protection of privacy and the security of information networks.
- To promote the business sector's opportunities to provide inexpensive and high quality Information Society services to all users on equal terms.
- To improve fluency and safety in traffic.

- To help SMEs to derive benefits from the opportunities offered by the Internet. The Ministry will extend the NetMate project for a further period of 3 years (2000-2002),  
(<http://www.p.k.verkkokaveri.net/vekaindex.htm>).

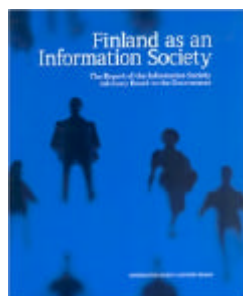


The new programme shall be composed of two parts, both concerning the use of Internet in business, the academic research programme and the SME programme. The purpose of the new programme is to promote the transfer of technological and business innovations made in the academic world to SMEs.

It is also the aim of the Ministry that Finland would be the first country in the world to provide third generation mobile communications services. In the spring of 1999, four telecommunications operators were granted licences to build third generation mobile networks in Finland. The operations are due to start by the beginning of 2002, at the latest.

## **2.5 The Development of Information Society in Finland: report of the Information Society Advisory Board (June 2000)**

In June 2000, the Information Society Advisory Board presented to the Government a report entitled "Finland as an Information Society" (Tietoyhteiskuntakehityksestä Suomessa. Tietoyhteiskunta-asiain neuvottelukunnan raportti Suomen hallitukselle).



This report is the first report of the Information Society Advisory Board, re-appointed in July 1999 and whose tasks include monitoring and predicting Information Society Development and reporting regularly to the Government.

The report aims to present an overall picture of IS development in Finland and formulate proposals for development and actions ([http://www.vn.fi/vm/kehittaminen/tietoyhteiskunnan\\_kehittaminen/raportti/raportti.htm](http://www.vn.fi/vm/kehittaminen/tietoyhteiskunnan_kehittaminen/raportti/raportti.htm)).

The Report reaffirms that the Information Society is a national goal. It comprises 7 main parts:

1. Use of new ICT and network connections in Finland (with statistics and international comparisons)
2. The effects of Information Society development on the economy
3. Social effects of Information Society development
4. Regulatory framework
5. Development programmes - measures appending
6. Conclusions
7. Proposals for development and measures

It concludes that the development of the Information Society has been very strong in Finland during the last ten years, thanks to solid background factors, efforts of the private sector and input from the public sphere. In particular, the National Committee considers that the national IS policy, measures and projects have been correct.

However, it considers that Finland is still making its way into the Information Society because the emergence of such a society means a new way of handling matters and requires a new kind of administrative culture and organisation. Also several factors may slow down the development of IS in Finland, in particular the discrepancy between the supply and demand of skilled manpower in the information industry, the difficulty at implementing networking and new divisions of work and the exclusion of some social groups and areas from the benefits of the Information Society.

The previous Finnish policy measures were a good starting point. However, the Advisory Board considers that the actual work still lies ahead in several areas.

More specifically the report identifies the strong points, problems and challenges of the Finnish Information Society:

Strengths	Problems and weaknesses	Challenges
<ul style="list-style-type: none"> <li>• Cooperation between the public and private sector</li> <li>• A strengthening of the information economy</li> <li>• High education level</li> <li>• Telecommunications networks and services</li> <li>• Information technology is extensively used in both the private and the public sectors</li> <li>• Comprehensive networks of libraries</li> <li>• Mobile communications</li> <li>• Location information covering the whole country</li> </ul>	<ul style="list-style-type: none"> <li>• Scarcity of resources</li> <li>• Application software industry and content production still under development</li> <li>• The dependency of economic growth on one branch</li> <li>• Recruitment problems of trained personnel in the information sector</li> <li>• The regional imbalance of the information sector</li> <li>• Low level of entrepreneurship</li> <li>• The position of SMEs in the international environment</li> </ul>	<ul style="list-style-type: none"> <li>➤ The flexibility and social dimension of the Information Society</li> <li>➤ The capacity of the educational system and the direction of education</li> <li>➤ Network commerce forms a challenge to enterprises and business life</li> <li>➤ Regional development</li> <li>➤ Information management and the change in the operating environment from the viewpoint of the employees</li> </ul>

In the future, the Advisory Board recommends measures *"to be enhanced, strengthened and adapted to new needs"*. These measures are also proposed in relation to the eEurope Initiative. In effect, the Advisory Board considers eEurope's goals to be important for Finland. Some of the eEurope measures have already been implemented or launched in Finland. But other measures are considered as central and Finland should commit herself to implementing these measures under national responsibility faster than the schedule proposed in the Action plan. Examples of these are improving the IT skills of teachers and the development of the electronic services of administrations.

The Report details a series of proposed measures to be implemented, which supplement the IS projects of the Governmental programme and which support the eEurope initiative.

The table below presents a summary of the proposed measures:

Priorities	Measures
<b>Strengthening education, know-how and research</b>	<ul style="list-style-type: none"> <li>• Training in ICT for the working force, research workers and teachers</li> <li>• Education and training in ICT to be included in the training programmes of all fields</li> <li>• "digital reading and writing skills" in comprehensive schools</li> <li>• Adult training in ICT</li> <li>• Attraction of foreign professional workers</li> <li>• Increase of public funding for R&amp;D</li> </ul>
<b>Communication infrastructure</b>	<ul style="list-style-type: none"> <li>• Increase in the liberalisation process and the development of alternative technologies</li> <li>• Availability and use of ICT services. Attention to be paid to regional distribution and bottlenecks of broadband data-transfer services</li> <li>• Licences policy</li> </ul>

<b>The operating and legislative environment</b>	<ul style="list-style-type: none"> <li>• eCommerce regulation: Self-regulation + public-sector regulation related to the protection of citizens rights (consumer protection, protection of personal data, data security and IPR issues) + EU and international regulation, in particular as regards to the trust of consumers</li> </ul>
<b>Prevention of alienation in the Information Society</b>	<p>There are differences in the use of ICT services between population groups and regions. Different measures should be adopted to prevent the development of alienation:</p> <ul style="list-style-type: none"> <li>• Strengthening of the possibilities of public libraries to offer citizens network connection in library facilities</li> <li>• Development of sufficient hardware, software and network connections in educational institutions</li> <li>• R&amp;D work directed towards disabled and other special groups</li> <li>• Monitoring of the development of regional disparities. Emphasis on the use of structural funds for the promotion of IS in the regions</li> <li>• Counselling and support measures for SMEs</li> </ul>
<b>The services of the public sector and the public sector as a customer</b>	<ul style="list-style-type: none"> <li>• to ascertain the expectations of the citizens and business life regarding the role of public administration in the development of IS</li> <li>• Improve the availability of public information, safeguard access to services and improve the efficiency of administration</li> <li>• Use ICT in the democratic process</li> <li>• Develop e-commerce in the administration (public procurement)</li> <li>• The administration as a consumer of ICT solutions and services should not develop its own solutions but buy them on the open markets</li> <li>• Stronger input of the State administration towards ensuring information and communication security and prevention of criminality through data networks</li> </ul>
<b>Other proposals</b>	<ul style="list-style-type: none"> <li>• The public sector should utilise software with an open source code more than at present.</li> <li>• Development of telematics in transport to improve efficiency, quality of services, security and environment</li> <li>• Increase research on the storage of digital material and development of digital archives</li> </ul>





# France



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## Introduction

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France's decision to draw up a strategy for the development of the Information Society came late in comparison to the activities of several EU Member States and the EU itself. Despite several parliamentary and expert reports on the ICT revolution in the 1990s' and the call for "Information Highway projects" launched in 1994, France has fallen behind as stated by the Prime Minister Lionel Jospin: *"there were many obstacles. The importance of these technologies was not fully understood and there was a lack of commitment on the part of the Government"*. Therefore, it was only in August 1997 that the Prime Minister made France's entry into the Information and Communication Society a priority for government action.

But, since then, France has rapidly caught up. The last 3 years have been characterised by a proactive policy on the part of the French Government and much progress has been made. In January 1998, the Government published the governmental action programme promoting the development of the Information Society in France (PAGSI). An inter-ministerial committee and a major budgetary effort accompanied these actions. Finally, the plan sets out to assess, on an annual basis, the progress of the Action Programme. Two appraisals have been conducted since, the first in 1999 and the second in 2000.

At the beginning of the year 2000 the appraisal showed a satisfying level of achievement of the Action programme. Most of the 218 measures of PAGSI have already been implemented. People, businesses and administrations are rapidly adopting ICT tools and the Internet. 10% of French people now use Internet, against 2% in 1998. Concerning companies, a recent survey from the Ministry of Industry shows that 70% of businesses are connected to the Internet, against 28% in 1997 and 39% have now developed a web site. There are 1.3 million hosts servers (i.e. 22.3 per 1000 inhabitants) as compared with 293,000 at the beginning of 1997. The cost of access to the Internet in France is among the lowest in the European Union. Today, the ICT sector represents 5% of GDP, which represents more than tourism. The contribution of ICT to global growth since 1997 is estimated at 20%.

However, there is still progress to be made. According to the 2000 Information Society Index (IDC/World Times Survey), France is ranked in 21st place in the world in terms of Information Society development and in 10<sup>th</sup> place in European Union. Moreover, in spite of the decrease in the cost of equipment and rapid growth in the amount of equipment installed, sociological and geographic inequality with regard to access to information networks is still prevalent. There is a "digital divide". As announced during the last inter-ministerial committee in July 2000, the Government has decided to continue its action and launch major initiatives and legislative work in the coming years. In charge the European presidency from July 2000 to January 2001, the French government is also committed to play a key role in the implementation of eEurope.

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# 1. Governmental action programme for entry of France into the information society

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## 1.1 French activities prior to 1997

Prior to 1997, France launched several Information Society initiatives, called at that time "Information Highways and Services". The involvement of France in that field started in 1993 and 1994 at the initiative of Edouard Balladur, former Prime Minister, following the Bangemann report and the Al Gore NII initiative.

Three major reports were issued:

- In May 1993, the Ministry of Enterprises launched a Mission on teleworking and teleservices. Several months after, the Thierry Breton report on teleservices was published.
- In 1994, the Government commissioned Gérard Théry, former Director General of Telecommunications and main initiator of the "Minitel for all", to prepare a report aimed at identifying challenges, proposing a framework and measures, accompanied with modalities and a calendar. In September 1994, Gérard Théry presented his report on the French Information Highways services. This document proposed an ambitious plan for developing fibre optics, and advocated state support for developing services. Two key success factors were identified:
  - the need to base the development of Information Highways and services on the market itself and on the investment capacity of all of the active players, while still allowing the State to be a driving force in stimulating developments through its public interest activities (health care, education);
  - the importance of giving at least as much support to the development of services and applications as to the infrastructure.
- A third report was presented by the Commissariat Général au Plan (<http://www.plan.gouv.fr> - Miléo Report) concerning mainly public regulation of ICT services and the role of the State.

In October 1994, the first Interministerial Committee on Information Highways took place (<http://www.telecom.gouv.fr/francais/comdis/cp271094.htm>). One month later, the Ministry of Trade, Industry and Posts and Telecommunications launched a call for proposals, which resulted in 244 Information Highway experiments (selected from 635 proposals). The objectives were to promote new services, new applications and content programmes. A further objective was to implement broadband network platforms with were capable of supporting new services and applications (<http://www.telecom.gouv.fr/francais/comdis/appeloff.htm>).

Most of the selected projects receive an official label from the government, allowing to help the promoters in finding partners and funding. Some of the projects receive a direct funding for the Ministry of Post and Telecommunications in the form of R&D funds (around 49 million EUR in 1995 and 1996). These 244 projects were dedicated to different themes: development of infrastructure (platform), education and teleteaching, teleservices, culture, marketplace (mainly EDI applications), audiovisual, edition, health, administration, research, transports and tourism (<http://www.telecom.gouv.fr/francais/activ/techno/autox170.htm> and <http://www.telecom.gouv.fr/francais/activ/techno/autox74.htm>).

In 1995 and 1996, a law allowing experiments in the field of information and communication technologies was prepared and adopted (<http://www.telecom.gouv.fr/francais/activ/techno/projet.htm>).

Other calls for projects were issued during these years:

- DATAR, the delegation for regional planning launched two calls for proposals in the field of teleworking in collaboration with France Télécom. The aim was the creation of teleservices-based enterprises and the introduction of new practices in firms, local institutions and administration (<http://www.datar.gouv.fr>).
- In February 96, the Ministry of Post, Telecommunications and Space, in collaboration with ANVAR (Agence Nationale pour la Valorisation de la Recherche, depending from the Ministry of Industry and responsible for exploitation of research - <http://www.anvar.fr>) launched a call for the development of multimedia applications and services by SMEs. On a total of 616 proposals, 260 have been accepted for a total financial amount of 133.5 million EUR for which 15.2 million EUR will be given by ANVAR as R&D funds.

Several other initiatives were taken, such as:

- Creation of an "Information Highways Observatory" in 1996.
- Launch of the Serusclat Senatorial Mission on IS in October 1996 (Internet Forum).
- Laffitte Senatorial Mission on "Entry of France into the Information Society" (October 1996 - Report released in February 1997 - <http://www.senat.fr>)
- Martin-Lalande Report: The Internet, a real challenge for France. (started in November 1996, released in April 1997 - <http://www.assemblee-nat.fr>).

## **1.2 The Prime Minister' Speech at Hourtin (August 1997)**

Despite this, France delayed embarking on an Information Society national strategy. It was only during the summer communication campus at Hourtin on 25th August 1997 that the Prime Minister Lionel Jospin announced that the Government had decided to put in place an ambitious plan of action whose co-ordination would be ensured by an inter-ministerial committee to be set up.

The Prime Minister said that the Government would present the country with a set of proposals, which would make it possible to select priorities, implement concrete measures and provide a reference scheme for administrations and other social actors who have been calling for purposeful, clear and lasting intervention on the part of the State. Beyond its "technical dimension", he declared, *"the emergence of an information society represents a political challenge and constitutes, in this respect, a primary preoccupation for the Government"*.

(<http://www.premier-ministre.gouv.fr/GB/INFO/HOURT.HTM>)

## **1.3 Governmental action programme for entry of France into the information society (January 1998)**

After the first inter-ministerial committee meeting for the Information Society on January 16th 1998, the Government released its Action Plan to *"Prepare the entry of France in the Information Society"*(PAGSI) on January 16th, 1998 ("Programme d'action gouvernemental pour préparer l'entrée de la France dans la Société de l'Information").


This Programme marks the State's commitment. Its role is threefold:

- Acting as a catalyst, it must make companies and citizens aware of the stakes of the information society.
- As a regulator, it must ensure respect of the rules of these networks.
- As a major player, it can modernise its operational methods and the relationship between the public service and the public.

The Programme stresses sector by sector, the key issues and priorities, accompanied by concrete proposals.

Mixing medium-term strategic goals and operational measures, it comprises 6 priority areas that break down into specific measures:

Priority areas	Measures
<p><b>1. EDUCATION</b></p> <p>"Education: new information and communications technology tools in the education sector"</p>	<p><b>1. A global approach to education</b></p> <ul style="list-style-type: none"> <li>• Integrating information and communications technology tools into education</li> <li>• Giving priority to teacher training</li> </ul> <p><b>2. Equipping teaching establishments and bringing them on-line</b></p> <ul style="list-style-type: none"> <li>• Extending equipment levels and access to the Internet</li> <li>• Deciding locally on equipment options</li> <li>• Ensuring balanced and coherent development</li> <li>• Developing an active partnership with local authorities and industry</li> </ul> <p><b>3. The production and distribution of teaching and scientific material for education</b></p> <ul style="list-style-type: none"> <li>• Supporting the French educational multimedia industry</li> <li>• Encouraging production and promoting the distribution of resources</li> </ul>
<p><b>2. CULTURE</b></p> <p>"Culture: an ambitious cultural policy for new networks"</p>	<p><b>1. Supporting the creation of multimedia material and services</b></p> <ul style="list-style-type: none"> <li>• Directing financial aid towards information technology</li> <li>• Developing information technology in the public audio-visual industry</li> <li>• Continuing action at EU level to harmonise taxation levels for cultural products</li> <li>• Protecting copyright</li> </ul> <p><b>2. Digitising France's cultural heritage and distributing cultural data on the Internet</b></p> <p><b>3. Mastering cultural information technology tools</b></p> <ul style="list-style-type: none"> <li>• Creating "Espaces Culture Multimédia" (Multimedia Cultural Centres) for public education</li> <li>• Facilitating the cultural appropriation of information technology, using public libraries</li> </ul> <p><b>4. Reinforcing the international presence of France and the French language</b></p> <ul style="list-style-type: none"> <li>• Promoting access to French resources and encouraging their internationalisation</li> <li>• Using information and communications technology tools for the benefit of integrated development and the French language</li> </ul>
<p><b>3. PUBLIC SERVICES</b></p> <p>"IT as a tool for modernising public services"</p>	<p><b>1. Facilitating the general public's access to government departments using the Internet</b></p> <ul style="list-style-type: none"> <li>• Extending digitisation and on-line availability of public information</li> <li>• Moving the State's Minitel services onto the Internet</li> <li>• Distributing essential public information free-of-charge</li> <li>• Making the government accessible by e-mail</li> <li>• Dematerialising administrative procedures and developing automatic data procedures</li> <li>• Equipping public services with Internet access points</li> <li>• Modernising how the State operates</li> <li>• Bringing government on-line</li> <li>• Training staff</li> </ul>

<p><b>4. COMPANIES</b></p> <p>"IT, an essential tool for companies"</p>	<p><b>1. The computerisation of companies is of essential importance</b></p> <ul style="list-style-type: none"> <li>Increasing the use of information technology by SMEs</li> <li>Making companies aware of the challenge of changing computers to the year 2000 and the Euro</li> </ul> <p><b>2. Promoting the development of electronic commerce</b></p> <p><b>3. Information, strategic importance and issues</b></p>
<p><b>5. INDUSTRIAL AND TECHNOLOGICAL INNOVATION</b></p> <p><i>"Innovation and Research: meeting the challenges of industrial and technological innovation"</i></p> 	<p><b>1. Encouraging innovation</b></p> <ul style="list-style-type: none"> <li>Promoting the dissemination of innovation</li> <li>Promoting the creation and development of innovative companies</li> <li>Promoting the emergence of new capital</li> </ul> <p><b>2. A proactive policy with respect to research</b></p> <ul style="list-style-type: none"> <li>Rationalising public financing for company R&amp;D</li> <li>The "réseau national de recherche en télécommunications" (RNRT - national telecommunications research system - <a href="http://www.telecom.gouv.fr/rnrt/">http://www.telecom.gouv.fr/rnrt/</a>)</li> </ul> <p><b>3. Confirming France's commitment to the development of the Internet</b></p> <ul style="list-style-type: none"> <li>Telecommunications company actions to facilitate access to the Internet</li> <li>Developing the infrastructures on which the Internet relies</li> <li>Efficient technical regulation for the Internet</li> </ul> <p><b>4. Enhancing France's progress with respect to new networks and new information and communications technology</b></p>
<p><b>6. REGULATORY FRAMEWORK</b></p> <p>"Regulation: encouraging the emergence of effective regulation and a protective framework for new information networks."</p>	<p><b>1. Regulation adapted to new information networks</b></p> <p><b>2. An efficient and protective framework for cryptology</b></p> <p><b>3. Guaranteeing the security of national information systems and networks</b></p> <p><b>4. Adapting initiatives for the prevention and repression of new threats</b></p>

Before the summer of 1998, each ministry had to prepare a sector-by-sector breakdown of the government's action programme: the Ministerial Action Programmes for the Information Society - PAMSI (Programmes d'action ministériels pour la Société de l'Information").

Instead of creating a new body in charge of ICT, it was decided to involve all public administrations at the national and local level. An inter-ministerial committee for the Information Society was, therefore, set up ("Comité interministériel pour la Société de l'Information" - CISI). Chaired by the Prime Minister and supported by his technical advisor, Jean-Noël Tronc, its tasks are to follow-up the implementation of PAGSI as well as to co-ordinate the Ministerial IS Action Programmes. An IS correspondent has been nominated in each Ministry and in anticipation of international discussions in the future, co-ordination of the various government departments will be improved to ensure a strong French presence in all official or informal negotiating bodies on the Information Society.

Later on in 1998, new structures were created:

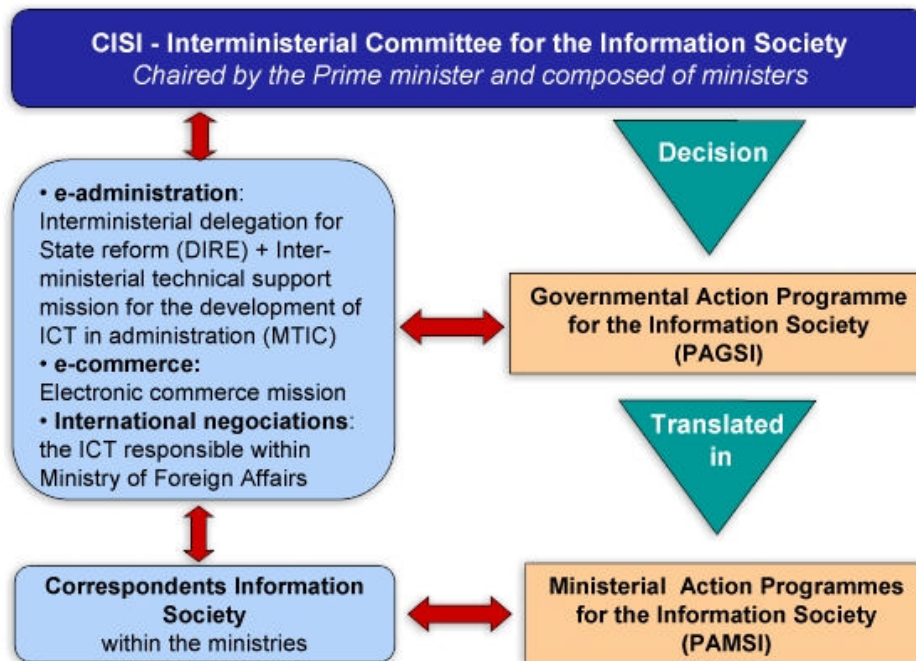


- An **inter-ministerial technical support mission for the development of ICT in Government administration (MTIC)** was created in August 1998 (<http://www.mtic.pm.gouv.fr>).

Depending from the Prime Minister, its role is to reinforce inter-ministerial coordination, to accompany administrations for the design and development of ICT projects, to provide guidelines and common standards, to identify needs in terms of hardware and software, to conduct assessment work, etc. It is closely coordinated with the interministerial delegation for State reform (<http://www.fonction-publique.gouv.fr/lareform/ntic/accueil.htm>).

- Also, within the inter-ministerial delegation for State reform (DIRE) a Mission "for the use of new information and communications technologies by the Civil Service" was established.
- The information and communication legal and technical department (SJTI) was made responsible for the operational administration of PAGSI, promoting the circulation of information between "Information Society" correspondents and drawing up PAGSI progress reports.

The organisational scheme is represented in the following graph:



Alongside these bodies, the Ministry of Economy, Finance and Industry (<http://www.finances.gouv.fr>) plays a key role in this process as the main financing department of the PAGSI and through different Ministries, in particular the Ministry of Industry, Information Technologies, Energy, Telecommunications and Posts (<http://www.industrie.gouv.fr> and <http://www.telecom.gouv.fr>). It is also responsible for e-commerce and Internet issues (<http://www.finances.gouv.fr/cybercommerce/>).



Other public bodies are key actors in the Information Society Development. One can cite the following organisations:

- Commission Nationale de l'Informatique et des Libertés, the French independent authority in charge of protecting privacy in the area of personal data processing, in particular on the Internet (CNIL - <http://www.cnil.fr/>)
- Autorité de régulation des télécommunications, the French independent Telecommunication regulator (ART - <http://www.art-telecom.fr>)
- The Conseil supérieur de l'audiovisuel, the French independent Broadcasting Authority (CSA - [http://www.csa.fr/html/english\\_conseil.htm](http://www.csa.fr/html/english_conseil.htm))
- The Agence pour la diffusion de l'information technologique - agency responsible for disseminating technological information (ADIT - <http://www.adit.fr>).



An impressive web site has been created to provide information on the progress of the Information Society programme in France:

<http://www.internet.gouv.fr/>.

The Web sites of the Ministry of Industry, Information Technologies, Energy, Telecommunications and Posts also provides useful information on information society issues:

<http://www.industry.gouv.fr>

<http://www.telecom.gouv.fr/francais.htm>

The action programme is available in English, German, French and Spanish at <http://www.internet.gouv.fr> (see "textes de référence" section).

PAGSI announced that several electronic Forums would be launched as well as a public debate focusing on certain major areas:

- Electronic commerce, on the basis of the report written by Mr. Francis Lorentz. A discussion forum will be used to draw up the first measures for the development of electronic commerce in France.
- Education : every teaching establishment has to organise a debate at staff meetings or board of governors meetings
- Internet: AFNIC (Association française pour le nommage Internet en coopération - French association which regulates Internet address naming - <http://www.nic.fr>) will have to organise extensive consultation with all Internet actors on the basic principles and tools that need to be set up to effectively manage the naming charter for the ".fr" sector.
- Cryptology

## 2. The implementation of the French IS programme

### 2.1 PAGSI Implementation in 1998-1999 and 1999 Appraisal

On 19<sup>th</sup> January 1999, during the second inter-ministerial committee for the Information Society (CISI), a year after the implementation of PAGSI, Lionel Jospin reviewed a year of government action. He also announced important new measures that would aim to continue the advance of the Information Society.

70% of the objectives set in 1998 had been achieved (153 out of 218), most of the others were well underway and only very few were in the position of not being met at all (approximately ten out of 218).

Ministries published their ministerial plans (available on their web site):

<b>Prime Minister</b>	<a href="http://www.internet.gouv.fr/francais/textesref/cisi190199/pamsipm.htm">www.internet.gouv.fr/francais/textesref/cisi190199/pamsipm.htm</a>
<b>Ministry of Economy, Finance and Industry</b>	<a href="http://www.finances.gouv.fr/innovation/choix_ministere/mefi0199.htm">www.finances.gouv.fr/innovation/choix_ministere/mefi0199.htm</a> <a href="http://www.industry.gouv.fr">www.industry.gouv.fr</a> (industry) <a href="http://www.telecom.gouv.fr/francais.htm">www.telecom.gouv.fr/francais.htm</a> (telecommunications) <a href="http://www.commerce-exterieur.gouv.fr">www.commerce-exterieur.gouv.fr</a> (external trade) <a href="http://www.pme-commerce-artisanat.gouv.fr/index.htm">www.pme-commerce-artisanat.gouv.fr/index.htm</a> (SMEs, trade and crafts)
<b>Ministry of employment and solidarity</b>	<a href="http://www.travail.gouv.fr/actualites/dossiers/programme_information.html">www.travail.gouv.fr/actualites/dossiers/programme_information.html</a>
<b>Ministry of culture</b>	<a href="http://www.culture.fr">www.culture.fr</a>
<b>Ministry of Justice</b>	<a href="http://www.justice.gouv.fr/publicat/pamsi1.htm">www.justice.gouv.fr/publicat/pamsi1.htm</a>
<b>Ministry of Internal Affairs and overseas territories</b>	<a href="http://www.interieur.gouv.fr/">www.interieur.gouv.fr/</a> <a href="http://www.outre-mer.gouv.fr/actu/plans/index.htm">www.outre-mer.gouv.fr/actu/plans/index.htm</a>
<b>Ministry of education, research and technology</b>	<a href="http://www.education.gouv.fr/pagsi/defaultb.htm">www.education.gouv.fr/pagsi/defaultb.htm</a> .
<b>Ministry of Foreign Affairs</b>	<a href="http://www.diplomatie.fr/actual/NTIC.html">www.diplomatie.fr/actual/NTIC.html</a>
<b>Ministry of defence</b>	<a href="http://www.defense.gouv.fr/actualites/pagsi/index.html">www.defense.gouv.fr/actualites/pagsi/index.html</a>
<b>Ministry of equipment, transport and Housing</b>	<a href="http://www.equipement.gouv.fr/pagsi/sommaire.htm">www.equipement.gouv.fr/pagsi/sommaire.htm</a>
<b>State Secretary For Tourism</b>	<a href="http://www.tourisme.gouv.fr/sinform/PAMSI.htm">www.tourisme.gouv.fr/sinform/PAMSI.htm</a>
<b>Ministry of agriculture and fisheries</b>	<a href="http://www.agriculture.gouv.fr/actu/even/Pamsi2/Pamsi/LeProgrammed.html">www.agriculture.gouv.fr/actu/even/Pamsi2/Pamsi/LeProgrammed.html</a>
<b>Ministry of public administration, modernisation and decentralisation</b>	<a href="http://www.fonction-publique.gouv.fr/lactualite/lesgrandsdossiers/pamsi-fp-def.htm">www.fonction-publique.gouv.fr/lactualite/lesgrandsdossiers/pamsi-fp-def.htm</a> - See also "ICT development in administration" - eGovernment progress monitoring: <a href="http://www.fonction-publique.gouv.fr/lareform/ntic/accueil.htm">www.fonction-publique.gouv.fr/lareform/ntic/accueil.htm</a>

- **Education:** The task of equipping and connecting schools made excellent progress (almost 90% of secondary schools were connected to the Internet), mainly due to a support fund of 500 million FF (76 million EUR). The adoption of an emergency plan for University teacher training institutes (IUFM) took place.

The Ministry of education has implemented three educational web sites:



EDUCNET:  
<http://www.educnet.education.fr>  
 The Site on ICT in education



EDUCASOURCE:  
<http://www.educasource.education.fr>  
 Electronic resources for education



EDUCLIC:  
<http://educlic.education.fr/>  
 Portal site for education professionals

- **Culture:** Support mechanisms were set up for projects relating to the French language and multimedia publishing. 98 "Multimedia Culture Centres" were set up as well as a Bank for programmes and services (<http://www.culture.fr/>).
- **Government Departments** set up or developed numerous sites which make a large amount of public data (legal texts and reports) and 300 forms covering 50% of the volume of administrative procedures available online.



Legifrance: [www.legifrance.gouv.fr](http://www.legifrance.gouv.fr)



Admifrance: [www.admifrance.gouv.fr](http://www.admifrance.gouv.fr)

La Documentation française: [www.ladocfrancaise.gouv.fr](http://www.ladocfrancaise.gouv.fr)

Adminet: [www.adminet.fr](http://www.adminet.fr)



A guide of public services present on the Internet is available on the Admifrance site:



Remote-access services were started (for tax payments). The unification of computer standards around those of the Internet made good progress. The Health Care network was deployed to the whole country by the end of 1998. The implementation of Intranets and e-mail continued.

- **Electronic commerce:** The State implemented numerous initiatives aiming to make companies aware of the stakes of the information society, in particular electronic commerce, the Euro and the year 2000.

In May 1998, the Ministry of Economy, Finances and Industry announced ten measures to favour the development of exchanges on the Internet in France. The main important were the following:

- The implementation of a security policy.
- The support of launch of interoperable electronic payment initiatives in The EU.
- The creation with the National Institute of Industrial Propriety - INPI - of a pilot trial of commercialisation and dissemination of public data on the Internet (<http://www.inpi.fr>).
- The implementation of an awareness and training campaign of SMEs about use of the Internet and electronic commerce applications.
- The creation of system of concertation about electronic commerce.
- The Minister of Economy also announced the possibility to settle tax via the Internet, the digitalisation of 100 Ministry of Industry's forms, and the use of smart cards for paying administrative services on the web.

Various aid and certification procedures were established to encourage companies to use the Internet for exports and to have SMEs modernise their information systems.

The report of Mr Francis Lorentz was delivered and a special Mission for e-commerce has been established by the Minister of Economy, Finance and Industry ([http://www.finances.gouv.fr/commerce\\_electronique/](http://www.finances.gouv.fr/commerce_electronique/)).



The Mission launched the competition "Electrophées" to award companies having developed e-commerce projects.

It also publishes the e-commerce scoreboard (tableaux de bord du commerce électronique).



- **Innovation and Research:** Industrial and technological research was strongly encouraged by developing risk-capital finance through the creation of a fund that reached 137 million EUR, and by extending fiscal measures in the finance laws for 1999 to encourage new entrepreneurs in the new technology sector. Regarding research, an "Information Society" programme was granted 45.7 million EUR, and the National Network for Telecommunications Research (Réseau national de recherche en télécommunications - RNRT) will receive an annual grant of 40 million EUR. The telecommunications infrastructure for research and teaching (RENATER network - <http://www.renater.fr>) was consolidated.



The "Tableaux de Bord de l'Innovation" (Innovation Scoreboard) have been implemented by the Ministry of Industry.

[http://www.industrie.gouv.fr/observat/innov/so\\_tbi.htm](http://www.industrie.gouv.fr/observat/innov/so_tbi.htm)

- **Regulation:** The reports of Mr. Guy Braibant (March 1998) concerning the use of personal data and of the Council of State (September 1998) on related legal issues were presented to the Prime Minister. It is worth noting that the Government has begun liberalising the use of encryption methods.

Moreover, Governmental measures have promoted awareness, impetus and dialogue with all the social and economic players involved. There has been a wide-ranging consultation process, parliamentary and expert reports (ICT and the French Language, Local and regional authorities and the Information Society, the legal framework for the Internet, ICT and Innovation, ICT and business intelligence, Internet and SMEs etc.), working groups (e.g. The report of the Commissariat Général au Plan on ICT and State modernisation - [www.plan.gouv.fr](http://www.plan.gouv.fr)), forums and round-tables and electronic debates. The Government has also supported the "Fête de l'Internet" (Internet Festival created in France for the first time and extended in Europe). All these activities and reports are available on the PAGSI web site (<http://www.internet.gouv.fr>) and several reports are available in English.

The Government was satisfied with this appraisal. However, it considered that despite a decrease in equipment costs and rapid growth in the amount of equipment installed, sociological and geographic inequality in access to information networks remains a reality. In this respect, the Government confirmed that it would focus on the emergence of an information society that embraces solidarity. This concern will necessitate a proactive policy that will integrate the work of regional and local authorities and the decrease in tariffs for access to the Internet, supported by government departments.

Therefore, the Prime Minister has confirmed the six priorities of PAGSI for 1999-2000 and adopted a package of new measures:

- 1999-2000: Towards electronic administration - Reinforce public access via information technology to government departments (e-government)
- Build a legislative framework to protect exchanges and privacy (freedom for use of encryption methods, protection of personal data, documents and electronic signature).
- Develop the culture, the content and the presence of France on the Internet
- Implement an Information Society embracing solidarity: access for all, social issues, regional and local information society (<http://sig.ws.oleane.net/english/textesref/cisigb/fiche4gb.htm>).



In 1999, the French Government published a book entitled "France into the Information Society" which describes recent development and challenges ("La France dans la Société de l'Information").

(French and English version at <http://www.internet.gouv.fr/francais/texteref/fsi99/accueil.htm>).

## 2.2 The Third Inter-ministerial Committee for Information Society (July 2000)

On July 10, 2000 the Prime Minister Lionel Jospin chaired the third inter-ministerial committee meeting for the Information Society (CISI) held in Matignon.

### • Appraisal of the situation

A strong commitment from ministries and a budget of more than 760 million EUR have been dedicated to the implementation of PAGSI over the last 3 years (<http://www.premier-ministre.gouv.fr/DOSSIERS/CISI2000/4.pdf>).

The results of governmental actions were considered as being positive in 5 main areas:

- **Education:** 100% of "lycées" and 65% of "collèges" are equipped for and connected to the Internet and there has been an increase of the number of connected primary schools to the Internet (50%). Today, the rate of school connections is among the highest in Europe, thanks to the efforts of local authorities and partnerships with established companies. For example, in February 2000 the Ministry of National Education and France Telecom established a partnership to develop the Internet in schools. The first application of this agreement resulted in a programme of training for teachers on new technologies called "Internet Ambassadors from France Telecom in schools". This is a new stage of the partnership, which has, since 1998, already connected 27,000 school establishments to the Internet (<http://www.education.gouv.fr/discours/2000/internet.htm>).

- **eGovernment** to be made a reality, as it is shown in the Lassere Report prepared for the Commissariat Général au Plan: administration has now the same equipment rate as the private sector. 78% of State Services are connected to the Internet and 37% of workstations have e-mail (2% in 1997). There is now a strong presence of Ministries on the Internet. According to a recent study by Andersen Consulting, France is ranked in 5<sup>th</sup> place as regards the use of the Internet by the administration (20 governments in the world have been analysed). A governmental Intranet - ADER - began in the second half of 1999. The first services include a secure messaging system, a common directory and shared document bases. At a decentralised level of the State administration, the regional information networks (SIT) are being extended.
- **The New Economy:** the encouragement of innovation thanks to public risk-capital funds and tax incentives A fund of 137 million EUR was launched in 1998 and a new fund of 153 million EUR was launched in 2000. This had led to an increase in the number of start-up companies. In 1999, more than new company out of 20 was within the ITC sector. The ICT sector should generate between 250,000 and 600,000 jobs in the next three years.

Several calls for projects have been launched by the Ministries and other public bodies such as ANVAR (<http://www.anvar.fr>) or RNRT, for example:

- ICTs and innovation in services
- "Exporters on the Web" call for projects
- OPPIDUM : "Offre de Procédés et de Produits De sécurisation pour la Mise en oeuvre des autoroutes de l'information"
- Collective use of Internet by SMEs
- PRIAMM - Programme pour la recherche et l'innovation dans l'audiovisuel et le multimédia
- Information Society Programme

A complete list of closed and open calls is available on the site of the Ministry of Industry (<http://www.industry.gouv.fr>)

- **Internet usages:** the obstacles to the development of the Internet are being removed. Today, the Internet is used daily by companies and citizens as a tool for knowledge, innovation and business. 10% of French people use the Internet and there are 500,000 personal sites, which is the highest rate in Europe. More than 60% of SMEs are connected to Internet.
- **The adaptation of the legal framework** as well as the implementation of new means of action. An "electronic signature bill" was passed in March 2000 and one on data protection is being prepared. The Decree on the unbundling of the local loop will enter into force in January 2001. The law on the Information society is on the way to be adopted (see below). In terms of new means of action, the Official Journal of May 16, 2000 published a decree on the "creation of a central office to combat ICT-based crime". Created by the ministry for Internal Affairs, this office is charged with managing and co-ordinating, at the national level, the implementation of the fight against ICT based crime. The Government has also created an Internet Alert and Emergency Centre on the Internet (CERT/A - Computer emergency response team/Administration).

## 2.3 Build an Information Society for all: the future priorities of the French IS Programme

To "build an information society for all" was the major ambition and this remains a challenge. The "digital divide" remains. Therefore, in order to reduce social disparities government policy will focus on:

- Education
- Internet access for all
- New jobs and ICT training
- ICT and the third sector
- The Unbundling of the Local Loop
- International co-operation (North/South)
- New measures will be proposed by the French Government for e-Europe
- Research and development for new ICT applications

Moreover, the Government will create a Strategic Internet Committee for IT in the autumn of 2000. The objectives are to encourage dialogue between public and private research and companies. This Committee will report directly to the Prime Minister. It will be composed of researchers, experts and industrialists. It will serve as an advisory body on France's strategic priorities in IT and R&D. Besides, the Government will support the New Generation Internet Foundation (FING).

Some conclusions of the meeting are summarised in the following table. The full report and annexes are available in French and summaries are available in English, German and Spanish on the PAGSI web site:

**613 million EUR for the next three years:  
460 million EUR to close the "digital divide" ("fossé numérique")  
153 million EUR for Research & Development**

Closing the "digital divide"	
Objectives	Actions
<b>1. Access to ICT</b>	<ul style="list-style-type: none"> <li>• Over 7,000 public spaces allowing access to the Internet will open over the next 3 years (local employment agencies, public libraries, youth information centres, ...)</li> <li>• Among them, 2,500 "digital public centres" will offer general training, available to all, with the possibility of qualifying in IT and acquiring an "Internet &amp; multimedia passport".</li> </ul>
<b>2. 4,000 additional youth jobs as multimedia trainers</b>	<ul style="list-style-type: none"> <li>• Digital public centres will lead to the creation of 4000 youth jobs as multimedia trainers, amounting to budgetary spending from the State equivalent to 183 million EUR over the next 3 years</li> </ul>
<b>3. Creating an "Internet &amp; multimedia grade" for all pupils</b>	<ul style="list-style-type: none"> <li>• The provision of multimedia resources and internet connections to all primary schools will be completed by 2002. Financial Support from the State amounting to 55 million EUR over the next 3 years will be given to local authorities.</li> <li>• From next term onwards, all teenagers leaving secondary school will have the opportunity to take the Internet &amp; multimedia grade (Brevet Internet et Multimedia). This possibility will be extended to all school children leaving primary school as from 2003.</li> </ul>



<b>4. 1.2 million unemployed people will be provided with IT training sessions by 2002</b>	<ul style="list-style-type: none"> <li>• Training session modules including computer, Internet &amp; the multimedia education will be made available to all, with priority for the unemployed.</li> <li>• 1.2 million people will be eligible for this scheme by the end of 2002. This measure will cost approximately 153 million EUR over the next 3 years.</li> </ul>
<b>5. 1.50 million EUR devoted to providing training centres for apprentices with IT equipment.</b>	<ul style="list-style-type: none"> <li>• 75,000 youths in apprentice training centres will benefit from sessions on computers, the Internet &amp; multimedia.</li> <li>• The Government has decided to finance 50% of the equipment of training centres for apprentices, amounting to 1.5 million EUR.</li> </ul>
<b>6. Providing all students' rooms with access to the Internet</b>	<p>Each of the 150,000 individual student rooms on University campuses will be equipped with high speed Internet access, within the framework of the rehabilitation of premises planned according to the U3M program (Universities of the third millennium).</p>
<b>7. The decree on the unbundling of the local loop will be published in summer 2000</b>	<p>To strengthen competition within the French Telecommunication market and to enable all Telecommunication operators to offer high speed Internet access, the intervention of local authorities in funding broadband will be encouraged. The decree on the unbundling of the local loop, published in summer 2000, will enter into force in 2001.</p>
<b>8. Governmental measures will foster the gifts of multimedia equipment and digital material by companies to employees and associations</b>	<p>The Government will encourage gifts of multimedia equipment and digital material by companies to employees and associations through tax incentives.</p>
<b>9. The gifts of multimedia equipment and digital material by the public sector to associations will develop</b>	<p>The Ministry of Economy &amp; Finance will give 1,000 computers by the end of 2000 to associations, in particular to charities, remedial education and parents' associations.</p>
<b>10. Bridging the North/South digital divide</b>	<ul style="list-style-type: none"> <li>• France considers bridging the North/South digital divide as a priority for its foreign co-operation policy. France's contribution to the French speaking countries Fund for Information super highways represents 6 million EUR.</li> <li>• Under its European Union presidency, France will promote the reinforcement of EU solutions to the challenge of the North/South digital divide.</li> </ul>
<b>Creating digital opportunity for the future</b>	
<b>1. Increasing the number of IT professionals</b>	<ul style="list-style-type: none"> <li>• The Government has decided to create an Internet Institute near Marseilles. It will be the first new Internet Institute network to be implemented by local authorities.</li> <li>• All University programs dealing with IT in its various components will be reinforced, which will result in over 30,000 new IT professionals each year by 2001.</li> <li>• 45 professional computer &amp; multimedia degrees will be implemented in September 2000, with an increase of 1,200 students. The number of graduates in Telecommunication schools will double over the next five years.</li> <li>• The Government has taken measures to ease IT labour force entrance in France.</li> </ul>



<b>2 - One extra billion French francs to foster Research in IT</b>	<ul style="list-style-type: none"> <li>• The staff of public Research devoted to IT will increase by 25% over the next four years, the number of researchers in the National Institute for Computer &amp; Automation (INRIA) will be doubled and an IT department will be created within the National Centre for Scientific Research (CNRS).</li> <li>• Among national priorities for IT Research will be security, software and technologies, namely, smart environment, smart transport, house automation, technology for the disabled, open and free software, on line educational and training resources, on line health, 3D real time computing on line and 4D multimedia.</li> </ul>
<b>3. Speeding up the network for Education &amp; Research</b>	<ul style="list-style-type: none"> <li>• The French Internet broadband Research &amp; Education network RENATER 3, will be boosted to a speed of 2.5 gigabits/sec by 2002, i.e. 16 times faster than the existing RENATER 2.</li> <li>• Minimum access capacity for Universities will be fostered from an existing average of 2 megabits/sec. To 155 megabits/sec.</li> <li>• Experimental high-speed broadband is to be deployed to sustain next generation Internet applications with a starting capacity of 10 gigabits/second.</li> </ul>
<b>4. Creation of a Strategic Internet Committee for IT</b>	<ul style="list-style-type: none"> <li>• See above.</li> </ul>

Moreover the Prime Minister has announced two initiatives:

- A Draft "Information Society" bill (LSI) will be submitted to the Council of Ministers in autumn 2000. It will have three main planks:
  - Clarification of the rights and duties of all.
  - Democratisation of access to the information society.
  - Security and openness of electronic transactions.
- In autumn 2000, an inter-ministerial committee for the modernisation of the State will be dedicated to electronic Government.



For the first time in France, a public consultation concerning a regulatory text will be launched by the Government from 25 July 2000 to 15 September 2000. This consultation is about the project of decree implementing the law of 13 March 2000 on electronic signature. <http://www.internet.gouv.fr/signelect-projdecret.htm>

Finally, France assumed the Presidency of the European Union in July 2000. Amongst its priorities for action, France *"will focus on the implementation of the eEurope action plan adopted by the European Council in Santa Maria da Feira. In this connection, in order to prevent new inequalities emerging (the "numeracy gap"), it will concentrate on developing a policy of equal access to the Information Society for all, through measures such as the connection of all schools to the Internet and the reduction of access costs, etc. It will seek to foster projects designed to underpin the competitiveness of the European economy (research, content policy) and to combat cyber crime."* (<http://www.presidente-europe.fr/>).



# Germany



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## Introduction

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The Federal Republic of Germany consists of 16 states known as Länder. Both the Federal Government and the Länder Governments deal with the Information Society.

At the regional level, each Länder (BadenWürttemberg, Bavaria, Brandenburg, Hesse, Lower Saxony, Mecklenburg-Western Pomerania, North Rhine-Westphalia, Rhineland-Palatinate, Saarland, Saxony, Saxony-Anhalt, Schleswig-Holstein and Thuringia, Berlin, Bremen and Hamburg) has undertaken to design, finance and support its own Information Society development programmes.

The German Federal Government has for a long time seen the development of the Information Society in Germany as one of the most important tasks for the future. In February 1996, the German Cabinet passed an action plan entitled "Info 2000: Germany's way to the Information Society". The Federal Government has been implementing this programme ever since. In November 1998, the new Federal Chancellor, Mr. Schröder, in his first statement as head of the Government, made clear the importance of the Information Society for policy. He stated that the most important objective for an IS policy is to reduce unemployment and create new jobs opportunities. One year after, in November 1999, a new Action Programme entitled "Innovation and Jobs in the Information Society of the 21<sup>st</sup> Century" was released. Furthermore, several initiatives were launched with the aim of achieving the full employment potential of the new technologies sector.

Since 1996, Germany has advanced a good deal on the way to the Information Society. Within a year Germany achieved 11 million Internet links (7.5 million at the end of 1998). Germany is the world leader in the number of PCs equipped with CD-Rom drives in use in companies. The Information Industry has developed into an increasingly independent sector with around 1.7 million employees and 100,000 new jobs produced in the past 3 years. The IT industry realised on total sales more than 102 billion EUR profit, making it Europe's largest market by far.

However, other countries are ahead of Germany in the spread and use of the Internet and modern multi-media applications. Today, Germany is only ranked as 13<sup>th</sup> in the world in the 2000 Information Society Index (IDC/World Times Survey) and 6<sup>th</sup> in European Union. Even if it reflects an "established infrastructure and computer literate population", only about 9% of the population use the Internet as compared with 30% in the USA.

According to the Government, Germany is on its way to a leading position in the Information Age. But *"a more intensive use of ICT will be necessary with a view of strengthening Germany's competitiveness (...). Therefore there is a need now to do what is necessary in government, management and labour circles to take Germany from its current middle-of-the-road position to a leading position by international standards with regard to the use and dissemination of ICT"*. This "Germany's vision" will affect nearly every policy area. In addition to the necessary legal conditions, infrastructure, research and technology, the modernisation of the State (e-government) and the German education system and the creation of innovative jobs form the central focus of the new German Information Society strategy.

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# 1. The first Federal Information Society Strategy and its implementation

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## 1.1 "Info-2000: Germany's Way to the Information Society" (February 1996)

Based on the recommendations of the Council for Research, Technology and Innovation of December 1995 (The Information Society - Opportunities, Innovations and Challenges") the Federal Government published its first action plan for implementing the Information Society in Germany, in February 1996. This action plan was entitled "*Info-2000: Germany's Way to the Information Society*" (*Info 2000 - Deutschlands Weg in die Informationsgesellschaft*).

The report describes the current situation and focuses on setting priorities regarding policy measures and the allocation of responsibilities within government. According to the government, a comprehensive national effort is needed and change towards an Information Society must be actively supported. The key role will be played by further liberalisation in telecommunications and the creation of uniform national legal conditions for the supply and use of ICT.

Therefore, the action plan concentrated on the following areas:

- Opening the telecommunications market, the establishment of a common national legal framework, special data protection regulations in the area of telecommunication, clarification of important privacy and security rights and action and support for the use of digital signatures in business transactions.
- The government is of the opinion that it is necessary for the public to be open to the changes involved in the development of the Information Society. The government will do its part to encourage and support this.
- An Information Society will require new qualifications for employees and will generate new job descriptions. New educational requirements, qualification and training will be developed accordingly. "Schools on the network" or "Schools on-line" (Schulen an das Netz) are examples of projects that will support this process. In addition, pilot projects for the general use of information technologies in research and teaching will be initiated at universities and other educational organisations.
- Research and technological development are needed for the development of the Information Society in Germany. In order to encourage this, the Ministry for Education, Research, Science and Technology (BMBF) initiated a programme called "Innovation for the Information Age 1997 - 2001".
- Public administration reforms for a "lean" and at the same time "citizen-oriented" State can be supported by ICT. The Federal Government will lead in this area, the information network between Berlin and Bonn being an important building block.
- Standards and norms play an important role in the information technology sector. It will be important to adjust the contents of these norms and standards to meet new requirements.
- Numerous possible applications for information technology will contribute to the development of the Information Society.
- The international dimension of a modern information infrastructure will be advanced through close co-operation within the European Union, helping to shape Europe's way towards the information society. The introduction of trans-national telematic applications and information services will also be of importance.

It will be necessary to co-ordinate the many areas of activity involved in the development of an Information Society. This will be one of the goals of the Federal Government.

Moreover, the Federal Ministry of Economy and the Federal Ministry of Education, Science, Research and Technology established the **Forum Info 2000** in October 1996 as an important part of Info-2000. The forum served as a societal discussion platform where approximately 180 high level representatives of various organisations and groupings including industry, unions and social organisations were invited to discuss particular issues surrounding the emergence of the Information Society. Examples of the issues discussed included working in the Information Society, senior citizens in the Information Society, citizen-friendly administration and health care.

## **1.2 Policies and Activities (1996-1998)**

Germany instigated decisive changes to public policy during 1997 and 1998 to ensure that it would be competitive on the way into the global Information Society. Major achievements during this period have included opening up the telecommunications market since 1998, the introduction of new multi-media services and end-user equipment, the issuance of new laws and more than 500 telecommunications licences by the Regulatory Authority for Telecommunications and Postal services and a reduction in telephone and Internet access costs.

Numerous activities have been conducted by the Government as well as by the German Parliament (Parliament Inquiries on Information Society), some examples being:

- **Initiative Telework ("Telearbeit")** launched by the Ministry of Economics (BMWi) and the Ministry of Work and Social Order in 1996 in order to promote the development of teleworking.
- **Support Initiative Telecooperation** launched by the Ministry of Education, Science, Research, and Technology (BMBF) with two key concerns: Telecooperation POLIKOM and Telecooperation and value-added services.
- **Schools to the Net - "Schulen ans Netz"** launched by the Ministry of Education, Science, Research, and Technology (BMBF). In particular, this initiative aims to connect 10,000 of 41,000 German schools to electronic information networks.
- **Support Programme: Centres of Competence for Electronic Commerce to Support SMEs** launched in December 1997 by the Ministry of Economics (BMWi) to establish a network of regional competence centres (information consulting and qualifying centres on electronic commerce) in Germany.

In 1998 a *"Progress Report of the Federal Government Info 2000: Germany's Way into the Information Society"* provided an overview of policy measures, which have been set up since 1996 within the particular fields of action mentioned above.

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## **2. The new Action Programme of the Federal Government**

### **2.1 Federal IS Action Programme: "Innovation and Jobs in the Information Society of the 21<sup>st</sup> Century" (November 1999)**

On 27 October 1998, Gerhard Schröder was elected as the seventh Chancellor of the Federal Republic of Germany. In his policy statement delivered on 10 November 1998, he emphasised the importance of active involvement in shaping the Information Society as the central task for ensuring Germany's ability to meet the changes and challenges of the future. He announced an Action programme and major initiatives to be taken by the Federal Government to "embark on the Information Age".

This was done in November 1999, when the Federal Ministry of Economics and Technology in co-operation with the Federal Ministry of Education and Research published a new governmental action programme entitled "Innovation and jobs in the Information Society of the 21<sup>st</sup> Century" (Innovation und Arbeitsplätze in der Informationsgesellschaft des 21. Jahrhunderts). A budget of DM 3 billion of funding has been assigned for this programme which will run for a five-year period until 2005.



This government's action program is a cross-sectoral plan for accelerating the use and dissemination of new ICT in the 21st century.

The program aims to promote the use of ICT in all sectors of society in order to combat unemployment and to make Germany a leading nation in the IT sector in Europe.

The detailed program outlines the main aims, key measures and concrete targets necessary to enter the Information Age. The political sector, trade and industry, and society must join together in a joint effort to reach the targets.

There are 4 strategic fields of action:

- Ensuring broad access to the new media and providing media competence.
- Increasing the confidence of suppliers and users with security legislation.
- Promoting state modernisation.
- Shaping change together.

Alongside the strategic fields of action are 10 general aims with concrete targets to be achieved by the year 2005:

General aims		Concrete targets by the year 2005
<b>1. Wider Access to new media</b>	Increase the spread and use of modern ICT in every sector of the economy and society in order to achieve a leading position internationally within the next five years. All the available potential skills of men and women are to be mobilised and utilised.	<ul style="list-style-type: none"> <li>• An increase in the share of Internet subscribers in the total population from 9% in 1999 to more than 40% by the year 2005.</li> <li>• To increase the share of SMEs using external networking to a level comparable with that of larger firms.</li> </ul>
<b>2. Access for all groups</b>	Ensure that all social groups are involved and have equal chances in the comprehensive use of ICTs. Groups that have been underrepresented and disadvantaged should be given easier IT access.	<ul style="list-style-type: none"> <li>• To encourage more women to use the Internet: an increase in involvement of 50% is expected.</li> <li>• To increase the share of women setting up in business from the present c. 30% to at least 40% by the year 2005, mainly through new businesses in the IT sector.</li> </ul>
<b>3. Consumer protection</b>	Safeguard the interests of the general public and protect human dignity, ensure the protection of children and young people, protect consumers, ensure each individual's right to self-determination in information and provide sufficient means of protecting sensitive information.	<ul style="list-style-type: none"> <li>• Sustain development of the legal framework for information, communications and the media, in a way that is viable for the future while observing the competencies of the Federal Government and the Länder.</li> </ul>



<b>4. Education</b>	Thorough modernisation of school and vocational training systems giving every pupil and student basic knowledge of ICTs. Enable them to handle ICTs responsibly. Give teachers the requisite knowledge of multimedia facilities.	<ul style="list-style-type: none"> <li>• Equip all schools, vocational training centres, general and occupational advanced training facilities with multimedia PCs and Internet connections by the year 2001.</li> <li>• Achieve a leading position world-wide in education software by the year 2005.</li> <li>• Ensure that all universities use networked computers for taught units and independent study.</li> <li>• To integrate the new media in the changing forms of lifelong learning.</li> </ul>
<b>5. Research and development</b>	Maintain and expand the high level achieved in basic research and the development of new IT applications in order to make optimal use of the possibilities for innovation and growth within Germany and to join the front rank internationally.	<ul style="list-style-type: none"> <li>• Expand the German Research Network (DFN) to be a high-speed network in the gigabit sector by the year 2000.</li> </ul>
<b>6. Lead in technology and Infrastructure</b>	Expand existing IT infrastructure in order to maintain the current international lead in telecommunications.	<ul style="list-style-type: none"> <li>• Develop pure optical networks by 2005 – fibreglass cabling for every household by 2010.</li> <li>• Develop new broadband mobile communication systems with access to multimedia services at all times in every location by 2005.</li> <li>• Cable-free Internet access from 2002.</li> </ul>
<b>7. Work organisation, innovative jobs and companies</b>	Increase the spread of innovative forms of work and corporate organisation, in order to enable the potential of ICT to be utilised to strengthen the innovative ability, flexibility and productivity of companies. The skills and motivation of employees must be able to develop in flexible forms of work organisation.	<ul style="list-style-type: none"> <li>• Expand the volume of training in new IT occupations to 40,000 places by the year 2002.</li> <li>• Increase the supply of skilled personnel for IT work by around 250,000 by the year 2005, and in doing so increase the share of women in IT vocational training and on information courses.</li> <li>• Double the number of tele-workplaces from the present c. 800,000 by the year 2002.</li> <li>• Double the number of multimedia companies from the present c. 1,500 by the year 2001.</li> </ul>
<b>8. Ecology and sustainability</b>	Make full use of the potential offered by the development and introduction of the new technologies for ecological modernisation oriented to the model of sustainability based on AGENDA 21 of the Rio Conference.	

<b>9. Modernise the State through eGovernment</b>	Achieve comprehensive use of ICT in every area of the public sector and so increase the efficiency of the public administrations. The aim is to provide up to date and transparent information for the general public and to simplify communication between individuals, companies and the administration.	<ul style="list-style-type: none"> <li>• Develop a modern IT strategy for the Federal administration by the summer of 2000 and ensure the broad use of ICTs in public administration.</li> <li>• Introduce electronic tendering and contracting for public works from the year 2001</li> <li>• Introduce electronic tax declarations across a broad front in the financial administration from the year 2000.</li> </ul>
<b>10. European and International cooperation</b>	Promote co-operation in Europe and at the international level, in order to remove existing obstacles and avoid new barriers on the way to the global information society.	

A brief summary is presented in the table below while the report (and update on related developments) is available at <http://www.iid.de/aktionen/aktionsprogramm/deckblatt.html>. The English version is available at <http://www.bmwi.de/aktionsprogramm>)

**Selection of Measures to be extended or launched according to the general aims  
(An update of each action can be found on related web sites)**

<b>Wider Access to new media</b>
<ul style="list-style-type: none"> <li>• Action "Internet for All"</li> <li>• Actions targeted at Women : "Women and Work" (1999), "Women give new impulse to technology" (<a href="http://lovelace.fh-bielefeld.de/">http://lovelace.fh-bielefeld.de/</a>), "Women on to the Network" (1998), "Internet Courses for Women and Girls throughout Germany - (<a href="http://frauen-ans-netz.de/">http://frauen-ans-netz.de/</a>)", general information campaign to be launched (<a href="http://www.be-ing.de/">http://www.be-ing.de/</a>), International Women's University for Technology and Culture (<a href="http://www.int-frauenuni.de/">http://www.int-frauenuni.de/</a>)</li> <li>• Information Society Forum: <a href="http://www.forum-informationsgesellschaft.de">http://www.forum-informationsgesellschaft.de</a></li> <li>• Initiative "Germany 21 - Entering the Information Age":<a href="http://www.initiated21.de/">http://www.initiated21.de/</a></li> <li>• The Internet Prize (<a href="http://www.internetpreis-deutschland.de/">http://www.internetpreis-deutschland.de/</a>) starting in 2000 for 5 years</li> <li>• Seniors in the Information Society (<a href="http://www.iid.de/vsiw/index.htm">http://www.iid.de/vsiw/index.htm</a>)</li> </ul>
<b>Promoting the use of multimedia technology in education</b>
<ul style="list-style-type: none"> <li>• Equipping and Linking schools to the Net: extension of the "Schools on to the Network Initiative" (Schule im Netz - <a href="http://www.san-ev.de/">http://www.san-ev.de/</a> launched in 1996); Market Place for Schools Initiative (<a href="http://www.marktplatz-fuer-schulen.de/marktplatz/">http://www.marktplatz-fuer-schulen.de/marktplatz/</a>) and new initiatives, in association with the Länder (see report prepared by the Ministry of Education BMBf in August 2000 "IT in der Bildung at <a href="http://www.bmbf.de/presse01/KONZE_IT.pdf">http://www.bmbf.de/presse01/KONZE_IT.pdf</a>)</li> <li>• Specific measures for women teachers and schools girls : LISA-N@t, Girt@Net, "Schools on to the Network Initiative" and other initiatives targeted at women (see above) "</li> <li>• InfoSCHUL - the use of electronic, multimedia information sources in schools (1999-2000)</li> <li>• New programme "new media in education" is being prepared (<a href="http://www.gmd.de/NMB/PT-NMB.html">http://www.gmd.de/NMB/PT-NMB.html</a> and <a href="http://www.iid.de/aktionen/nmb.html">http://www.iid.de/aktionen/nmb.html</a>)</li> <li>• National educational server (<a href="http://www.bildungserver.de/">http://www.bildungserver.de/</a>)</li> </ul>

- Joint Task for University Construction (jointly with Länder): Computer Investment Programme ; Workplaces for Researchers Programme
- Special University Programme III from 2000 (jointly with Länder) for new media in teaching
- Virtual technical university and long distance courses commission (<http://www.vfh.de/>)
- "Lifelong learning - Further Education as a Basic Need" key project
- LERNET competition in 2000-08-22 (Network-based learning in SMEs and the public administration - <http://www.lernet-info.de/>)
- The Alliance for Jobs, Training and Competitiveness Initiative (Supply of skilled personnel in the Information sector and Green Card initiative)

### **Building a Better legal framework to strengthen Confidence and Security**

- Amendment of the legislation on data protection and consumer protection
- Consumer Friendly Regulation concerning electronic commerce
- Youth Protection Net (jugendschutz.net) and the Multimedia Voluntary Self Control organisation
- Campaign "Information security in the Information Society" (April 1999) (<http://www.sicherheit-im-internet.de>)
- "Key Points on German Crypto Policy" (June 1999)
- Project Digital signature (<http://www.bsi.de/aufgaben/projekte/pbdigsig/index.htm>)
- Federal Office for Security in IT (<http://www.bsi.de/>)
- Copyright legislation
- Global Business dialogue on electronic commerce on questions of taxation

### **Creating Innovative Jobs and Promoting New Applications**

- Electronic Commerce Initiative: Continuation of the "Regional Competence Centres for Electronic commerce " until 2001 (Kompetenzzentren Elektronischer Geschäftsverkehr <http://www.ec-net.de/>)
- Various measures to encourage SMEs to adopt electronic commerce solutions
- Pilot projects to promote virtual companies and cooperation networks
- Annual "New Multimedia Business Competition" (<http://www.gruenderwettbewerb.de/>)
- Extension of SUBITO - the electronic library document delivery service (<http://www.subito-doc.de>)
- Launching of "The Internet Exchange for Tele-Work" pilot project (<http://www.telejobservice.de/>)
- Launch of FABNET competition in 2001 (tele-cooperation between virtual SMEs)
- Innovation in the services sector: DL2000.de – Dienstleistungs-Community für das 21. Jahrhundert (<http://www.dl2000.de/main.php3>)
- Transport Telematics Forum and telematics applications for transport. DELFI project (<http://www.delfi.de/>)
- Logistics Training Initiative (<http://www.logistik.de/>) and Transports and Logistics
- Health Information Network - Competence networks for medicine (<http://www.mednet.de/>)
- Building up of an IT-supported environmental information system (<http://www.bfs.de/imis/imindex.htm>) and GEIN2000 the German Environmental Information Network (<http://www.gein2000.de/>).

### **Taking an leading Position in Technology and Infrastructure**

- The third generation of mobile phone (UMTS) (see <http://www.regtp.de/> and <http://www.dlr.de/IT/KT/mobikom/UMTSplus.html>)
- Extension of the cable networks
- Continuation of the Digital Radio and Television initiative ([http://www.bmwi.de/infomaterial/dr\\_kurz.html](http://www.bmwi.de/infomaterial/dr_kurz.html))
- Extension of the German Research Network (<http://www.dfn.de/win/gwin/>)
- Communication networks of the next generation KOMNET (<http://www.iid.de/infomappe/komnet/index.html>)
- Launch of a competition entitled VERNET "Secure and reliable transactions on open communication networks" in 2000 (<http://www.dfn.de/win/gwin/>)
- Programme for New Internet technologies

## Advancing State Modernisation

- Preparation of the "Federal Government's IT strategy" by the summer of 2000 with 3 goals: information management, the one-stop-shop and the Federal Government's Information Association (IVBV)
- Pioneering model projects (weather, patent, public tenders on the Internet, ELSTER - tax declarations <http://www.elster.de/>)
- Continuation of the "Virtual Town: MEDIA@Komm": use of ICT and Internet in municipal affairs: virtual town hall and virtual market place (<http://www.mediakomm.net/> and <http://www.dlr.de/IT/MM/media@komm/>)
- Competition: Telework in municipal administration DATEL (<http://www.bmwi.de/projekte/telearbeit/datel.html>)
- The Labour Office in 2000 initiative (<http://www.arbeitsamt.de/hst/index.html>)
- "Elections on the Internet Project" (<http://www.internetwahlen.de/>)
- New geographical system : "SIS - Strategic Information System" (<http://www.ifag.de/BKG/bericht.htm>)

## 2.2 Examples of initiatives resulting from the Government Action Programme

### • "Internet for All" Action ("Internet für alle")

The number of German people using the Internet and on-line connections is continuously growing. However, compared to other countries, Germany is still behind. Moreover, the use of ICT is concentrated on a few social groups. According to a 1998 study of the Technical and Scientific Association of the Electrical Engineering Industry, only 45% of the German take a positive view of the trend to the Information Society. This figure falls for women and seniors citizens. Therefore, the Government has considered that it was necessary to make the advantage of using ICT and Internet clearer to broad sections of users, in particular those who need to be persuaded to use IT in their daily lives. This is the objective of the "Internet for All" initiative.

Measures that are already running will be extended and the Federal government in association with employer's associations, unions and other social groups will launch new measures. Innovative partnerships will be built between the public and private sectors and support will be given to private initiatives. An information and demonstration campaign will be conducted.

Among the measures, one can cite:



**Actions targeted at women and girls (see above).** For example, at the end of September 1999, in the framework of the "Women on to the Network" initiative (Frauen and netz), a common initiative was launched by the Federal Ministry for education and research, the magazine Brigitte, Deutsche Telecom AG and the Federal Institution for work.

In 101 cities more than 1,200 Internet initiation seminars were open to women free of charge (<http://www.frauen-ans-netz.de> and <http://www.iid.de/aktuelles/presse/pm220999b.html>) This was the largest initiative of its type in Germany.



**Actions targeted at seniors** (e.g. the Senior Info Mobile - <http://www.iid.de/vsiw/index.htm>)



**The Internet Prize:** This annual award will start in 2000 and will be organised jointly with sponsors from the private sector, in a public-private partnership. Every year, a focal topic will be chosen for the candidates (electronic shopping, learning software, security procedures, etc). They will have to propose products with a broad impact that have proved particularly valuable within a specific field. An independent jury will select the winners from the submitted ideas. (<http://www.internetpreis-deutschland.de/>) "Deutschen Internetpreis 2001" was launched in August 2000.



The **Initiative "Germany 21 - Entering the Information Age"**: this cross-sectoral initiative launched by employers to promote change from the industrial to the information age is accompanied by the Federal Government and the Länder.

This public-private initiative combines various initiatives: the "D21 initiatives" (a grouping of more than 70 companies from various sectors), the employer's initiative entitled "Fit for the Information Age" under the patronage of the former Federal president Roman Herzog and the Initiative "Alliance for education. Several projects and actions are undertaken under this umbrella initiative ("Deutschland 21 - Aufbruch in das Informationszeitalter" - <http://www.initiatives21.de/>).

- **"Information Society Forum"**



On December 1999, the Federal Ministry for Economy and Technology (BMW) appointed a new Forum information society, in the continuity of the "Forum Info 2000" established in 1996.

The Information Society Forum is composed of experts and representatives of various social groups and provides information and stimuli, develops models and above all creates a platform for broad social discussion. At present, "The Internet for all" action is the general focus of the Forum, which will continue its work with six working groups (education, democracy and administration, women, art and culture, seniors, latest developments). A permanent Office for the Information Society Forum supports the work of the working groups, disseminates results (newsletter, web site: <http://www.forum-informationsgesellschaft.de/>) and answers enquiries from citizens. Several reports are available for download on the Forum web site (mainly in German): Women in the IS, Working in the IS, Art and Culture in the IS, Multimedia in the Regions and Municipalities, Senior citizens and the IS, etc.

- **The Alliance for Jobs, Training, and Competitiveness and the Green Card Initiative**

The explosion of new technologies has led to considerable demand for IT specialists in most of the industrial nations. At present, the information sector is suffering from a considerable shortage of skilled personnel while important employment potential exists in this sector. With more than 1.7 million employees, the IT industry is already one of Germany's most important industries for growth and employment. The number of jobs in the information technology industry grew by 9% in 1999, and by 11% in the sector's software and services branches. Information technology is a key technology, which provides impetus for growth in a wide variety of industries.

In July 1999, the Federal Government agreed with its partners in the Alliance for Jobs, Training and Competitiveness (business associations and the unions) to launch a program to alleviate the shortage of qualified personnel in the information technology sector in co-operation with vocational training programs, technical colleges and universities and continuing education programs. A number of measures were decided such as:

- Increase the number of openings for training in new IT and media occupations in a joint effort with labour and management. The 40,000 new openings for such training originally scheduled to be created in the year 2002 will be made available in 2000.
- In addition, industry has also pledged to make a further 20,000 traineeships in the IT field (creating a total of 60,000) available by the year 2003 as part of the targeted market opening for top-flight IT experts from other countries.

- **The Green Card Initiative:** according to industry estimates, IT providers alone are looking for an additional 75,000 IT experts. IT users report a shortage on at least the same scale. A huge gap exists between the number of IT job vacancies and the number of suitable applicants. It is currently impeding economic development and the progress of IS in Germany.



For this reason, the German government and representatives of IT businesses have agreed upon a joint immediate action program which consists in allowing foreign experts to work in Germany on a temporary basis.

This, the Green Card Initiative, announced by the Federal Government in March 2000, will permit to up to 20,000 foreign programmers and engineers who hold university or polytechnic degrees in IT-related fields to obtain a special work permits valid for three to five years. The permit procedures for information technology specialists will be accelerated.

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### 3. Länder Information Society Strategies and Initiatives

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Many of the state governments, either on their own, or with support from, or in co-operation with the federal government, the EU, and industry, have started initiatives and support programmes on the Information Society.

A few examples of these actions are:

- **Baden-Württemberg media - perspectives for the development of the media in the state of Baden-Württemberg.**

Started in July 1996, a broad spectrum of applications are supported by the Länder (<http://www.baden-wuerttemberg-media.de>), including a 'Baden-Württemberg media' initiative, anwenderplattform tele@arbeit, Baden-Württemberg Connected e.V., Virtual Schools, Internet-TV Initiative, Young and the Net and Multimedia project.

- **Bayern Online - an IS programme of the Bavarian state government.** Started in 1995, the State programme includes a number of actions such as the Bavarian network (BAYNET), the pilot project 'Hochschulnetz', the project 'SOLUM-STAR/Net', the 'Bayern Server', the project 'Stadtnetze' (city networks), the project 'Bayernweites Verkehrsmanagement' BAYERN-INFO' (a Bavarian traffic management system), the project 'Güterverkehrslogistik Bayern 2000', the "Telekonzept Bauindustrie", the 'Bayerisches Innovationsnetz', the project 'Mittelstands-Info', the project 'Telearbeit in', etc. The Bayern On Line Congress took place in July 2000 (<http://www.bayernonline.de>).

- **Brandenburg's Information Strategy 2006 (BIS 2006)**

The European Union has selected the federal state of Brandenburg as one of the 22 model regions for the identification of regional strategies and action plans on the way to the Information Society. The 18 month EU project BIS 2006 presented the first phase of the development of a strategy for "Brandenburg's way towards the Information Society". A second phase started in February 1999 which is to last until February 2001 ([http://www.brandenburg.de/~bis2006/4erverversionen/dhtml\\_f.htm](http://www.brandenburg.de/~bis2006/4erverversionen/dhtml_f.htm)).

- **BRISE - Bremen's Regional Information Society Strategy Development**

In the framework of the EU RISI programme, the region of Bremen has developed its own strategy and actions to promote the development of the Information Society. The final Action Plan was finished in January 1999 and a phase 2 has now started. Several projects have been launched within this framework such as "Health Care and Social Navigator Bremerhaven", "Teleradiology-Pilot" , "BEAMER - workers council members online" , "boje" "transparency of the labour market", "Disabled People online" , Project "Bremen Women into the Net" etc. (<http://www.bremen.de/brise/> and BRISE 2: [http://www.bis2006.de/4erverversionen/dhtml\\_f.htm](http://www.bis2006.de/4erverversionen/dhtml_f.htm))

- **Initiative Information Society Schleswig-Holstein**

Participating in the EU RISI programme, the State of Schleswig-Holstein has developed a regional strategy for a proper way towards the Information Society. The Technology Foundation of the Land of Schleswig-Holstein (Technologiestiftung Schleswig-Holstein) obtained in September of 1999 in the context of the European RISI+ program a grant from the European Community to carry out a second phase of its Information Society Initiative in Schleswig-Holstein. The project shall run for a period of 18 months from September 1st 1999 through to February 28th 2001 (<http://www.tsh.de/initiative2/deutsch/index.html>).

The new Initiative Information Society in Schleswig-Holstein is constructed upon 9 Fields of Activity which are: Dialogue, Jobs with a Future, Media Literacy, Culture, Health Care, Ecology, Civil Rights and Data Protection Knowledge, Access to Information for all, On-line Administration. (<http://www.tsh.de/initiative2/deutsch/index.html>).

- **The Berlin Way towards the Information Society**

The initiative was started in July 1997 and is controlled by the Senate Administration for Economy and Business (Referat 'Medien- und Informations- und Kommunikationstechnologie'). The goal of the initiative was to support structural change in Berlin towards the Information Society as well to fundamentally modernise business and society with the assistance of new media and communication technologies. The initiative is to promote its use in all working and living spheres of Berlin such as education business or city administration and to strengthen the technology suppliers (<http://www.berlin.de/Land/SenWiTech/ProjektZukunft/index.html>)

- **Media NRW - an initiative of the state of North Rhine-Westphalia.**

Launched in March 1995, the state initiative 'media NRW' intends to support the development, production, introduction and diffusion of new multimedia technologies and multi-media services and programmes in business, private households and the public sector. Several projects have been launched such as Initiative Telework NRW and Electronic Commerce Offensive NRW (<http://www.media.nrw.de>)

Other links on regional strategies and programmes can be found at: [http://www.bmwi-info2000.de/glob\\_invent\\_d/initiativen/laender/gesamtliste\\_laender.htm](http://www.bmwi-info2000.de/glob_invent_d/initiativen/laender/gesamtliste_laender.htm).





# Greece



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## Introduction

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Greece is rather behind in the course towards the creation of an Information Society compared to other EU member countries. Despite a rapid development of ICT and networks during the recent years, Greece is ranked at 29 in the 2000 Information Society Index (IDC/World Times Survey). At present, total expenditures in ICT represent around 3% of GDP, below the average of other EU countries (5-6%). PC and Internet penetration are respectively 15% and 5% which remains low. It appears to be the least developed EU Member State as regards Information Society developments.

In 1995, the Government prepared an Information Strategy White Paper entitled "*Greek Strategy for the Information Society: A tool for employment, Development and Quality of Life*". Presented by the Minister of Industry, Costas Simitris, now Prime Minister, it was the first of its type in Greece.

Today, the government seems determined to undertake a series of new reforms in all sectors of society in order to catch up with the emerging Information society and close the gap between Greece and the other EU Member States. In February 1999, a new White Paper has been released by the Prime Minister, Costas Simitris who stated that "*the participation of Greece, as an equal, in the emerging information society is a major priority for the Government*".

In order to implement the White paper, an Operational Programme for the Information Society is being adopted, in the framework of the Third European Community Support Framework (2000-2006). Around 2.3 million EUR should be dedicated to Information Society development over the next years. There is a great potential for increased use of ICT. Today, the Greek telecommunications market has the highest development rate in Europe. Greece has a unique opportunity to upgrade its position in the global economy and to improve the quality of life of its citizens.

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# 1. The first Greek White Paper on Information Society and its implementation

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## 1.1 The White Paper on the Greek Strategy for the Information Society (1995)

In 1995 the Minister of Industry published the first relevant text of strategic nature towards information society under the title *"Greek Strategy for the Information Society: A tool for Employment, Development and Quality of life"*.

The White Paper defined 4 goals to be implemented within a timeframe of 10-15 years:

- to increase the use of advanced information infrastructure in order to limit the gap between Greece and its partners and to reach international standards;
- to prepare Greek firms to adopt ICT;
- to enable an increasing number of citizens to have access to information infrastructure,
- and finally to encourage electronic transactions with public administrations (e-government).

A number of actions were proposed in the same paper, such as:

- the development of a national infrastructure backbone,
- the creation of "Information Cells" for easy access to networks for each citizen,
- the establishment of an independent entity for securing constitutional guarantees,
- the establishment of a standing parliamentary committee on the Information Society,
- the development of an information network for companies,
- the opening up of the state to electronic transactions with the public,
- the launching pilot applications of social benefit.

Since then the Greek Government has played an important role in the development of the Information Society by funding and promoting information and telecommunication innovation. In particular the General Secretariat for Research and Technology - GSRT (<http://www.gsrt.gr>) and sectoral ministries which produced reports in 1997 on their respective actions including Information Society issues (e.g the Strategic Plan for Administrative Reform of the Ministry of Interior, Public Administration and Decentralisation). Many actions have been funded in the framework of the 2<sup>nd</sup> Community Support Framework.

Public and private organisations and associations such as The Federation of Hellenic Information Technology Enterprises (SEPE) and Forthnet are also active participants in European and Greek ICT projects. Also, many studies have arisen regarding the development of advanced technologies, in particular within the framework of the "Communication Forum".



In May 1998, the Ministry of Transport and Communications, in order to ensure the viable progress of the Information Society, without exclusions and differences, promoted the establishment and operation of "Communication Forum".

Participants were EU and national conveyors, telecommunication service providers, experts, groups of users and consumers. The Communication Forum was established in order to formulate a national communication policy so as to constitute a lever for the development of the economy, society and democracy (<http://www.eett.gr/>).

However, there are many obstacles in the development process in Greece, among which the high telecommunications access costs as well as the relatively low level of familiarity of the average Greek using computers. While several of the actions included in the IS strategy have been implemented and a number of regulatory initiatives have begun, many others have since been reviewed or abandoned. Therefore, there was a need for a revised strategy.

## 1.2 Examples of implemented or on-going actions (1995-2000)

- The **Klisthenis programme** is a large operational programme for the modernisation of public administration, computerisation and machine organisation of services, with applications for the taxation system, customs, the stock market network and electronic exchanges, modernisation of Social Insurance Foundation etc. The programme is incorporated in the 2<sup>nd</sup> Community Support Framework and had a budget of 273 MEUR for the period 1994 to 1999. The total budget is expected to be completely absorbed by the programme during the year 2000.

Within this programme:

- The TAXIS involves a number of IT projects in the fields of taxation, customs offices and the treasury budget. This programme contributes to the improvement of services provided to all parties carrying out transactions with the Ministry of Finance, the effective support of decision-making procedures, combating tax and duty evasion and the control of public spending. Through TAXIS, the Ministry of Finance and the General Secretariat of Information Systems are promoting the development of a pilot system for the electronic exchange of receipts and, in particular, the electronic filing of Value Added Tax statements. The Ministry is also currently considering the possibility of supplying taxpayers with a smart card identifying its holder in order to permit electronic transactions and the issuance of standardised tax certificates at special points of service. The General Secretariat of Information Systems is preparing the infrastructure and the operational scheme necessary for launching this new Electronic Transaction System - TAXISnet.
  - The "Syzefxis" project is related to the creation of the public administration network, which interconnects the central services of ministries and regions.
- **The National Land Registry** has been launched by the Ministry of Environment, Planning and Public Works. The registry is a unified system of organised legal, technical and other information, on a district basis, for every property in the Greek territory. Digital maps using modern Geographic Information Systems technology will be prepared for the project. The goal is for a complete land registry for Greece by 2010 and the estimated cost will be 1.19 Billion EUR. The first phase of the project will be completed by the end of 2000 and 13% of the total urban area, 8% of the total rural area and 5% of the remaining area of Greece will have been covered by the registry. So far 139 million EUR have been invested. This comprises 75% EU funding (2<sup>nd</sup> CSF) and 25% for national funding.
  - **Ministries on the Web:** the majority of Ministries have developed web sites.



- **Greek School Net:** D.E.K.E. (Institute for Continuing Adult Education) upon the demand of the Ministry of Education has proceeded to establish the Greek Schoolnet on the Internet (<http://www.ypepth.gr/>).

This network is the result of the merger of three different groups of schools:

- schools which are linked to the Internet through the Ministry of Education programmes
  - schools which participate in the TRENDS programme (Applications of telematics to teachers' training)
  - schools which participate in the "WEB for Schools programme".
- **Teletraining pilot project for Teachers** of the Ministry for Macedonia-Thrace, in co-operation with Aristotle University of Thessaloniki and Democritus University of Thrace. The first four 'tele-classes' are already operating in the cities of Florina, Kastoria, Xanthi and Edessa. These services are also provided to the Greek schools in Munich, New York and Boston.
  - **Initiatives for the development of educational material and software:** The Sirines and Nafsika projects aim to develop educational material and software for assisting teaching. The Kirki project adapts foreign software for Greek students. The project is equipping 300 schools with information technology laboratories. These projects will be completed in the year 2000.
  - The **development of Research Networks:** TEN-34-Quantum Project and its Greek section "EDET - National Network of Research and Technology" which connects all higher education establishments, technological educational institutes and research centres (<http://www.grnet.gr/>).



Gunet is another project which aims to create and operate an advanced technology network connecting the Intranets of 18 higher educational establishments and 14 technological institutes. These projects are financed by the 4<sup>th</sup> Framework Programme of the European Union. They will allow researchers to use advanced network services such as multimedia communications and applications in real time (e.g. teleconferencing). It's upgrading to 135 Mbps is foreseen for the near future.

- **Electronic Commerce Initiatives:** EDI projects and 55 electronic commerce prototypes, creation of electronic commerce centres throughout Greece for the support of SMEs, establishment of a National Committee on Electronic Commerce, textile and clothing projects.
- Development of an action plan for **telemedicine** for Greece by the Ministry of health and Welfare and Medical information services of the National Documentation Centre (EKT).
- **EPPOS programme of the Ministry of culture and sports:** "Uniform Cultural Information System" for documentation and promotion of Greek cultural heritage and civilisation.

This includes the Odysseas web site of the Ministry (<http://www.culture.gr/>), which is one of the most important and complete cultural sites world-wide. The site comprises references to the most important museums, monuments and archaeological sites in Greece. The web site receives around 3000 visitors a day, 80% of which are from abroad.



Other projects include the Polemon project (Information System of the National Monument Archives) and the Hellenic Book Space (<http://book.culture.gr/>) providing Greek content on the Internet.





The **Athens 2004 project** is preparing for the Olympic games and will enable the development of networks and ICT projects for the promotion of cultural and tourist content. (<http://www.athens.olympic.org/>).

More information on implemented and on-going IS development actions in Greece can be found on the ESIS website (<http://www.ispo.cec.be/esis>).

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## **2. The Greek new IS Strategy and its implementation**

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### **2.1 White Paper "Greece in the Information Society: Strategy and Actions" (February 1999)**

In February 1999, the Government published its second White Paper "*Greece in the Information Society: Strategy and Actions*" for the development of the information society in Greece in the coming years.

The document presents a comprehensive strategy for the future and a framework of actions with concrete goals, as well as means, initiatives and mechanisms for achieving them, in all sectors of the Greek economy and society.

These include public administration, education, economy, labour market, health and welfare, environment and transportation, culture and mass media, telecommunications infrastructure and regional development.

For each individual thematic area, the Paper distinguishes:

- Activities undertaken and completed,
- Actions in progress,
- New projects for the future.

A set of principles should underpin government initiatives:

- Providing equal opportunities and access for all.
- Broadening democratic participation.
- Safeguarding citizens' rights.
- Supporting entrepreneurship in the private sector.

The White paper defines actions 10 major objectives:

<b>Open and effective government</b>
To be achieved through the introduction of information and communication systems in the public sector, in order to improve communication with citizens and firms, and to promote transparency. Future actions will build on the results of the ambitious program of IT deployment in the public sector currently under way (covering the internal re-organisation of government departments, tax and payment systems, social security, etc.).
<b>An education system for the 21st century</b>
To be achieved by equipping schools with the new media and wiring them to the Internet, supporting the production of educational software, and training teachers in the use of new technologies in the education process. Current initiatives are aimed at all these goals, and in particular in equipping most schools in secondary education with computer labs.

### **Economic growth based on new technologies**

Economic growth based on new technologies, through regulatory reform and initiatives to foster the development and diffusion of information and communication technologies throughout the economy. In this respect, a review of the existing regulatory and legislative framework for electronic commerce is under way, with a view to propose initiatives of a legislative nature or in terms of the need to develop self-regulatory mechanisms and codes of conduct jointly with the private sector.

### **Improved job opportunities for and the skills of the workforce**

To be achieved by the development of initiatives for the creation of jobs in fast-growing sectors, training programs for a better match between skills in supply and in demand, and the promotion of new forms of work such as tele-work. The latter involves diffusion of best practice, amendment of the legislative framework, promotion of pilot projects in the private and public sector, and the development of tele-centres in remote areas.

### **A better quality of life**

To be achieved through the application of information and communication technologies in the health sector and the development of tele-medicine, as well as through better management of the transport system and environmental resources. In the health sector in particular, IT systems are currently being introduced in a number of Greek hospitals, while there are pilot tele-medicine applications covering the remote regions of Greece.

### **The promotion of Greek culture and civilisation**

To be achieved through the use of computers, telematics and multimedia for the protection of Greece's cultural heritage (document/monument documentation), the promotion of Greek cultural content, the support of artistic creation and the encouragement of the use of new ways of expression. Actions will also be aimed at reinforcing and cultivating the Greek language in the new globalised environment, as well as using technology for substantial contact with Greeks abroad (through the provision of information, language teaching, and common initiatives).

### **The use of new technologies in mass media**

To be achieved by creating a regulatory environment, which encourages entrepreneurial initiatives that will help develop digital TV and the delivery of new interactive services, while at the same time safeguarding cultural diversity and the freedom of expression. In this context, the passing of a recent bill in Parliament has set the legislative and regulatory context for the development of subscriber-based digital broadcasting.

### **Regional participation in the information society**

To be achieved through initiatives to decentralise power and decision-making and to encourage the development of communication infrastructure and new services (in health, education and commerce) based on information and communications technologies at regional and local level. It will also be necessary to promote on-site services for the public (electronic service centres), encourage the use of information banks, as well as the local implementation of centrally planned initiatives (e.g. forest register, property register).

### **Development of the national communication infrastructure**

To be achieved through the completion of the regulatory framework that will allow the entry of new firms and the delivery of new and better communications services in view of full liberalisation of telecommunications while expanding the coverage and scope of universal service. This involves initiatives for the costing, financing and implementation of universal service, as well as for the formulation of competition rules (with respect to interoperability, numbering, licensing and spectrum management) and supervision of their implementation in deregulated telecommunications.



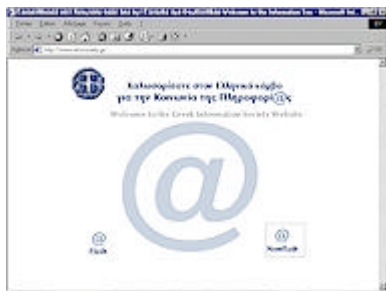
### Protecting citizens' rights in the information society

This concerns in particular equal access for all to the potential of the information society. The legislative and regulatory initiatives undertaken or contemplated cover a broad range. These include the protection of the citizens rights (access to information, protection of information of a private nature), consumer rights, intellectual property issues (copyright, digital exploitation of works) and the legal aspects of electronic transactions (validity of transactions, digital signatures). They also involve labour and insurance legislation for telework, as well as penal matters (crime in cyberspace, unlawful Internet content, protection of minors).

For the implementation of the actions proposed in the White paper, interventions are foreseen on many levels:

- Organisational: restructuring the IT services of the public sector, improvement of the legislative framework.
- Regulatory: reinforcement of regulatory bodies, improvement of evaluation procedures.
- Interventions for executive planning and follow-up.

It was proposed that a large part of planned actions be financed in the framework of the third EU Community Support Framework (CSF). Consequently, the development of an appropriate planning and implementation mechanism will be of vital importance.



### Greek Information Society Web Site

The national strategy is available for consultation on the new Information Society Web site of the Government at <http://www.infosociety.gr/infosoc/policies/index.html>.

The Prime Minister's Office plays a major role in this process. Information can be found on the Prime Minister's web site: [http://www.primeminister.gr/infosoc/index\\_en.htm](http://www.primeminister.gr/infosoc/index_en.htm).

## 2.2 The Greek Operational Program for the Information Society 2000-2006

Earlier this year a New paper "Operational Program for the Information Society" (OPIS) was proposed in the framework of the 3rd Community Support Framework (2000-2006). The Government is still in the middle of negotiations with the EU for the adoption of the Operational Programme for the Information Society, which should be done at the end of August 2000.

The operational program for the Information Society aims to implement the IS strategy presented in the White paper "*Greece in the Information Society: Strategy and Actions*" and will support the eEurope initiative.

The Paper declares that "*the Greek government attaches a particular importance to promoting the Information Society in Greece*" and in fact, a budget of **2.3 billion EUR** will be available over seven years. This amount of funding represents a level of expenditure equivalent to that mobilised by the most ambitious regions in Northern Europe in the previous period. The 3rd CSF finances 61.5% of the total budget, 21% comes from National investment while 17.5% represents private contributions.

This is an innovative horizontal programme that aims to promote the Information Society in a coherent and integrated manner and it cuts across government departments. The leading ministerial authorities are the Ministry of National Economy and the Ministry of Interior, Public administration and Decentralisation. They will be assisted by other actors including:

- The National Committee for eCommerce. (Ministry of Development)
- The Council of Informatics.
- An IS Observatory to be created of personalities and high level experts. This observatory will be responsible for importing and disseminating international state of the art, best practice methods, assisting exchange of experience, know-how and information, providing training tools, commanding and supervising benchmarking studies and forecasting skill needs and skill gaps for information society applications. Its main tasks will be to support the IS policy process (through benchmarking studies etc) and increase public understanding of the Information Society.
- The National Committee for the Information Society, chaired by the Greek Prime Minister

The OPIS will be monitored by a Monitoring Committee of the Operational Programme which is constituted of representatives from involved ministries and bodies and social partners appointed by common ministerial decision.

The lines of action of the "Operational Program for the Information Society" are presented in the table below:

<b>Lines of action</b>	
<b>A</b>	<b>Education and Culture</b>
	<ul style="list-style-type: none"> <li>• To create an educational system adapted to the digital age, characterised by greater use of new technologies in education, the networking of schools, universities and the educational community, well-trained teachers and students, development of digital educational content</li> <li>• Promotion of Greek Culture (cultural heritage and protection of the Greek language)</li> </ul>
<b>B</b>	<b>Modernisation the Public Administration and quality of life</b>
	<ul style="list-style-type: none"> <li>• Creating an open and effective government, offering better services to citizens and firms, in an environment of greater access to public information and transparency (Government On Line at central, regional and local levels)</li> <li>• Quality of Life: Health, Environment, Transportation: using ICT in fields such as health &amp; welfare, the environment and intelligent transport in order to improve the quality of life for citizens</li> </ul>

<b>C</b>	<b>Employment and social inclusion</b>
	<ul style="list-style-type: none"> <li>• Creating an environment with increased employment opportunities for all in the Information Society</li> <li>• Supporting entrepreneurship and job creation related to the application of Information Society technologies in established and emerging sectors of the economy</li> <li>• Upgrading the IT skills and employability of the workforce (training packages, employment promotion actions, financing of "spearhead projects")</li> <li>• Helping develop new forms of work such as telework</li> <li>• Actions targeted at special groups (women, elderly, socially disadvantaged groups)</li> </ul>
<b>D</b>	<b>The digital economy</b>
	<ul style="list-style-type: none"> <li>• Helping the development of the "new economy" by fostering the creation of new high tech firms (venture capital incubators) and the emergence of new sectors (content industry)</li> <li>• Increased productivity and competitiveness throughout the economy: develop the use of ICT by SMEs, develop e-commerce, establish a regulatory framework that facilitates electronic transactions in an environment of privacy and consumer confidence, strengthen the infrastructure support for e-businesses, electronic tendering, solutions for businesses in remote areas and Greek islands</li> </ul>
<b>E</b>	<b>Communications</b>
	<p>National communication infrastructure constitutes the backbone of the Information Society. The goal is the creation of an environment for the widespread provision of advanced telecommunication and audio-visual services at low cost and full liberalisation and competition:</p> <ul style="list-style-type: none"> <li>• Offer unbundled local loops (by mid-2001)</li> <li>• Reduce the leased lines tariffs significantly</li> <li>• Lighten the licences granting requirements</li> </ul>

The Government will engage to implement the following measures:

Objectives	Actions
<b>IT Equipment and Network connections in schools</b>	<ul style="list-style-type: none"> <li>• Creation of an intra-educational network</li> <li>• 1,400 High School and 430 technical institutions will be connected to the Internet</li> </ul>
<b>Improve communication and services in public administration</b>	<ul style="list-style-type: none"> <li>• Provision of IT equipment and network connections to all schools in the secondary educational cycle.</li> <li>• Obligation every administration to make available online basic administrative applications and progressively law texts.</li> <li>• Online submission of VAT declaration sheets is a top priority.</li> </ul>
<b>Qualify employees in public administration</b>	<ul style="list-style-type: none"> <li>• Develop IT training programs in public administrations</li> </ul>
<b>Expansion of the eCommerce</b>	<ul style="list-style-type: none"> <li>• Reform the legislative environment</li> </ul>

It is foreseen to measure the implementation of the objectives through a set of indicators:

<b>INDICATORS</b>	<b>VALUE AT STARTING POINT (Year 2000)</b>	<b>OBJECTIVE 2006</b>
Internet users per 100 inhab.	5	50
Nb of pupils per PC	51	10
% of schools connected to the internet	5%	100%
Nb of PCs per 100 civil servants	15	50
% of health centres connected to the Internet	0%	100%
% of SMEs doing electronic commerce	N/A	15%
% of population covered by systems of frequencies spectrum control	5%	80%
Increase of employment posts in the IS domain	48,750	+80%
IS expenditure as % of GDP	4.1%	6.2%

The draft text for OPIS can be found at [www.infosociety.gr](http://www.infosociety.gr) (in Greek only).

More information on IS developments in Greece will be available by the end of August 2000.

# Ireland



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## Introduction

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Ireland has performed remarkably well in the development of Information Society. The 2000 Information Society Index (IDC/World Times Survey) ranks Ireland 19<sup>th</sup> out of 55 countries, before France, Italy, Spain, Portugal and Greece, to name some other EU member States. Ireland has been successful in attracting 'information-based' operations, high profile telemarketing, sales and customer support services and research and development projects. Combining high technology manufacturing and IT services, the new image of Ireland is that of a "Digital Island". Irish businesses and people started exploiting these advantages on the way towards the Information Society. In 1996, only 5% of Irish people had access to the Internet. In 2000, this figure had risen to 35%. 46% of the Irish were using mobile phones in June 2000 whereas only 23% were doing so at the end of 1998.

This progress has resulted in part from the active commitment of the Irish Government since 1996. At that date, Ireland was ranked in the lower half of OECD countries on a number of other key telecommunications infrastructure and service parameters. There were low levels of awareness about ICT particularly in certain sectors of Irish society and geographical areas; investment in ICT in education and in training was insufficient and there were emerging skill shortages in ICT with very few "citizen-centred public services". Moreover, while many groups were working at an international level (EU) or national (Nordic countries) to tackle the issues and challenges presented by the emerging Information Society, Ireland was not addressing these challenges.

Therefore, considering that *"It is the role of government to create the kind of environment in which the Information Society can flourish. Government action and support is also vital in helping to boost awareness, in regulation and in providing the right legal framework. It is vital, too, that government "shows the way" by being a model for service delivery, providing easily accessed citizen-centred services"*, the Government established an Information Society Steering Committee in March 1996. One year later, in March 1997, the Steering Committee issued the first strategic document related to Information Society "Information Society Ireland: Strategy for Action".

Since this first document, several initiatives have been launched. Further Actions plans and Progress reports have been issued to refine strategy and propose new initiatives as well as to measure and monitor Ireland's progress. In this respect, the "Interdepartmental Implementation Group for the Information Society" and the "Information Society Commission", a public-private advisory body to Government created in May 1997, play a major role, under the leadership of the Prime Minister's Office (Taoiseach).

In January 1999, another major strategy and action plan was released by the Taoiseach's Office. As a blueprint for the Government, several initiatives are being implemented and during the Lisbon Special European Council, the Irish Government underlined its commitment to prioritising the Information Society agenda.

But, while recognising that much has been achieved, the National Competitiveness Council considers that *"there is no room for complacency if Ireland is to keep pace with competitor countries. Throughout the world, Governments are putting new policies into place to capture the exceptional opportunities for economic and social progress that e-Business provides. Ireland has the capacity to harness these opportunities fully for all its citizens, if our institutional structures are aligned with, and are capable of responding quickly and effectively, to the challenges of the digital economy"*.

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# 1. Preparation of an Information Strategy for Ireland

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## 1.1 Information Society Ireland: Strategy for Action (March 1997)

In March 1996 the Minister for Enterprise and Employment (Forfàs) set up the Information Society Steering Committee to produce a national strategy in order to prepare Ireland for the Information Society. It recognised *"the speed and scale of the revolution now underway"* and highlighted the need that *"Ireland responds with urgency to the challenges that lie ahead"*.

The Steering Committee Report entitled "Information Society Ireland: Strategy for Action" was published in March 1997. It examined ways in which information and communications technologies might be put in place to transform Ireland's economy and society over the coming years.

The report presented a series of objectives and strategies to overcome the barriers together with a series of specific actions to implement them such as:

- ensure a strong and independent regulatory office for the telecommunications sector;
- provide Irish businesses and households with low cost access to broadband services including through the offering of a cable franchise in 1997;
- develop a centre of excellence for the creation, provision and export of content for the Information Society and encourage similar regional centres;
- develop Dublin as a flagship Irish "virtual city" providing citizens and visitors with on-line access to information and services using ICT;
- establish a National Learning Initiative linked to two flagship projects: "Cyber-Schools" to link schools and libraries to the internet with ISDN and "Knowledge Resource Centres" to facilitate the provision of information and introduction of ICT;
- create a legal framework for the Information Society including the amendment of intellectual property rights legislation and introduction of legislation on areas inadequately covered such as electronic commerce.

One of the principal recommendations contained in report was the establishment of an Information Society Commission as an advisory body comprising key experts from the public and private bodies. Also, the Government decided to create a public Inter-departmental Implementation Group on Information Society and a Development Team in charge of preparing a "framework for action" followed by an Action plan. Representatives from all ministries and Central Statistics Office formed this Group of 17 people, which was chaired by the Prime Minister.

## 1.2 Proposal a framework for Action (December 1998)

In December 1998, further to the first report of Information Society Commission (see below) and following recommendations from other reports (e.g. Report of the Advisory Committee on Telecommunications - <http://act.iol.ie/>; The National Competitiveness Council's "Statement on Telecommunications: a Key Factor in Electronic Commerce and Competitiveness" of November 1998 - <http://www.forfas.ie/report/ncctelecom.htm>; Reports of the Irish Business and Employers Confederation on telecommunications and Governmental policies - <http://www.ibec.ie>) the Inter-Departmental Implementation Group on the Information Society published a proposal for an action plan under the title "Implementing the Information Society: A Framework for Action" (available at - <http://www.irlgov.ie/taoiseach/publication/infosocactionplan/infosocframework.htm>).



The report contained two parts:

a) a proposed Action Plan comprising the following headings:

- telecommunications infrastructure
- development of electronic commerce and business opportunities,
- enabling measures,
- legislative measures,
- ICTs and delivery of public services,
- support areas where action is needed
- taking the work forward.

The objective of the Action Plan was to present a comprehensive strategic plan and precise tasks with timeframes, resource requirements and an allocation of responsibility.

b) A commentary on the proposed action plan

The Group recommended that the Government should adopt the proposed Action Plan and assign the various tasks suggested. Also, it considered that it would be important that the implementation of this plan be subject to stringent monitoring and reporting, whilst at the same time being sufficiently capable of adaptation and updating as would be necessary in the light of the constantly developing Information Society environment. This should be a key responsibility of the Implementation Group and the Development Team.

### **1.3 Establishment of the Information Society Commission (May 1997)**

In May 1997, following the recommendation of the Steering Committee Report, the Prime Minister "Taoiseach" appointed the Information Society Commission, as an advisory body to the Irish Government (<http://www.isc.ie>), for an initial three-year period until end-2000.



The main functions of the commission are :

- Provide advice and guidance to the Government on what policies should be adopted to ensure that Ireland develops to its full potential as an Information Society.
- Conduct research and benchmark Ireland against other countries in its development as an Information Society (see report "Benchmarking Ireland in the Information Society " published in May 2000).
- Promote awareness and understanding of the opportunities presented by ICT to the general public and the business community.

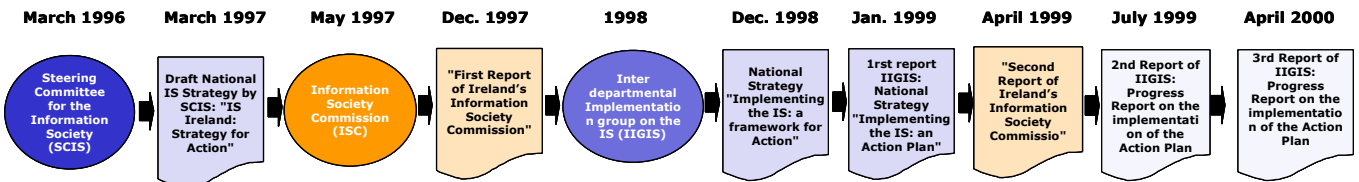
The commission is chaired by Vivienne Jupp, a Senior Partner with Andersen Consulting while its membership is comprised of 10 key people from the private and public sector. The Information Society Commission reports directly to the Taoiseach.

The IS Commission has established 8 Advisory Groups on the following topics: Connected Communities, Connected Government, Lifelong Learning, Networked Economy, Infrastructure, Networked Economy, Legal Issues and IT Access for All. It has also implemented a web site containing extensive resources on Information Society, an electronic discussion group and a monthly e-newsletter.

It has also produced several major reports and publications:

- In December 1997, shortly after its establishment, it released its first report to the government entitled "First Report of Ireland's Information Society Commission". The report sought to give a summary account of important initiatives that had been put in place concerning the transformation of Irish society since March 1997. It also set short-term goals and highlighted areas where urgent action was required (the report can be consulted at <http://www.infosoccomm.ie/reports/report1/>).
  - In April 1999, the Information Society Commission published its second report to the government, "Second Report of Ireland's Information Society Commission". This followed the same scheme as the first one: an overview of the process of the transformation of Irish society into an Information Society since the first report and suggestions for actions in new key policy areas. (View report at <http://www.infosoccomm.ie/reports/report5/>).
- The IS Commission considered that many of the fundamental building blocks of Ireland's Information Society strategy had been put in place. However, the need for Ireland to step up the pace of preparation was becoming ever more pressing in the three critical areas already identified (the provision of low-cost broadband telecommunications; emerging skills shortages; intellectual property rights) but also in new areas where the Government should focus:
- promoting access to Information Society technologies for the Irish public
  - fostering the e-commerce capability of Irish business.

Ireland's development as an Information Society is now moving into a new phase. The first part of this process has largely been one of education. Awareness of the new technologies is now very high among the general public and the business community. The challenge now is to translate these high awareness levels into widespread adoption of ICT and meaningful e-commerce activity at a speedier rate.



Source: ESIS - ISPO

## 2. Implementing the Information Society in Ireland: An Action Plan

### 2.1 The Irish Action Plan for Information Society (January 1999)

The response of the Government to a range of reports and recommendations, including those of the Information Society Commission of December 1997 and the December 1998 report of the Inter-Departmental Implementation Group (A framework to action) came in January 1999. An Action Plan was published under the title "Implementing the Information Society in Ireland: An Action Plan" (<http://www.irlgov.ie/taoiseach/publication/infosocactionplan/infosoc.htm>).

This paper aimed to provide a comprehensive and co-ordinated approach embracing all the tasks that needed to be addressed.

It identified 5 main areas:

- Telecommunications infrastructure.
- Development of electronic commerce and business opportunities.
- Enabling measures, opening up access to the new technologies for the less privileged.
- Legislative and regulatory measures.
- Modernising the delivery of public services through new technologies.

It announced the measures that the Government would implement for the development of Information Society, including a combination of completely new tasks and tasks that had already been identified as necessary and where, in some instances, action had already commenced. It also indicated the Departments or bodies with responsibility for each action point. Finally, where relevant, it provided a target date for the completion of the action points.

The Inter-Departmental Implementation Group on the Information Society confirmed that it would:

- Assess the resources needed to implement the plan. This has been done: a substantial dedicated fund, - the Information Society Fund - with IRL£30,000,000 (38 million EUR) will be provided in 2000.
- Monitor the progress of the implementation of the action plan through an evaluation mechanism. A "fast track" for applicant initiatives has been put in place.




It is assisted by a Policy Development Team, a small team of officials based in the Department of the Taoiseach.

## **2.2 Progress Reports (July 1999 and April 2000)**

Therefore, since January 1999, two progress reports have been prepared by the Interdepartmental Implementation Group, which provide an update on progress since the Government Action Plan was published: one in July 1999 and one in April 2000.

- "Progress Implementing the Information Society: Second Report of the Inter-Departmental Implementation Group" was prepared on 30th July 1999. Its primary focus is on the resources needed to carry out the Action Plan. In this paper the Government asked the Information Society Commission to *"conclude its assessment of the possibility and merit of providing an e-mail address and Internet access for every citizen"*.
- "Progress Implementing the Information Society: Third Report of the Inter-Departmental Implementation Group" was prepared in April 2000. The Action Plan itself continues to evolve as new opportunities emerge and technologies change. The latest position in respect of previously identified initiatives and additional ones is set out in this Third Report.



	<p>structures.</p> <ul style="list-style-type: none"> <li>• Progress of work concerning the Personal Public Service Number (see below REACH project).</li> <li>• Copyright and Related Bill 2000 enacted in July 2000. Preparation of legislation on data protection.</li> <li>• The Broadcasting Bill is now at committee stage.</li> </ul>
<p><b>Training and R&amp;D</b></p>  	<ul style="list-style-type: none"> <li>• Funding of 102.8 million EUR has been provided (2000-2002) for ICTs in education to provide high speed internet access in every classroom, reduce the pupil - computer ratio and provide ICT training to teachers. Over 5,000 extra high-tech places are being provided in 3rd level education. See Schools IT 2000 programme (<a href="http://www.ncte.ie">http://www.ncte.ie</a>)</li> <li>• The National Development Plan provided an unprecedented 2.48 billion EUR for R&amp;D - an integral element of which is the 711 million EUR Technology Foresight Fund to establish Ireland as a world class location for ICTs and biotechnology (<a href="http://www.forfas.ie/">http://www.forfas.ie/</a>).</li> <li>• Establishment of a Science Foundation Ireland (<a href="http://www.sfi.ie/">http://www.sfi.ie/</a>)</li> <li>• Establishment of MediaLab Europe (MLE) - which will specialise in multimedia, internet &amp; digital industry applications, together with a multimedia village.</li> <li>• The Empower Initiative of County Enterprise Boards has received fund to provide e-business education, training and advice to micro-firms from the new "E-business support fund" (<a href="http://www.empower.ie">http://www.empower.ie</a>).</li> <li>• IT training courses for farmers (<a href="http://www.teagasc.ie">http://www.teagasc.ie</a>) to start in Autumn 2000 (see also IT strategy study of the Department of Agriculture, food and rural development)</li> <li>• Training Networks Programme, including Skillsnet Training Network</li> <li>• Report on Lifelong learning in the Information Society (ISC)</li> </ul>
<p><b>Access</b></p> 	<ul style="list-style-type: none"> <li>• Libraries: Information Society Funding has been invested to increase the number of PCs providing free internet access to the public in local libraries by a factor of 10 ("Public Libraries 2000 National Network, Local Service": <a href="http://www.environment.ie">http://www.environment.ie</a>).</li> <li>• Kiosks are being installed in Social Welfare offices to provide on-line access to the FÁS service and related areas.</li> <li>• "IT Access for all": publication of Information Society Commission recommendations, currently being considered by Ministries.</li> <li>• Support to Community Development Programme</li> <li>• FIT Action Plan: Fast track to Information Technology launched by the Prime Minister in March 1999 , an IT industry-driven initiative which aimed to provide training and full-time employment to 3,500 long-term unemployed people while to address the IT skills shortage. <a href="http://www.fit.ie/">http://www.fit.ie/</a></li> </ul>

## Interactive Service provision



- Jobs Bank: New Electronic Labour Market Internet Service launched in May 2000 by FÁS for jobseekers and employers (<http://www.fas.ie/defaultv.htm>)
- Guidelines on public sector web publication were launched by the Taoiseach in November 1999 and a Webmasters network has been set up.
- Launching of the Land Registry Electronic Access Service in August 1999 (<http://www.landregistry.ie>).
- Start of measures to develop eProcurement and eRecruitment services for the public service
- Start of the "Revenue on-line Service" (on-line filing of tax returns).
- Other interactive/ on-line services being developed include:- a system for driving test applications, a planning information system, and CSO statistical service.
- Government approval will shortly be sought for a model to facilitate the delivery of the ultimate objective of fully integrated public services.
- Creation of a dedicated Information Society Fund of 38 million EUR in 2000 for ICT projects (see below).
- Publication of an "ICT Vision Policy Statement for the Local Government sector" in May 2000 by the Department of Environment and Local government (<http://www.environ.ie/press/ict.htm>).

The Progress report identifies areas where there is now a need to focus on for the future:

- to expedite progress on a number of key initiatives such as REACH, the delivery of Digital TV and the provision of the "Life Events" database (citizen-centred "Life Events" database which will be accessible to all citizens on the web) and the "Business" database.
- to encourage further "content" projects from the full spectrum of Government Departments together
- to focus on raising of awareness
- to sensitise and train public servants at all levels - including senior management.
- to foster e-government development.

At present, E-government appears to be a central concern of the Irish Government. Business commentators have pointed to the poor provision of Government services on-line. The Progress report states that it is urgent the departments and agencies who have not fully engaged with the eGovernment agenda to examine the range of services delivered to the public and to quickly come up with a plan for the delivery of as much as possible of these services electronically. There is a growing pressure from the citizens and business as well as from the EU and other international fora who are now looking at how on-line Government can be delivered. The new model of the REACH project should permit to accelerate progress (see below).

### 2.3 Focus on some initiatives

#### • The Information Society Fund

The Information Society Fund was set up by Government in July 999 for the purpose of "kick-starting" and resourcing projects or initiatives proposed by Government Departments or bodies under their aegis which are consistent with and progress the objectives set out in the Government Action Plan for the Information Society.



All applications for funding from the Information Society Fund must be made by or through a Government Department/Office. An Evaluation Team has been established to assess projects seeking support from the Information Society Fund. A total of 2.66 million EUR was allocated in 1999 for 17 projects spanning numerous Departments and agencies and covering areas such as Infrastructure, enabling measures, legislation, interactive service development, research and awareness. For 2000, the fund is 38 million EUR. In April 2000, over 19 million EUR has been approved.

- **E-Government : the REACH Initiative - Integrating Public Services**

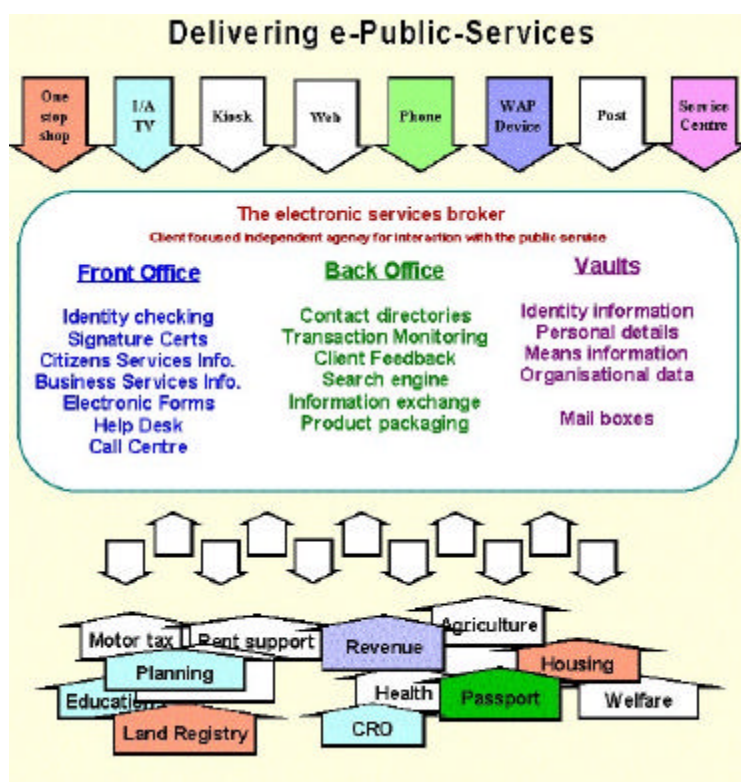
REACH is an framework initiative established by the Government to foster and develop citizen-centred public services. The initiative is to be progressed by a cross-departmental unit (to be set up during the summer 2000) but at present, it is coordinated by the Department of Social Community and Family Affairs (<http://www.reach.ie/>).

The specific objectives of REACH are to:

- Improve services to citizens by developing integrated accessible customer-centred services across the public sector
- Improve the efficiency of administration and delivery of public services
- Improve the effectiveness of social and other Government policies
- facilitate better control of fraud and abuse of publicly funded services

The central projects of REACH are:

- the setting up of an independent electronic gateway entitled "e-broker" to operate as a broker between citizens and public service agencies (<http://www.irlgov.ie/taoiseach/eIreland/eBroker/frmain.htm>).
- To develop the "Personal Public Services Number" (single unique personal identifier to be used in transactions between the citizen and the public service).
- To develop the Public Services Card (PSC) (citizen's secure key to access public services and databases).



**The eBroker model**

(source: Irish Government: <http://www.irlgov.ie/taoiseach/eIreland/eBroker/frmain.htm>)

- **IT Access for All**

The Information Society Commission has published a report on "IT Access for All" which is a follow-up to the consultation paper on the same topic published by the Commission in November 1999. The report asserts that the access to information and communication technology is distributed very unevenly throughout the Irish society, and sets out the major challenges that exist for Ireland in ensuring that everybody has equal access to new technology and to the benefits and opportunities that it can offer. On 21<sup>st</sup> March 2000 the commission published a new paper on "Information Society Commission Urges Strong Action to Ensure IT Access for All". These documents are available on ISC web site (<http://www.isc.ie>). The issue of "e-mail for all" is still under discussion. On 1<sup>st</sup> June 2000, the Information Society Commission has also opened a new Discussion Forum on its website to provide a venue for anyone interested in Information Society topics to discuss them. The Forum is accessible to everyone through the Commission's website. invited to join in existing discussion threads or start new threads on any Information Society related topic.

- **Schools IT 2000**

Ireland was lagging significantly behind its European partners in the integration of ICT into first and second-level education. The need to integrate technology into teaching and learning right across the curriculum has led the Ministry of Education and Science to address this issue in launching the IT Schools 2000 programme in 1997, in the framework of the governmental Action Programme for the New Millennium. The programme is implemented by the National Centre for Technology in Education (NCTE - <http://www.ncte.ie>).

IT2000 set a series of 3-year goals, each of which has already been achieved or exceeded. Today, for example, every school has been given an Internet connection. In November 1999, in response to the success of the programme to date, The Minister of Education decided to allow a major new funding of IRL£81 million to run from 2000-2002 for a new and greatly expanded programme. It will be used to ensure that:

- Every classroom will be connected to the Net with high-speed access.
- The ratio of computers to pupils will be significantly reduced.
- Comprehensive ICT training will be available to teachers.
- Ireland will use technology to implement a very advanced programme of curriculum support.



IT Schools 2000 comprises a number of important sub-initiatives such as the "School Integration Project", "Teaching Skills Initiative", "Technology Integration", "Wired for Learning Project". IT Schools 2000 works in closed cooperation with the Network for Irish Schools ScoilNet (<http://www.scoilnet.ie>). A key objective of Schools IT 2000 is also to bring about a national partnership involving schools, parents, local communities, third-level colleges together with public and private sector organisations (e.g. Eircom, IBM, Intel).



# Italy



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## Introduction

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Italy has delayed the widespread introduction of ICT for several reasons, among which cultural brakes, a certain lack of attention from the policy makers, some conservatism in the productive system and high telephone tariffs. This trend is in the process of being significantly reversed. In fact, since few years, several bottlenecks have been or are being eliminated and although Italy is still lagging behind other European countries - Italy is ranked 23<sup>rd</sup> in the world by the 2000 Information Society Index (IDC/World Times Survey) and 12<sup>th</sup> in the EU - the country is rapidly catching up.

The Internet is exploding and Italians have become "heavy users" of the Internet and deeply involved in the new economy. There are now 10.7 million Italians with Internet access, i.e. more than 18% of the population, according to the latest report from Between ICT Brokers. This figure is estimated growing to 15.3 million Italians online in a year's time. Some recent surveys shows also a increasingly widespread use of the Internet by Italian companies. If electronic commerce applications are still in their early stages, around 75% Italian companies having between 100 and 500 employees are connected to the Internet. By the year 2003, it is expected that all Italian firms will be connected and that e-business will boom. There are 12.8 Internet Hosts by DNS domains per 1000 inhabitants in 2000 versus 6.6 at the end of 1998. Also, we can remind that Italy has a penetration of mobile phones over 53%, one of the highest in the world ,which shows that the Italian can be very quick in catching up with new technologies if they see an interest.

Factors fuelling this development are numerous. The liberalisation of the Italian communications sector has had a profound impact on both the demand and supply sides. Also, government policy has progressively focused on Information Society. After a period of individual activities initiated by ministries and promotional activities carried out by the Information Society Forum, the Government decided to move towards a more coordinated approach. In 1999, the Government decided to commit itself in this strategic sector, with the aim of formulating a unified plan of action and promoting new modes of co-ordination and collaboration between public and private sectors.

Therefore, in February 1999, the Prime Minister Massimo D'Alema pointed out that *"the development of the information society is a major goal of the Italian Government"*. He issued a important decree, which instituted three structures with the task to define the Italian Action Plan for the Information Society: the Information Society Forum, the Inter-departmental Study and Working Group and the Committee of Ministers. 1999 have been a very active year, including financial planning exercise in 1999 in order to prepare an action plan. However, publication of this Action plan has been postponed due to governmental changes. Finally, with the second Government of Giuliano Amato in April 2000, the process has come to an ambitious "Action plan for the New Economy" published in June 2000, and presented as the Italian contribution of the eEurope initiative. This action plan aims to enable Italy to keep pace with international competition and integrate the new economy into the Italian economy and society, placing special emphasis on disadvantaged sectors and southern Italy.

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# 1. The Evolution of IS in Italy: a public policy perspective

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## 1.1 The Information Society Forum (1996) and the first strategic document (1997)

In 1995, the Prime Minister's office presented a first policy paper for the ICT sector entitled: "A Government Agenda for Promoting the Development of the Information Society". This policy paper followed the guidelines and principles agreed at an international level, within both the European Union and the G7.

In September 1996, the Presidency of the Council of Ministers established the Information Society Forum (Forum per la Società dell'Informazione).



The Forum included representatives of the Ministries of Communications, Industry, Public Education, University and Research, Labour and Foreign Affairs. The goal of this working group was to promote initiatives for the development of the Information Society in Italy and to support the creation of a favourable regulatory framework in areas such as telecommunication industry development, electronic commerce, labour, copyright legislation, universal service and equal access measures.

In June 1997 it presented a document "Promotion of Information Society Development in Italy: a reference scheme" ("Promuovere lo sviluppo della Società dell'Informazione in Italia: uno schema di riferimento") providing general guidelines for public policy actions and stimulating the activities of Ministries.

This document stated the following as main objectives:

- To support telecoms market liberalisation and introduce competitive processes.
- To promote the development and competitiveness of innovative communication networks, related services and the Italian ICT industry.
- To encourage demand growth and increasing ICT penetration.
- To create a favourable regulatory and industrial environment for the creation of content.
- To improve and innovate in the diffusion of public services.
- To maximise positive impacts on economic and employment growth in the relevant sectors.
- To encourage localisation of new production activities in Southern Italy and less developed areas.
- To direct new services and infrastructures development to respond to the needs of different economic sectors and especially SMEs.

General Guidelines for the activities of different Ministries were also outlined so as to help them achieve these goals.





## 1.2 Activities of Ministries



Despite the existence of the Information Society Forum and its reference scheme document, Italian policy has been rather scattered. Numerous initiatives have been conducted by Ministries and the public administration in their respective domains. One exception is public administration thanks to the co-ordinating role of the Authority for IT in the Public Administration (AIPA).



An interdepartmental study was carried out by the Prime Minister's Office in 1999 which gave an overview of actions implemented between 1995 and 1999 ([http://www.palazzochigi.it/fsi/doc\\_piano/ministeri\\_e\\_documenti\\_ita.html#i](http://www.palazzochigi.it/fsi/doc_piano/ministeri_e_documenti_ita.html#i)).

A summary of achievements is presented below:

Ministry	Achievements
<b>Ministry of Public administration</b>	<ul style="list-style-type: none"> <li>• <b>Digital Signature:</b> legal conditions set in a 1997 Presidential Decree, followed by a later Decree on technical norms.</li> <li>• <b>The IT Registry:</b> regulation on IT automation of the public administration registry approved in 1998.</li> <li>• <b>The Computerised Identity Card:</b> launch of an ambitious and innovative project enabling each person with an electronic ID card to be 'recognised' by a public administration information system.</li> <li>• <b>Tele-working:</b> regulation on teleworking approved by the Council of Ministers. Call for proposals launched.</li> <li>• <b>The Single Service Point for Productive Activities:</b> approved in 1998, it aims to perform a dual function: simplification of procedures with a substantial reduction in paperwork for companies; information, advice and support for companies planning to begin industrial activity.</li> <li>• <b>The Extraordinary Training Plan</b> for civil servants</li> </ul>
<b>Ministry of Treasury, Budget and Economic programming</b>	<ul style="list-style-type: none"> <li>• <b>Electronic Payment Orders:</b> as of 18 January, 1999, all payment orders issued by public administrations are sent to the Bank of Italy in electronic form.</li> <li>• <b>Dematerialisation of Government Debt</b> since 1998.</li> <li>• <b>Protocol of Understanding with IBM and CONFOCOMMERCIO</b> signed in April 1999, to study an infrastructure and a series of services concerning electronic commerce in the 'Mezzogiorno'.</li> <li>• <b>Economic Information:</b> comprehensive web site launched in 1997 (<a href="http://www.tesoro.it">www.tesoro.it</a>)</li> <li>• Activities to Increase the <b>Transparency and Efficiency</b> of Administrative Work</li> <li>• <b>E-mail plan for services</b> (2,000 user points by December 1999).</li> </ul>
<b>Ministry of Finance</b>	<ul style="list-style-type: none"> <li>• <b>The Electronic Tax Return Filing Service:</b> one of the main features of recent tax reform</li> <li>• Start of the "<b>Electronic IRS</b>" (Inland/Internal Revenue Service - IRS)</li> <li>• <b>Taxpayer Assistance With IT Tools</b> : Internet (<a href="http://www.finanze.it">www.finanze.it</a>), Televideo, self-service terminals, automatic telephone service, automatic fax.</li> </ul>

<p><b>Ministry of education</b></p> <p>Programma di sviluppo delle tecnologie didattiche</p>   	<ul style="list-style-type: none"> <li>• <b>The Educational Technologies Development Programme 1997-2000</b> (Programma di sviluppo delle tecnologie didattiche - PSTD) is a major programme. It aims to equip schools with computers and connect them to the Internet and to introduce multimedia technologies. 310 million EUR were invested during the first three years. In 1998 it funded 5,000 projects to improve the ICT skills of teachers and about 4,000 multimedia school projects. Collaboration has also been established with numerous public institutions and private firms. (<a href="http://www.istruzione.it/argomenti/multimedialita/multimed.htm">http://www.istruzione.it/argomenti/multimedialita/multimed.htm</a>)</li> <li>• <b>UNIverso</b> : Internet based multimedia campaign project developed in November 1998 to inform and support secondary school students before they enter university (November 1998 <a href="http://www.universo.murst.it">http://www.universo.murst.it</a>)</li> <li>• <b>Internet at school - Internet Scuola</b>: launched in 1995 by the Ministry of Education and ENEA, the Italian National Agency for New Technology, Energy and the Environment. (<a href="http://www.quipo.it/internetscuola/">http://www.quipo.it/internetscuola/</a>).</li> <li>• <b>PICTO programme</b> : integrated programme on managing technological and organisation change (<a href="http://195.223.47.198/">http://195.223.47.198/</a>)</li> </ul>
<p><b>Ministry of communications</b></p> 	<ul style="list-style-type: none"> <li>• <b>Regulatory Framework</b>: the ministry focused on adjusting the regulatory situation to the liberalisation of TLC, in compliance with community directives. Several laws and decrees were issued. In particular the law 249 of 1997 which set out the general principles for liberalisation and established the Italian Communications Regulatory Authority (Autorità per le Garanzie nelle Comunicazioni <a href="http://www.agcom.it/">http://www.agcom.it/</a>). The Presidential Decree 319/97 constitutes the basic text for new rules concerning TLC services. Other decrees have been issued concerning the granting of licences and the privatisation of the incumbent operator, Telecom Italia in 1999.</li> <li>• <b>The reduction in Internet access tariffs was promoted by the Ministry</b>. Relative costs are among the lowest in Europe, and this has had a very positive effect in terms of the number of subscribers and an increase in average linkage time to Internet. Since 1999, this policy has been conducted by the Italian Communications Regulatory Authority</li> <li>• <b>Regulatory Plan and Internet Access Promotion</b></li> <li>• <b>Work on the New Third Generation Mobile System - UMTS</b></li> <li>• <b>Permanent Forum on Communications</b>: The law 249/97 established a permanent forum on communications within the Ministry of Communications (<a href="http://194.243.58.133/">http://194.243.58.133/</a>). The Forum is made up of experts and operators. Its role is to conduct relevant studies and make proposals upon the results.</li> <li>• <b>Promotion of New Technologies and Systems</b> (<a href="http://www.comunicazioni.it/">http://www.comunicazioni.it/</a>)</li> </ul>

<p><b>Ministry of Industry, commerce and crafts</b></p> 	<ul style="list-style-type: none"> <li>• Policy papers <ul style="list-style-type: none"> <li>- First policy paper for the ICT sector in 1995: "A Government Agenda for Promoting the Development of the Information Society".</li> <li>- "Industrial Policy guidelines in IT and TLC" as input on the part of the ministry to the IS Forum in April 1997 (<a href="http://www.minindustria.it/Osservatorio/pol_industria_eng.html">http://www.minindustria.it/Osservatorio/pol_industria_eng.html</a>):</li> <li>- 1998: contribution to the paper "Infrastructures and Services for the Information Society" in the work fostered by the Ministry of Public Works (march 1998 - <a href="http://www.minindustria.it/Osservatorio/soc_inf.html">http://www.minindustria.it/Osservatorio/soc_inf.html</a>).</li> </ul> </li> <li>• In 1998, a legislative decree gave the Ministry of Industry the responsibility of promoting the introduction and use of electronic commerce in Italy. Discussion among interested parties under the supervision of the ministry led to the paper "<b>Policy Indications for Electronic Commerce</b>" presented by Minister Bersani in July 1998 (<a href="http://www.minindustria.it/Osservatorio/pol_ce_eng.html">http://www.minindustria.it/Osservatorio/pol_ce_eng.html</a>)</li> <li>• <b>Electronic commerce guide</b> (<a href="http://www.minindustria.it/Osservatorio/documenti.html">http://www.minindustria.it/Osservatorio/documenti.html</a>)</li> <li>• Creation of the <b>Permanent Observatory for Electronic Commerce</b> by a ministerial decree of 27 November 1998 (<a href="http://www.minindustria.it/Osservatorio/index.html">http://www.minindustria.it/Osservatorio/index.html</a>). It is an instrument for monitoring the evolution of the economic and productive system. It also serves to pinpoint constraints and barriers to the use of new technologies by companies (SMEs in particular), public administrations and consumers, promote initiatives to surmount the identified obstacles, and propose both measures and activities, normative and regulatory, for the development and diffusion of electronic trade. Assisted by a committee of experts and with the technical and organisational support of ENEA (<a href="http://www.enea.it">http://www.enea.it</a>), this observatory is able to interface with all the subjects, institutions and organisations operating in this sector on both the national and international level.</li> </ul>
<p><b>Ministry of Labour and Social Security</b></p> 	<ul style="list-style-type: none"> <li>• Working group on <b>teleworking</b>.</li> <li>• <b>IT and vocational training</b>: institutional dialogue engaged by the Ministry of Labour, along with the Regions and other ministries; definition of guidelines for the upcoming programming of structural funds</li> <li>• <b>Labour information system</b>: started in 1995, it is the most important and advanced project launched by the Ministry and the Regions. It aims at implementing a single and integrated information system to provide social services (job orientation, training, placement, twinning of labour supply and demand, labour market observatory).</li> <li>• <b>ERGONLINE project</b>: implementation of a new model of employment related to IT services.</li> <li>• <b>FAD project</b> (Remote Training): creation of a network of regional services for remote training.</li> </ul>

<p><b>Ministry of culture</b></p> 	<ul style="list-style-type: none"> <li>• As a "content provider", implementation of the ministry web site (<a href="http://www.beniculturali.it">http://www.beniculturali.it</a>) and production of 642 off-line products (e.g. CD-ROM, videodisks, etc.) as of May 1998.</li> <li>• <b>Internet/Intranet Project</b> for the Ministry</li> <li>• <b>Ministry's Private Virtual Network (PVN)</b> carries all in-house traffic as well as many of the administrative procedures, such as the electronic protocol and file management, personnel management and access to cultural and heritage databanks.</li> <li>• <b>SITAP project:</b> Territory, Environment and Landscape Information System</li> <li>• <b>National Library Service (SBN):</b> computerisation of the largest public network of libraries in Italy and launch of "<b>Media-Library 2000 Action Plan</b>" to increase the number of media-libraries in southern and insular Italy.</li> <li>• <b>CREMISI project (CREazione di Mediateche per Introdurre la Società dell'Informazione):</b> Multimedia classrooms in public libraries for distance learning.</li> </ul>
<p><b>Ministry for universities and scientific Research - MURST</b></p>	<ul style="list-style-type: none"> <li>• The <b>Special Fund for Applied Research</b> (created by law 1089/68, and redefined by law 46/82) constitutes the main instrument available to support both research and industrial innovation in Italy. During the period 1995-1998, it funded more than 2,000 projects for a total cost of 2 billion EUR. Some of these sub-programmes were related to ICT: Micro-electronics; Technologies for Bio-electronics of 1989. Remote Health Care / Tele-medicine (49 million EUR).</li> <li>• Other R&amp;D programmes have been launched such as in 1995 "Multi-media Networks towards UTMS".</li> <li>• Special Instruments for Economically Depressed Areas (Mezzogiorno)</li> <li>• The global programme "Support to Innovation" (co-financed by Structural funds) included several IT activities e.g. the "Calabria IT Plan" and "Sicily IT" (<a href="http://www.murst.it">http://www.murst.it</a>).</li> </ul>
<p><b>Authority for IT in the Public Administration - AIPA</b></p> 	<p>AIPA (Autorità Informatica per la Pubblica Amministrazione) coordinates and fosters technological innovation in the Italian public administration. In addition to providing guidance and support to individual administrations, AIPA plans and implements numerous cross-sectoral projects involving numerous administrations.</p> <p><b>The Unified Public Administration Network</b> is the most important project, the aim of which is to provide full network connectivity, domain interoperability, application sharing programmes and co-operation among the administration's IT systems in order to improve the quality and cost effectiveness of public services.</p>

Besides the Ministries, local and regional authorities and civic networks have been active participants in the development and promotion of the Information Society through regional IS actions plans and initiatives. One can cite the regions of Piemonte (<http://www.regione.piemonte.it>), Calabria (<http://www.telcal.it/>), Emilia-Romagna (<http://www.ervet.it/>), Toscana (<http://www.regione.toscana.it/>) and Veneto (<http://www.venetinnova.it>).



The Government has also worked in close co-operation with the associative and private sector, especially concerning Electronic Commerce development (Unions and Confindustria, Italian Bank association).

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## 2. The Italian Action Plan for the New Economy

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When Massimo D'Alema became Prime Minister in October 1998, he stated that the development of the Information Society was a major goal of the Government.

Il Governo ritiene  
lo sviluppo della Società dell'Informazione  
un obiettivo fondamentale  
della propria  
azione

On the basis of the activities, which were initiated by numerous ministries since 1996, the Government decided to formulate a unified plan of action and to promote better co-ordination between public bodies as well as to favour collaboration with private actors.

### 2.1 A New Institutional framework

On February 5, 1999, the Prime Minister established by decree a new organisational structure composed of three bodies, all of which are to report to the Prime Minister's Office, which therefore plays a central role. They were given the assignment of drawing up an Action Plan for the development of the Information society in Italy:

These three bodies are:

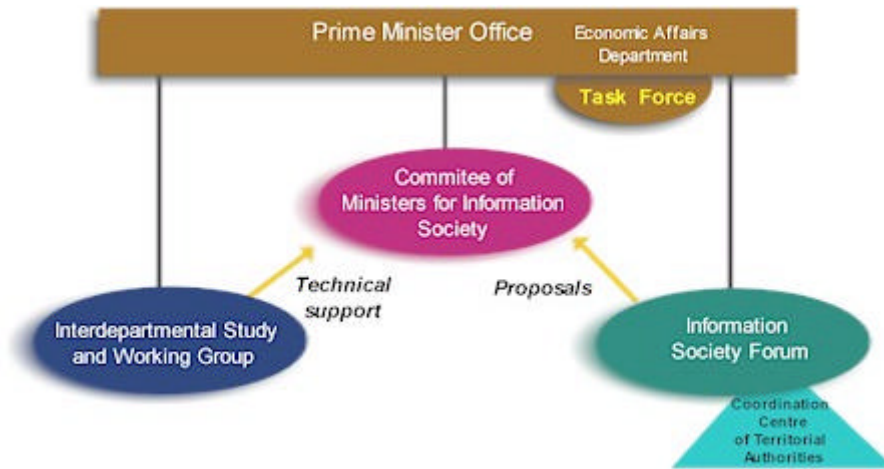
- A new body which is the "**Committee of Ministers for the Information Society**". It is assigned to guarantee the impetus of Government action, to co-ordinate the actions of the various departments in the development of the Information Society, to define the reference framework for government policy as regards the Information Society and to approve the future action plan. It is composed of the Prime Minister, deputy Prime Minister, under-secretaries and Ministers.
- The existing "**Information Society Forum**" is also a part of the scheme. Its main task is to make proposals to the Committee of Ministers but also to promote initiatives for the development of Information Society. It is chaired by the Prime Minister and comprises representatives of public institutions (including regions, provinces and municipalities), social partners, research institutes, universities and private citizens.

In order to prepare proposals, the Forum has created 5 inter-operating working groups: Network infrastructures and technology; Employment and new forms of work; IT literacy, training, ICT for research and education; services and content; Public administration and online services.

- Another new structure is the "**Inter-Departmental Study and Working Group**". It provides technical support to the Committee of Ministers and co-ordinates the activities of the individual ministries, departments and competent public administrations. It is composed of representatives from each Ministry.

Moreover, the **Prime Minister's permanent Task Force** was created in March 1999 in order to fully support the 3 bodies and ensure Italian participation in international organisations. This task force edits the Internet Site on Information Society developments (<http://www.palazzochigi.it/fsi>) and publishes a newsletter, which is circulated to more than 2,000 subscribers.

**Organisational scheme for Information Society**  
(source ESIS – ISPO)



Also, in April 1999, the Government called upon the territorial authorities to co-operate actively in the endeavours of the Information Society Forum. In fact, the Government considered that the active participation of regional and local authorities was highly desirable and furthermore, one of its priorities is that Information Society should develop at the local level. This is especially true inasmuch as they have already implemented leading edge projects in this sector.

**Centro**  
di **Coordinamento**  
degli **Enti Territoriali**

Therefore, it was decided to institute a structure in Turin - co-ordinated by the Piedmont Region, the Province of Turin and the Municipality of Turin: the Co-ordination Centre for Territorial Authorities.

Its purpose is to create a sort of Forum network structure, or, in any case, decentralised fora for local discussion. Therefore, this structure contributes to the Forum's work (<http://www.etx.it>).

## 2.2 Preparation of the Action plan

Several activities took place in 1999 and during the beginning of 2000 in order to prepare the Information Society Action Plan.

- A National Conference "Towards the Italian Action Plan for the Information Society" took place in June 1999. Information and inspiration were gained during the course of the conference. Important interventions and fruitful debate complemented the documents presented by the Forum's working groups.
- In September 1999, an "Itinerant Conference" took place in various Italian cities (Milan, Trieste, Bologna, Palermo, Naples). In each city, a topic corresponding to those of a working group was discussed. A 6<sup>th</sup> topic has been added "Territorial Administrations, Local Authorities and Information Society" following the creation of the Co-ordination Centre for Territorial Authorities. Six hundred people took part and they made a significant contribution to the documents presented by the co-ordinators. After an introduction by local authorities, contributions to the debate were made by representatives from public administration, the business world, trade unions, universities, associations and citizens.

- Also, the Economics and Finance Programme Document (EFPD, Budget Law and Financial Law) for the period 2000-2003 was approved in July 1999. The EFPD for the first time contains an important chapter on the Information Society. The proposed interventions regard three main areas: diffusion of information and digital culture, development of the use of ICT and networks and the promotion of services, contents and research ([http://www.palazzochigi.it/fsi/eng/dpef\\_eng.html](http://www.palazzochigi.it/fsi/eng/dpef_eng.html)).
- The Budget for the year 2000 (approved by Parliament on 23 December 1999) allocates important financial resources for the development of the Information Society. The accompanying report states that *"new technologies are a fundamental factor for economic, human and social development because they contribute to the development of production, work, commerce and education"*. (see <http://www.palazzochigi.it/fsi/eng/info/Finanziaria2000eng.html>).
- In December 1999, the Council of Ministers appointed Senator Passigli as Under-secretary for Technological Innovation and Internet. His priorities are "education and training of the young", "the development and regulation of e-commerce" and "Internet regulation and Internet costs". This nomination of a "Minister for Internet" is an important signal of the Italian Government's commitment, as it recognises the strategic value of ICT as essential for economic development. It also marks a fundamental institutional step towards promoting, developing and improving ICT access, service and use in the country.
- On June 16 2000, the Information Society Forum published its report on the development of the Information Society in Italy. It was presented as a contribution to the Action Plan (see after) as well as a contribution to the eEurope initiative.

Rapporto sullo Sviluppo della Società dell'Informazione  
  
 Un progetto per l'Italia e l'Europa, un contributo per la comunità internazionale

The Report published on-line contains eight chapters:  
 ([http://www.palazzochigi.it/fsi/doc\\_piano/index.htm](http://www.palazzochigi.it/fsi/doc_piano/index.htm)).

- Chapter 1: Global dynamics of the Information Society and a summarised account of the Forum's activities.
- Chapter 2: Human capital and knowledge with particular reference to the role of schools and universities and research in the training of a new generation in the digital era.
- Chapter 3: Employment, firms and work with specific references to production activities such as electronic commerce.
- Chapter 4: Logistic infrastructures and the impact of new technology on the manufacturing sector.
- Chapter 5: The role of the territory in the development of the Information Society.
- Chapter 6: TLC infrastructure sector and new IT.
- Chapter 7: Services and contents, in particular modifications to the working culture of the Information Society.
- Chapter 8: Technological changes in public administration as a decisive factor in promoting innovation in the public and private sector.

### 2.3 Launch of the "Action Plan for the New Economy" (April 2000)

The creation of the new Government delayed the presentation of the Action Plan for the new Economy ("Piano d'azione per la nuova economia"). The appointment of a Junior Minister for Technological Innovation, Senator Stefano Passigli, the publication of the eEurope document, the on-going work of the Information Society Forum and the nomination of a new Prime Minister, D'Amato, have prompted the decision to introduce the Action Plan along with EC initiatives.

- **General presentation**

The Government's Action Plan for the New Economy offers measures to facilitate and accelerate the introduction of new ICT in the Italian economy, setting specific objectives to be achieved by the end of 2001.

A special emphasis is put on disadvantaged sectors and southern Italy. ([http://www.palazzochigi.it/approfondimenti\\_amato/neweconomy/rapporto\\_integrale.html](http://www.palazzochigi.it/approfondimenti_amato/neweconomy/rapporto_integrale.html))

The Government considers that most of the legislative instruments needed to reach these objectives are already in place. It means that no new laws are necessary. Also, public financing will play a secondary role (new and additional resources will be generated by the allocation of UMTS licenses but will not exceed 10% of such receipts over the multi-year period). The Government considers that the trends in the development and adoption of new ICT are largely spontaneous and decentralised. Public intervention will be used to accelerate and facilitate the spontaneous action of the market - encouraging the investment of private resources in a competitive environment - and to stimulate interaction between firms, workers, universities, non-profit organisations and local authorities.

Therefore, the action of the Government will focus on 4 principles:

1. Encouraging co-operation and links among all participants (firms, financial markets, universities, non-profit organisations, workers, citizens, government).
2. Supporting research, education and promotion using flexible, existing tools (minimum use of laws, enhancement of co-ordination, promotional and co-financing arrangements).
3. Fostering competition in the ICT sector.
4. Implementing training and social inclusion policies for southern Italy.

There are four areas of intervention:

- **Human capital:** training, education, research, development, employment and social inclusion
- **e-government:** government services
- **e-commerce:** co-ordination, rules and procedures
- **Infrastructure, competition and access,** beginning with the bid process for the allocation of frequencies for UMTS mobile telephony



- **Area 1: Human Capital**

The main investment to be made is in human capital. Actions in this field will involve enterprises, development, employment, social inclusion, local government and citizens, universities and schools.

There will be two types of intervention:

- Heavy investment in schools and universities, focusing on equipment and training.
- Soft investment to support instruments with a key role in disseminating knowledge and enriching Italy's stock of human capital.

For the first category, the Government has defined quantitative objectives to be reached in 2001:

- 15 laboratories and university courses in economics and information and communication technology.
- 5 university-based centres of excellence devoted to ICT.
- 40 public multimedia centres for training and access to ICT. They will remain open during evening hours.
- 1 computer for every 25 students at the primary school level.
- 1 computer for every 10 students at the secondary school level.
- 900,000 hours of training for teachers, organised at the regional level.
- Professional ICT training for 150,000 workers, with 1,000 new trainers;
- Free training courses for the unemployed in southern Italy;

One important objective of these efforts is to increase the number of workers with specialised new economy skills. The shortfall is estimated at 60-80,000 persons.

For the other category, the objectives are the following:

- Facilitating the exchange of university researchers and faculty with firms, and vice-versa.
- Fostering research and technology diffusion during the start-up phase of new enterprises.
- Enhancing co-ordination between public and private efforts in information technology research.
- Supporting the creation of "local district portals" on the Internet to give firms visibility and speed contacts over the network. The objective for 2001 is to establish 12 local portals around the country.
- Activating training programmes for new technologies financed, on the basis of an agreement between the social partners, with firms contributing 0.3% of their payroll earnings bill to continuous training;
- Developing the role of the Nuovo Mercato stock exchange by encouraging new listings.

Line of actions	Measures
<b>1. Exchange of university researchers and faculties with industry</b>	<ul style="list-style-type: none"> <li>• Issue the implementing regulations for Legislative Decree 297/1999 on the secondment.</li> <li>• Transfer of researchers and faculties to firms.</li> <li>• Ensure support for the hiring of young researchers.</li> <li>• Establish study grants for doctoral study.</li> </ul>
<b>2. Encouraging Academic spin-offs</b>	<ul style="list-style-type: none"> <li>• Ensure rapid implementation of the fund for financing industrial research, pre-competitive development and the diffusion of technology during the start-up phase of high-technology enterprises.</li> <li>• Provide additional support to academic spin-offs during the production launch phase.</li> </ul>
<b>3. Co-ordinating public and private research in ICT</b>	<ul style="list-style-type: none"> <li>• Ensure effective co-ordination between universities, research bodies and firms in the ICT sector on the basis of the Legislative Decree 297/1999.</li> </ul>
<b>4. Training programmes in ICT in co-operation with social partners</b>	<ul style="list-style-type: none"> <li>• Concerted arrangements with social partners on using a part of the fund formed by the contribution of 0.3% by firms of the payroll earnings bill to finance training courses in ICT.</li> <li>• The programme will begin with a priority initiative to train at least 1,000 trainers. Assuming that one-sixth of the 0.30% is devoted to this programme, each year it would be possible to finance 3 million hours of training involving some 150,000 participants.</li> <li>• European Structural Fund resources can be redirected towards ICT.</li> </ul>
<b>5. Training and social inclusion of the unemployed and workers in the South</b>	<p>Launch of 2 free training programmes:</p> <ul style="list-style-type: none"> <li>• One for young unemployed persons in southern Italy, focusing on new technology literacy: computer skills and English (103 million EUR).</li> <li>• One for "knowledge" workers and unemployed persons in southern Italy, in order to increase employment in the high-skill careers of the new economy.</li> <li>• European Structural Fund resources can be redirected towards ICT in this case as well.</li> </ul>
<b>6. Enhancement of the role of the Nuovo Mercato and reform of bankruptcy law</b>	<ul style="list-style-type: none"> <li>• Measures to increase the number of listed companies in co-operation with Borsa SpA from 20 in 2001 to 50 in 2001 and 2002.</li> <li>• To create conditions that encourage the establishment of high-risk start-ups.</li> </ul>
<b>7. Dissemination of best practice through local sectoral portals and business incubators</b>	<p>Disseminating and supporting best practice in local portals at the district level (the Prato model: public-private enterprises) and incubators for multimedia companies (Milano Nord model or private companies, extended to the national level): 40 local portals in 2001 (80,000 users), 100 in 2001 and 2002 (200,000 users) for a budget of 103 million EUR in 2001 and 2002).</p>
<b>8. Culture</b>	<ul style="list-style-type: none"> <li>• Creation of a cultural portal (already at an advanced stage).</li> <li>• Reinforcement of the National Library Service to link libraries and multimedia training centres via a network.</li> <li>• Reinforcement of the Mediateche 2000 programme</li> </ul>

<b>9. Universities</b>	<ul style="list-style-type: none"> <li>• Co-financing for university courses in economics and information technology (15 million EUR in 2001 and in 2002).</li> <li>• Favouring the exchange of university researchers with industry and the development of academic spin-offs;</li> <li>• Promotion of centres of excellence dedicated to ICT: 5 in 2001, 10 in 2001 and 2002.</li> <li>• Support for basic research in ICT.</li> </ul>
<b>10. Schools</b>	Reinforcement and extension for 3 years of the 1997-2000 programme for the dissemination of computers and teaching technologies. In 2001 and 2002, the programme will bring the level of computer penetration up to the European average. (See details below.)
<b>11. Diffusion of computers</b>	<p>Launch of measures to increase computer access among students and employees, e.g. incentive measures already contained in the accompanying measures to the Finance Law for 2000.</p> <p>Current market trends will see the sale of about 2.5 million computers in 2001, including 700,000 to households.</p> <p>The incentive measures already adopted are expected to increase the number of computers available to students and workers by about 20%.</p>

### Objectives for schools in the framework of the Schools programme 1997-2000 and 2001-2003

The on-going programme (1997-2000) has already increased the number of computers in schools tenfold, achieving an average ratio of 1 computer for every 35 pupils at the elementary school level (compared with 1/500 in 1997) and 1 for every 15 students at the secondary school level (compared with 1/50 in 1997). 61% of all schools / universities are connected to the Internet. The gap with the rest of Europe is closing fast.

The extension of the initiative for 2001-2003 will involve both public and private funding. Wired schools will be open for use outside normal school hours as training laboratories for the public.



Puntoit, the Italian Association, which promotes the adoption and use of the Internet in all aspects of Italian life, will play a key role in this process (<http://www.puntoit.org>).

### Equipment and connection of schools

Objectives	2001	2001+ 2002	Costs in 2001 and 2002
Computers in primary and lower secondary schools with a PC/student ratio of:	1/25	1/15	232 million EUR
Computers in upper secondary schools with a PC/student ratio of:	1/10	1/10	62 million EUR
Number of schools with an Internet connection	all	All	62 million EUR
Internal wiring of schools	2,000	5,000	258 million EUR
<b>Total</b>			<b>614 million EUR</b>



## ICT training for school teachers (superintendencies and regions)

Objectives	2001	2001+2002	Total investment in 2001 and 2002
Training hours*	900,000	1,800,000	
Number of staff trained	45,000	90,000	140 million EUR
Regions involved	all	all	

## PC for students "PC per gli studenti"



On July 14, 2000, the Prime Minister together with the Ministry of Education and with support from the ABI (Italian Banks' Association) has launched the "PC for students" programme."

As part of this programme, students in the first year of secondary school will be able to buy a discounted PC at a special zero interest finance rate. ([http://www.palazzochigi.it/fsi/ita/computer\\_x\\_studente.htm](http://www.palazzochigi.it/fsi/ita/computer_x_studente.htm)). The programme is an example of a non-guaranteed loan. Given the number of eligible students, the participant banks and the loan conditions (zero interest rate), the initiative has no precedent in Italy.

### • Area 2: E-Government Action Plan (July 2000)



At the beginning of July 2000, the Italian Government approved the action plan for e-government, announced in the general action plan for the new economy. The e-government plan will cost 690 million EUR ([http://195.110.131.6/puntoit/iniziativa/doc/action\\_plan\\_e-governmentsc.ppt](http://195.110.131.6/puntoit/iniziativa/doc/action_plan_e-governmentsc.ppt) and [http://www.palazzochigi.it/fsi/doc\\_piano/palchigi\\_rapp\\_n\\_eweconomy\\_sint.htm](http://www.palazzochigi.it/fsi/doc_piano/palchigi_rapp_n_eweconomy_sint.htm)).

The project aims to offer online governmental information and services to Italian citizens and companies. Much remains to be done. Italy is still spending too little to computerise public administration: 1.29% of public spending instead of a European average of 2.3%. Therefore, 400,000 employees are expected to be trained each year in the use of these services and, within 12 months governmental services should be accessible online.

The key points of the e-government plan are:

- The development of a new portal containing, amongst other things, online application forms, information concerning new laws, laws by decree and job opportunities.
- The creation of an electronic identity card which will offer the possibility of accessing these online services. 1 million of these cards will be issued within 10/12 months it is forecast.
- The use of digital signatures
- The possibility of booking a medical examination directly on line (and pre-paying for it).
- Starting this year, Italian taxpayers will be able to compile their income tax returns and pay taxes online.

The Action plan is conducted by the Ministry of civil service ([http://www.funzionepubblica.it/home/fr\\_innova.html](http://www.funzionepubblica.it/home/fr_innova.html)) in close association with AIPA, the Authority for IT in the Public Administration (Autorità per l'informatica nella Pubblica Amministrazione - <http://www.aipa.it>).



Established in 1993, its tasks are promoting, co-ordinating, planning and controlling the development of information systems within central government organisations and agencies, through their standardisation, interconnection and integration. The main objectives are better services, less cost, better communication and a wider support of the decision-making process within the Government.

- **Area 3: Electronic commerce Action Plan**



The Electronic Commerce Action Plan is to be presented soon. It is being prepared by the Permanent Observatory for Electronic Commerce from the Ministry of Industry (see above).

This Action Plan should embody activities to be undertaken and measures to be adopted concerning electronic commerce.

[http://www.minindustria.it/Osservatorio/progr\\_naz\\_ecom2000.pdf](http://www.minindustria.it/Osservatorio/progr_naz_ecom2000.pdf)

A Committee of Experts has begun a preliminary inquiry and advisory work on a first set of topics, which have been organised into four working groups:

1. Monitoring, reporting and communication:
  - Half yearly reports to the minister and annual report on electronic commerce.
  - Observatory web site (<http://www.minindustria.it/Osservatorio/>).
2. Public administration procedures/transactions on line (proposals and monitoring)
3. Market promotion: stimulus and incentive instruments for companies, infrastructures and technologies
  - Assessment of national/European instruments and support in the use of stimulus instruments (also through ENEA), diffusion and promotion of national and European opportunities.
  - Assessment of existing instruments and new forms of intervention, also in terms of the fiscal regime.
  - Infrastructures, access and traffic costs. Cabling and broadband networks.
  - Banks and the credit system - better suit to the requirements of the productive sector.
  - Electronic payment systems.
  - Financial architecture and capital markets to support entrepreneurial projects.
  - Innovative technologies such as satellite based ones and WebTV. Development of new facilities and terminals.
  - Logistics (privatised postal service, delivery, electronic technology for urban transport and multi-modal systems).
4. System of guarantees for the market: legal aspects, normative and regulatory framework, standards and self-regulation:
  - The Monti Directive proposal, self-regulation, commercial codes and codes of conduct.
  - DNS, trademarks and intellectual property, protection of privacy and minors, digital signature.
  - Policy platform for a normative and parliamentary discussion on E-trade.
  - Need and opportunity of demand (citizen users and companies) and supply (companies).
  - Intermediaries. Transparency of contractual arrangements.
  - Social and employment effects. Training.



# Luxembourg



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## Introduction

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The Grand-Duché of Luxembourg, which has 429,000 inhabitants and which has the highest standard of living among the EU Member States and continuous economic growth for well over the past ten years, is also well positioned in the Information Society landscape.

With 73 computers per 100 inhabitants (and 50% for households) in June 2000, Luxembourg takes the lead amongst the European countries, as well as the United States of America (46 computers per 100 inhabitants). 16% of households have access to the Internet, which places Luxembourg in a good position in Europe.

This good positioning results from the dynamism of the country and from its specific assets. Also, the Government, supported by the public and private sectors, has advanced in the telecommunication liberalisation process and launched several initiatives, following the recommendations of the Comité Info 2000 from 1995 and 1996. Major achievements have been made in the health sector, education and public services.

With a new governmental programme, which followed the elections of August 1999 and in the framework of the eEurope initiative launched in March 2000, the Prime Minister Jean-Claude Juncker committed to fully implement the Information Society in Luxembourg. Therefore, the Government is currently preparing a new strategy entitled "e-Luxembourg" which should be published within the coming months.

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## 1. The Info 2000 Committee and its recommendations

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### 1.1 Creation of the Info 2000 Committee (1995)

In January 1995, the Ministry of Communications started a full review of telecommunication regulation and policy to put them in accordance with developing EU legislation. In fact, at that time, the Telecommunications Law was not in line with EU directives, such as those on liberalisation or mobile telephony. Moreover, these regulatory changes implied re-thinking globally the whole national telecom policy of the Luxembourg State, due to the expansion of ICT and media and their effects on social and economic development. In that perspective, the Government considered that it was necessary to get the support, participation and involvement of all key stakeholders.

Therefore, the Ministry of Communications established in 1995 the "Info 2000 Committee" (Comité Info 2000) with the mission to study, evaluate and inform the Government about the opportunities and the risks associated with Information Society development and the ways to take full advantage of liberalisation and ICT deployment. The Committee Info 2000 was assigned to propose concrete initiatives and define more precisely the role of the state in the transition, towards Information Society.

There have been 2 Committees. Under the chairmanship of the Minister of Telecommunications Mady Delvaux, the first Committee (June - October 1995) was composed of representatives of public and private companies (Post and Telecommunications, SES - Société Européenne des satellites, CLT Multi Media - Compagnie Luxembourgeoise de Télédiffusion - and the banking sector). It was assisted by a permanent secretary. Moreover, the Prime Minister Jean-Claude Juncker has followed the work of the Committee. The second Committee (February - September 1996) comprised 10 representatives of ministries and public departments.

### 1.2. Reports on the Info 2000 Committee (1995 and 1996)

Two reports have been produced by the Group (<http://www.infosociety.lu>):

- **The first report** was released in October 1995 under the title "Info 2000 Committee: First conclusions and recommendations". It comprised 5 parts: The Challenges, International developments; Consequences for Luxembourg; Comité Info 2000 statement; First conclusions: the fundamentals to create a Luxembourg Information Society, a new telecom policy for Luxembourg.

It stated that 4 main points and principles should form the basis for a national IS policy:

- There is a major opportunity for Luxembourg: the Government should develop and implement a national programme in order that all sectors of Luxembourg's society may benefit from positive effects. It implies a change in traditional organisational structures.
- National economic performance and competitiveness are at stake: national interests must be defended whilst international competitiveness must be ensured; The Government must work so that real economic benefits can be generated by new activities linked to ICT.
- The complexity of the issues calls for an integrated approach: convergence between the telecommunication sector, ICT and media creates a need for consistent policies over these 3 sectors and the elaboration of a unified and efficient policy.
- Public-private collaboration is essential. A common effort from private and public sectors must be engaged to implement a proactive strategy towards information society.

The Committee considered that Luxembourg should differentiate itself from the other countries through its originality in concrete actions, based on the above principles. These actions should use the following specific assets of Luxembourg, which are particularly pertinent in view of Information Society transition:

- Luxembourg is at a geographical and cultural crossroad and could constitute an international platform for Information Society.
- Despite - or thanks to - its exiguity, Luxembourg can react very quickly and is particularly dynamic.
- Luxembourg benefits from a high-level telecommunication infrastructure, among the best technically and cheapest in Europe.
- There is a very high penetration of cable TV, which forms a solid basis for advanced infrastructure.
- Strong historical co-operation shared goals and mutual confidence between public bodies and the private sector. There is a proactive public policy that favours competitive advantages of companies located in Luxembourg and economic growth.
- Existence of two major European actors from the media (CLT) and broadcast (SES).
- Well-developed financial and banking sector having considerable needs and potential in terms of telecoms and ICT applications and services.

- **The other report** of the Info 2000 Committee was published in November 1996: Entitled "the role of the State in the Information Society", it included specific recommendations about the role of public authorities.

It stressed five points:

- the State should be a model as a user of the information technologies;
- the services provided by the State should be simplified and improved thanks to new ICT;
- the State should inform people about the possibilities of information technology;
- the State should offer new public services (teleservices);
- the State should offer access to the Information Society;

Seven strategic principles should guide the public sector in its approach to the IS:

- To manage and organise the means of the public administration in a new way: both personnel and equipment
- To implement the subsidiarity principle at all levels of the administration
- To raise synergies between the public and private sectors to develop better organisation in the administration
- To acquire a better knowledge of the information highways before taking legislative measures
- To define a period within which traditional and new technologies will coexist for people to get familiarised with them
- To assess and update knowledge and methods of public agents
- To enhance the individual innovative role of public agents

This report also proposed to use ICT in the internal work of the administration (i.e. the use of electronic mail or an electronic access to documentation); to set up new services for the public (public e-mail system); to encourage the educational sector (teachers and students) to use new ICT and develop distance learning.

It also made an inventory of current and planned projects and initiatives (sometimes limited to computerisation and databases) in 11 areas :

<b>Teleworking</b>	Teleaarbecht P&T initiative (P&T); Pilot teleworking project
<b>Distance learning and training</b>	HoTMenLine; Cyberfox, Malibu, SITEL ( <a href="http://www.sitel.lu">http://www.sitel.lu</a> (Telematic network of adult continuous training)
<b>Schools, Universities and Research Networks</b>	CETEL, RESTENA, the National Network for Education and Research ( <a href="http://www.restena.lu">http://www.restena.lu</a> ), National infrastructure for schools
<b>Road traffic management</b>	CITA
<b>Telematic services for Smes and multimedia applications</b>	Tudor-Online®; Médiatel®; EU SMEs Initiative for construction sector; TEO (Text Editor Oral). GINA (Generic Interactive Navigator), SALEA project for disabled, Multimedia Guide, Multimedia Archive system, Art and Multimedia project, European Navigator (ENA), CNFL (women project <a href="http://www.cnfl.lu/">http://www.cnfl.lu/</a> ).
<b>Health networks and medical applications</b>	HEALTHNET ® Luxembourg; Esculap (telemedicine application), SOCIALNET® Luxembourg ( <a href="http://www.socialnet.lu/">http://www.socialnet.lu/</a> ); EU project AIM and national projects on medical imagery, Hospitals integrated information systems (radiology and medical files); LUXIS project ( <a href="http://www.santel.lu/">http://www.santel.lu/</a> ), Handitel ( <a href="http://www.socialnet.lu/handitel/">http://www.socialnet.lu/handitel/</a> )
<b>Computerisation of Public Administration</b>	Numerous projects: RP.REG (national directory); EN-TVA0/TERA (VAT system); SIG-ENV (environmental GIS); Project for State Estates; "Impôt 2000" project (Tax 2000); CO.DIR; Infogreffe project and EN.RCO (Register of Commerce); AE.PAP (passeports); BI.CAP (public libraries); EM.PLA (jobs seekers), etc.
<b>Electronic provision of Public information</b>	Numerous projects: Electronic Archive of the Chamber of deputies; Employment project; Frontaliers Project; PEGASE; CAP'95 ( <a href="http://www.Luxembourg-city.lu/touristinfo/">http://www.Luxembourg-city.lu/touristinfo/</a> ); REBUS (librairies telematic network; SIP for the press; BDN-SIT (national GIS); LUXNAT, Technology Watch Center (CVT) on intellectual property ( <a href="http://www.cvt.lu/">http://www.cvt.lu/</a> ) etc.
<b>European networks between national institutions</b>	Numerous projects: FLIRT (Luxembourg, Belgique, Portugal); VIES (Intra-community VAT); ANIMO; SHIFT; Intrastat project (statistics); VISION, EURES, FOURCOM, TRANSIT, etc .
<b>Urban electronic highways</b>	SYRECOS (exchange system of competences and services <a href="http://www.syrecos.lu">http://www.syrecos.lu</a> ), CitizeNet Rosport ( <a href="http://www.citizenet.lu/">http://www.citizenet.lu/</a> ); Interactive kiosks, High Tech Centre of Mariendall
<b>Technological centres of excellence</b>	ESPITI and SAPIUS projects; LUX-CERT ( <a href="http://www.cert.lu/">http://www.cert.lu/</a> ), ATES, AUSEC, etc.



This report has also taken into consideration the work of the Parliament of Luxembourg. In fact, in 1996, the Commission of Communications and Informatics, together with the Commission of Media, Research and Culture of the Chambers of Parliament took the initiative to organise a policy debate on Information Society in Luxembourg. The report on this debate was adopted on June 1996. The report was published under the title "Information Society in Luxembourg" (<http://www.infosociety.lu>).

A follow-up debate was organised in March 1998 in the Luxembourg Parliament to assess the application of the main recommendations of this report. The written synthesis of the debate is expected to be published in the near future and may encourage a national IS initiative.

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## **2. Information Society Initiatives**

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Following the recommendations of the Comité Info 2000 reports, several activities have been carried out by the Government. These activities have also been conducted in close co-operation with private actors and public bodies with whom the Government has passed agreements. This is particularly the case of the Henry Tudor Public Research Centre.

An appraisal of the action of the State concerning its role in the information society in relation with the recommendations of the 1996 Comité Info 2000 report has been carried out by the Ministry of the Civil Service and Administrative Reform. The full report, released in March 1999, is available in French on Ministry web site ("Les recommandations du Comité Info 2000 - Le rôle de l'Etat dans la société de l'information - Un premier bilan - <http://www.etat.lu/MFP/documents/ann9899.pdf>).

### **2.1 Interdepartmental working groups on Information Society**

Various interdepartmental workgroups had been created among the national administrations since 1995 on behalf of the government to explore issues related to the promotion of the Information Society: legal aspects, Intranet in the national administration, etc. An interdepartmental workgroup in charge of the legislative impact of the Information Society, composed of delegates from the State Ministry, Ministry of Communication, Justice, Economy, Family, Foreign Affairs, Informatics Department, Commerce and SMEs etc., has been working on topics such as youth protection, illicit content, databases and privacy, commercial rights, secured data exchanges and copyright.

### **2.2 The Government, Internet projects and electronic administration**

An ad hoc Internet working group had been set up by governmental decision on 21st of December 1995. Under the co-ordination of the Service des Médias et de l'Audio-visuel - SMA, it aimed to co-ordinate departmental initiatives concerning the Internet. Since June 1996, it was opened up to the representatives of every ministry (over 30). It has produced several interim internal reports: "Press & Information: Content and presentation"; "Public services' use of Internet"; "Use of NIT, and particularly Internet, as a mean to enhance the relationships between public administrations and users" (<http://www.etat.lu/SMA>).

In April 1998, a new group C.I.E. - C.C.G. - S.I.P. (Data-processing Centre of the State - Centre of Communication of the Government - Service Information and Press) was charged by the former Minister of Communications, to create a new coherent and effective presence of the Government of Luxembourg on the Internet, co-ordinate the activities of publication of the on Internet, ensure a strong public image and put in place the IT framework required for Internet development.

On March 10 1999, the Council of the Government gave the green light to further administrative reform aiming to facilitate the access of Citizens to public information. A number of initiatives were launched:

- the development of the Internet site of the government (<http://www.gouvernement.lu>)
- the development of the Internet Portal site for the Grand-Duché de Luxembourg (in progress)
- the ADMILUX web site which is an important step towards e-government (user guide on administrative procedures, a central element of the administrative reform; thesaurus of departments and services, electronic forms, interactivity, a Guide for on-line publication targeted at administration services) (<http://www.admilux.lu> - in progress).



Finally, the Government has developed in 1998 an ambitious project entitled RACE – an acronym standing for "*Réforme Administrative par la Coopération Electronique*" (Administrative Reform through Electronic Co-operation).

It is a medium-term research activity undertaken jointly by the Ministry of the Civil Service and Administrative Reform and the Henry Tudor Public Research Centre (CRP-CU) which is now well under way and will contribute to administrative reform through regular and on-going activities (<http://www.etat.lu/MFP/>).

### 2.3 Initiatives of the Ministry of Education, Training and Sport

In 1997, The Ministry of education created a working group on the impact of the information Society on the educational system. The working group has produced a brief report of its work ([http://www.men.lu/\\_didac/tci.html](http://www.men.lu/_didac/tci.html)).

Through its Centre for Technology in Education, which is a governmental service (Centre de Technologie de l'Education <http://www.cte.lu>), and Department for the Coordination of Research and Innovations in Pedagogy and Technology (SCRIPT - <http://www.script.men.lu>), the Ministry of Education has launched several initiatives to develop the use of ICT in public education: databases, multimedia centre, educational software, online support services and resources for schools IT managers (Ctechnet), fora, equipment of schools ("Media 2000" programme), etc.

As an example, the Ministry of education, training and sports has launched the following projects:



**Cyberlycée** (<http://www.cyberlycee.lu>): launched in 1997, Cyberlycée is a virtual, online secondary school. It contains resources, services (mailing list, fora, information letter), web tips, search engine, contacts



**Cyberprim** (<http://www.cyberprim.lu>) in February 1999, following the success of Cyberlycée: addressed the primary schools of Luxembourg. It aims to build "virtual primary schools" and is targeted at parents, children and teachers. Cyberprim is an on-line resource centre of didactical and pedagogical tools; an interactive site (posting of documents, chatroom, forum, online exercises and corrections, etc.) and a multimedia tool.



**PC Driving Licence** (Permis informatique - PC-Führerschein): It consists of giving a licence to children in their 7<sup>th</sup> year of schooling (7<sup>ème</sup> année d'étude), attesting to their ability to use computers (<http://www.pcf.lu>).



**Fem-Training-Net** (Réseau Femmes – Formation Netzwerk im Bereich der Mädchen – und Frauenbildung): a network promoting IT training for women and equality opportunities. (<http://www2.men.lu/eu/ftn/proj.htm>)



**Luxembourg Olympiads in Informatics** (Concours Informatique Luxembourgeois - CIL) Since 1993, the Ministry has organised every year a national informatics competition. The goal is to stimulate secondary students' interest in informatics, identify young people with outstanding abilities and offer them the possibility of participating in the International Olympiad in Informatics (IOI). (<http://www.cil.lu>)

## 2.4 Initiatives from other actors

In Luxembourg, some other actors play a key role in the development of the Information Society. Among them, we can cite:

- **FEDIL and Chamber of Commerce of Luxembourg**

FEDIL, a professional federation, representing about 400 companies in Luxembourg and over 60,000 jobs, and the Chamber of Commerce of Luxembourg, representing about 18,000 companies have published a number of papers on telecommunications and information society in Luxembourg and participated in the deliberations of the Government (<http://www.cc.lu/> and <http://www.fedil.lu/>).

- **Information Society Luxembourg - Société de l'Information Luxembourg (SIL) (<http://www.luxinfo.lu/>)**

SIL is an association established in January 1997 within the Chamber of Commerce of Luxembourg in the framework of the Info 2000 programme of the European Commission. Comprising members from the public and private sectors, it aims to analyse, understand, promote and communicate the structural change provided by the information society by building an effective informational culture.

- **Centre de Recherche Public Henri Tudor (<http://www.tudor.lu/>)**



The CRP Henri Tudor is one of the research centres in Luxembourg. Hosted by the Institute of Technology, the Public Research Centre Henri Tudor, it was launched at the end of 1987.

It co-ordinates several major projects for the Government such as Handitel (information resources on disability - <http://www.hantitel.lu>), Santel (national health server - <http://www.santel.lu>), Spiral (Network of IT professionals - <http://www.spiral.lu>), CRTE (Resource Centre for Environmental Technologies - <http://www.crte.lu>), SITEC (training for IT engineers), the Technoport Schlassgoart, the "House of Entrepreneurship and Innovation" (<http://www.technoport.lu/>) and the New Media Group (<http://www.nmg.lu>).

Concerning the New Media Group, its objectives are to stimulate the development of the New Media industry and to support companies using new media technologies and applications. NMG has developed several services such as a New Media Observatory, a New Media Research and Engineering Unit, a New Media Competence Development Unit, a New Media Strategy Unit. At present, it focuses on Internet and e-business.

- **ALTA (Association Luxembourg of Téléactivités)**

ALTA is another important actor in Luxembourg, which was created in May 1998 with the objective to promote, study, assist and inform in the field of the Information Society and teleservices. In March 2000, it organised a European Congress "New Jobs in the Information Society", supported by the European Commission and the Government of Luxembourg under the patronage of the Prime Minister. The conclusions of this congress are available at <http://www.alta.lu/congress/conclusions.html>



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### **3. Current Developments: towards "eLuxembourg"**

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Following the elections of August 1999, the Prime Minister, State Minister and Minister of Finance, Jean-Claude Junkler, gave his governmental statement. He announced several measures to be taken by his new Government in the field of telecommunications, electronic commerce, creation of high tech companies in new media and a reinforcement of the communication sector.

A few months later, in the framework of the preparation of the participation of Luxembourg at the ministerial conference of Lisbon on Information Society in March 2000, the Government started to disclose some new directions for a governmental Information Society strategy. It was announced that the Info 2000 programme of 1996 would be put in line with the eEurope programme with the co-ordination of all Ministries concerned.

#### **3.1 The "Luxembourg Offensive": towards eLuxembourg**

On May 10, 2000, in his speech on the state of the Nation, the Prime Minister revealed his plan. He stated that Luxembourg needs an "offensive" in the field of ICT: *"High technology, Information and Communication are the driving forces of the future"*.

He took stock of the situation considering that Luxembourg is not starting from scratch and that Luxembourg is ready for the Information Society. In 1999, there were 530 ICT companies representing 3,100 employees. Thanks to the recommendations of the "Comité Info 2000" which are being implemented or in the process of being implemented, serious progress has been made.

During the last 15 years, the number of households having a computer grew from 7.2% to 50%. One Luxembourger out of two has a mobile phone and 1 out of 3 has Internet access. 40% of primary schools and 100% of secondary schools are connected to the Internet. In primary schools, there is 1 computer for 19 pupils and 1 for 11 pupils in secondary schools.

According to Mr Junckler, some accompanying conditions are required to succeed in the implementation of the Information Society and attract companies and jobs: they are a competitive tax system for companies and employees, low social charges, excellent infrastructure, skilled people and an attractive framework in terms of communication and information.

Luxembourg has these assets. However, it needs to do better and therefore, renewed public action in this field is needed: an Information Society action plan and action programme will be prepared soon, entitled e-Luxembourg.

In that perspective, the Prime Minister has announced the following measures:

- the National IS Plan will detail all past and planned activities allowing implementation of the European decisions taken at Lisbon. The Government strongly supports eEurope whilst considering that Europe should more emphasise the social dimension more strongly to reduce the "digital divide".
- The National plan will be prepared by the Minister of Communication, François Biltgen. He will be also be responsible for the preparation and monitoring of the National action programme, e-Luxembourg to be presented in autumn 2000. He will be assisted by a National Committee for Information Society (Commission nationale pour la société de l'information - CNSI).

With a significant increase of funds for information society the 2001 budget (+ 12%, i.e. 43.9 million EUR), the Government will work on the following lines :

- **Internet development:** An increase of Internet use by citizens, in particular by less favoured households in order to avoid the emergence of an "Internet proletariat", for young people and for elderly people. Internet access must be available in all meeting spaces. The Government will ensure a significant reduction of access costs to the Internet.
- **E-Government:** An on-line administration before the end of 2003. Internal and external teleprocedures will be implemented. Access to State information will be facilitated. A national sectoral plan on e-government will be presented within the coming months.
- **Infrastructure:** Favour the rapid development of UMTS broadband networks. A licence for the third generation mobile phones should be soon granted.
- **Legal framework** will be adapted: new law on electronic commerce to be adopted, review of the telecommunication legislative framework, facilitation of administrative procedures concerning licensing and establishment; new laws concerning consumer protection against e-commerce risks and Internet abuse, freedom, data protection and privacy; new media law (see Institut Luxembourgeois des Télécommunications - ILT <http://www.etat.lu/ILT/>).

- **Education and Research** will continue to be an important matter:
  - School equipment and connection to Internet: the objective is to reach 1 computer for 8 pupils (against 1 for 11 today); the Government will support municipalities in this effort and develop its "Media 2000" programme.
  - Investments in the National Network for Education and Research - RESTENA will be amplified.
  - Training of teachers: teachers will have to get an "Internet Driver Licence" ("permis de conduire Internet"). A new systematic training system will be implemented for all teachers.

### 3.2 Recent developments

- **Installation of the National Committee for Information Society**

The establishment of the National Committee for Information Society has been decided upon by the governmental council of June 30, 2000. It first met on August 3, 2000 to start its work with the assignment of ensuring the rapid and co-ordinated deployment of the Information Society.

In a first step, the CNSI comprised representatives of Ministries particularly concerned by eEurope i.e. the Ministries of economy, research, education, public service, education and labour, the State Ministry taking the lead. In a further step, all ministries will be represented, in the framework of working groups.

Its first task is to make the inventory of initiatives already taken and to build a programme of actions.

- **Electronic commerce and Internet**

For some years, Luxembourg has been relatively absent from e-commerce development. Some observers considered that there was a certain "passivity", even "apathy". That period is in the past: recently, several initiatives have been taken both by the Government and the private sector:

- There has been since April 2000 an Internet Chapter for Luxembourg " Internet Society Luxembourg" (ISOC Luxembourg - <http://www.luxembourg-isoc.org/>).
- The Technoport Schlassgoart, which results from a partnership between the public and private sectors, encourages and facilitates the creation and development of Luxembourg's innovative hi-tech companies, through access to a wide range of facilities and support services (<http://www.technoport.lu/>). Several organisations have announced the establishment of other incubators.
- The Service des Medias et de la Communication has launched a public consultation on the regulation of Internet (Auto-regulation site : <http://www.autoregulation.lu/autoregulation.nsf>
- After several months of discussions and amendments, the Law on electronic commerce has been adopted on 12 July 2000. This law gives a legal recognition to electronic signature, within specific security conditions. It regulates publicity on the Internet and set protection rules for the consumers. This law should allow the emergence of new jobs, particularly in the certification area. More information on this law is available at <http://www.etat.lu/ECO/>.



# Netherlands





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## Introduction

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The Netherlands holds a central position in Europe's Information Society. The Netherlands is ranked in 7<sup>th</sup> position in a group of 55 countries studied by the 2000 Information Society Index (IDC/World Times Survey). Among the EU member States, it ranks 4<sup>th</sup> after Sweden, Finland and Denmark. The Netherlands has very dynamic telecoms market which is open and liberalised; an international orientation, well-educated people with a good knowledge of foreign languages (77% of population speak English), logistical advantages ... all these factors constituting the so-called "Dutch Model" attract new investments, both domestic and foreign. In particular, a great increase in foreign investment by Internet companies has been witnessed in recent years in the Netherlands. Some of the Internet's biggest players have chosen the Netherlands for European headquarters, R&D facilities, customer service centres and new Internet portals.

The Netherlands has an outstanding technological infrastructure. It has a high concentration of PCs, which has grown from 29.5 computers per 100 inhabitants at the end of 1997 to 46 in 2000. The Internet is exploding and Netherlands is among the European leaders in terms of Internet connectivity rates and e-commerce. In February 2000, there were 4.5 million Internet users according to Proactive Netherlands, which represents 29% of the total population. By the end of 1999, 50% of companies were using the Internet (as opposed to 33% at the end of 1997) and around 22,000 firms were offering their products or services on the Internet, an increase of 70% compared with 1997.

This good performance also results from the commitment of the Dutch Government to making the best possible use of the possibilities offered by ICT to ensure national prosperity and well being.

As early as 1994, the Government launched a National Action Programme on Electronic Highways. In April 1998, it released a Review of the National Programme, which was sent to the Lower House. In 1999, following a motion of the Lower House, it decided to prepare a follow-up document to the National programme. In fact, the House found that government initiatives in the ICT sector were threatening to become fragmented and it asked the government for greater coherence and streamlining in ICT initiatives. This was achieved in June 1999 when the Cabinet published the White Paper "The Dutch Digital Delta". This document offers a framework for a range of specific measures already implemented as well as planned measures with a horizon of 3 to 5 years. This White Paper was accompanied by recent sectoral action plans, white papers and policy statements such as Electronic Commerce Action plan and Action Plan on electronic government. Moreover, in 2000, other topical framework documents were published.

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# 1. The Dutch Action Programme for the Information Superhighways and follow-up initiatives

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## 1.1 Publication of the Dutch "Action Programme for the Information Superhighways: From Metaphor to Action" (December 1994).

As early as 1994, a Government Declaration and the Queen's Speech on Budget Day made clear the urgency for the Netherlands to strengthen its position as the "Gateway to Europe" by using information as a source of high-tech economic activity. As stated later on, *"In view of the technology base in this country, together with the skilled labour force and the traditional strength in process-based logistical and financial services, the Netherlands is in a good starting position. Our country will, however, need to put its shoulder to the wheel, as the world-wide race is very fast and calls for exceptional efforts"*.

The Dutch Government believed that the Netherlands must play a prominent role in Europe in this sector, in order to realise its economic ambitions and meet its social obligations and this must be done very quickly, without hesitation because speed is a crucial factor in international competition. The Government must play a role to meet these requirements but the private sector also plays a leading role as *"development is determined largely by private sector risk-bearing investments in the development and application of new technologies, networks and services, by commercial use of services in the public sector and by private consumption"*.

Therefore, the Government announced the publication of an Action Programme containing lines for government actions in the ICT sector. It was prepared by the Dutch Ministry of Transport, Public Works and Water Management (<http://www.minvenw.nl/dgpt>), the Ministry of the Interior and Kingdom relations (<http://www.minbzt.nl>), the Ministry of Economic Affairs (<http://www.minez.nl>), the Ministry of Justice (<http://www.minjust.nl>), the Ministry of Finance ([http://www.minfin.nl/nl/fiscaalbeleid/home\\_b21.htm](http://www.minfin.nl/nl/fiscaalbeleid/home_b21.htm)) and the Ministry of Education, Culture and Science (<http://www.minocw.nl/>).

This first National Action Programme was published in December 1994 under the title "Action Programme for the Information Superhighways: From Metaphor to Action" (Tekst Nationaal actieprogramma van metafoor naar actie; Nederlands - English version available at <http://www.minez.nl/docs/nap-en.htm>).

A two-track policy was involved: one track led to full liberalisation of the market, while the other track involved a reappraisal of the government's role in creating the right conditions in the public sector.

This program consisted of six lines of action:

- Liberalising the telecommunications-infrastructure.
- Liberalisation of telecoms and media service markets.
- Public duty to provide for information supply.
- Innovation in legislative requirements: creation of regulations applicable to the electronic superhighway and allowance of self-regulation.
- Demonstration projects in the public sector, in particular Connection of the Dutch administration to the electronic superhighway.
- Initiatives by the private sector: e.g. consultation prior to competitive actions between market parties to find solutions for barriers affecting the electronic superhighway and establishment of a subsidiary programme to stimulate the development of electronic services by the Ministry of Economic Affairs.

## **1.2 Further developments (1995-1997)**

In application of the action programme, the Government has committed itself to create opportunities for new electronic highway initiatives (e.g. by means of the role of legislator). It also announced that it would start large-scale example projects as a user of the electronic highway. In 1995 the government selected 8 example projects and in December 1996 approved 11 projects.

In February 1997 the cabinet announced to the Parliament that some strategic large-scale projects will be started:

- Educational institutions will be connected to the Internet, teachers will be retrained and care will be taken of a well-suited information and service offering.
- Citizens will be provided with access to the Internet by placing equipment in libraries, city halls, etc. The government will also offer high-grade electronic information to citizens and is going to involve them in the democratic process.

Another important initiative was the White Paper published in December 1997 "Taxes in the 21st century: an investigation" (Belastingen in de 21e eeuw: een verkenning) by the Ministry of Finances. According to the White Paper, certain parts of the current tax system are out of date and not equipped for new developments in society, in particular the globalisation of markets, the advance of the internet-economy and the ageing of the population. Adjusting the tax system will make it possible to anticipate these developments at an early stage (<http://www.minfin.nl>).

The Government has also addressed the business sector to unfold initiatives. Therefore, the Minister of Economic Affairs in 1995 invited a group of leading companies to think about what type of infrastructures would be needed for a quick start of the electronic highways in the Netherlands. In November 1995, those companies formulated a working plan of action, entitled " Working Plan for the Information Superhighway - Vision on Acceleration" (available in English at <http://www.minez.nl/nota/snelweg/englich.htm>). Later on, this group joined another Group working this time on electronic services. Together, they presented another plan in November 1996 entitled "Services and Networks for Electronic Highways in the Netherlands" (available in English at <http://www.minez.nl/nota/highway/hinx00.htm>). The most important agreements laid down in the report were:

- Investments in networks by infrastructure companies for interactive services.
- Deployment by the banks of their chipcard technology (Chipknip and Chipper) for payment and identification functions.
- Implementation of set-top boxes (digital decoders) for pay-TV and interactive TV services.
- Establishment of the Expertforum Electronic Services to bundle and to propagate knowledge and experience regarding electronic services by VNO-NCW (association of employers) and NVI (Dutch Association of Information Services Providers) (<http://www.expertforum.nl>).

## **1.3 The re-calibration of the Information Superhighway Action Programme (April 1998)**

In April 1998, several ministries presented a note "Beyond the NAP: re-calibration of the National Action Programme Electronic Highways" (Boven NAP; Herijking van het Nationaal Actieprogramma Elektronische Snelwegen - <http://www.minez.nl/>).

This note was prepared on the basis of the progress report issued in October 1997 on the state of achievement of the lines of action included in the National Action Programme for the Information Highways. Further to this paper a letter was sent to the Dutch Parliament in which further lines of action were suggested (<http://www.minez.nl/nota/vrtgsnlw97/hinx00.htm> - Dutch).

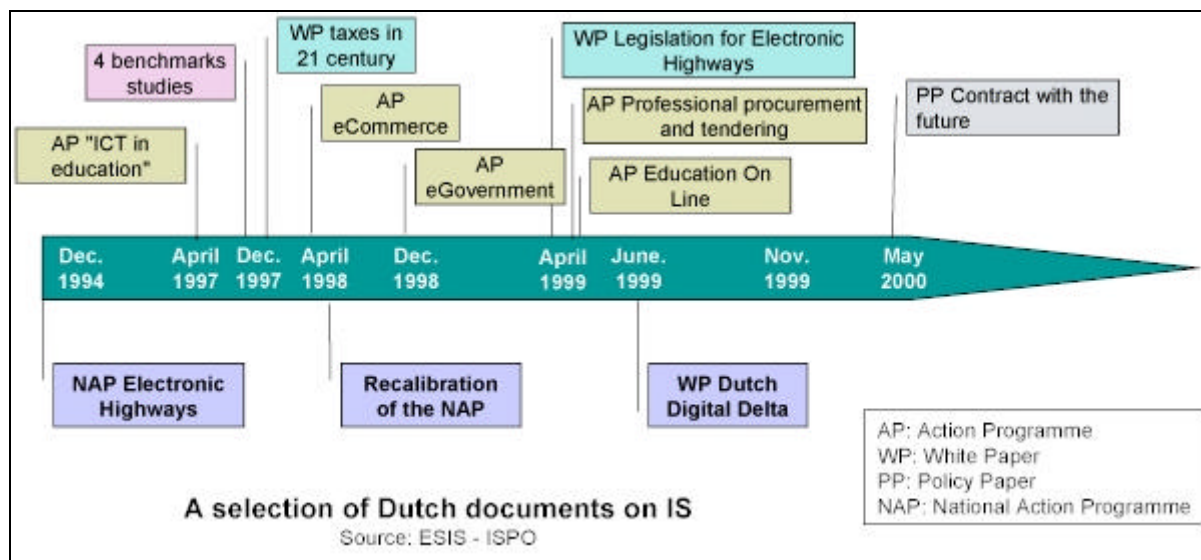
The note was also prepared on the basis of 4 benchmark studies that were executed in 1997 and were devoted to the following topics:

- Six times an Information Society " - benchmark study government.
- "The ICT knowledge infrastructure in the Netherlands" - benchmark study knowledge position.
- "Telecommunications infrastructure and services".
- "On the way to the Information Society" - benchmark study electronic services.

From these studies (available in English at <http://www.minez.nl>) it appeared that the Netherlands had made progress, but that in a number of fields, further action was desirable. In particular, it seemed necessary to launch five program clusters for future policy:

- The government as legislator and instructor. The government has to remove barriers in the existing juridical framework and to tailor legislation to information as much as possible.
- ICT and the public sector.
- Knowledge and accessibility. The government will improve and extend its electronic services. The services also have to be more accessible. The government will set up transaction services and will work on government Trusted Third Party services and a government Intranet.
- Innovation and ICT developments in the market sector. The use of the electronic highway by citizens, companies and the government will be stimulated. Clarity has to be created with respect to rules and codes of conduct. Furthermore, agreements have to be made with respect to privacy, security aspects and unambiguous payment systems.
- (Tele)Communications-infrastructure. Together with the telecommunications / infrastructure sector, the government will map the infrastructure problems.

The structural budget for the Electronic Highways amounts to 42 million EUR. The third cluster will receive about 16 million EUR and the fourth cluster 20 million EUR. The other 6 million EUR will be deployed for studies concerning ICT applications within the government and experiments with (tele)communications infrastructure.



## 1.4 Sectoral Actions plans

Several Action Plans and Policy Papers have been issued, detailing actions to be undertaken focusing on specific areas.

- **ICT in Education Action Plan: investing in progress (April 1997)**

Following this, an important action plan was prepared on education in April 1997. The action plan "Investing in Progress" presented an ambitious aim to integrate the use of ICT in education. In the first phase the program focused on primary education, secondary education and adult education, secondary teacher training and agricultural education. In December 1997 120 secondary education schools were selected to present their information and communication technology plans. In the fourth quarter of 1997, companies were able to present their plans (tender) concerning the construction of a national information and communication network for educational institutions in the Netherlands called EduNet (<http://www.minocw.nl/>).

- **The e-commerce Action plan (March 1998)**

Published in March 1998, the objective of this action plan (1998 - 2000) was to develop the Netherlands into one of the leading nations in the field of electronic commerce (<http://www.minez.nl/ecom/english/hinx00.htm>). The re-evaluation of the Information Superhighway Action Programme highlighted e-commerce as a new area for special attention. Therefore, the e-commerce action plan was one of the new policy initiatives to emerge from this re-evaluation.

Key features of the plan are the economic potential and the opportunities of electronic commerce for the business sector. The action plan focuses on the obstacles specifically associated with electronic commerce. As the introduction and implementation of electronic commerce will primarily be market-driven, the government of the Netherlands sees its task as ensuring that market players are in a position to take advantage of the developments and new opportunities of electronic commerce. This action plan comprises three main lines, namely:

- To create a favourable business environment to speed up the development of electronic commerce.
- To create a clear legal framework for electronic commerce.
- To develop and implement a vision of international co-operation in which both a multilateral and bilateral approach is adopted.

The action plan will be partly funded from the Information Superhighway Action Programme budget. Recourse will also be made to the generic technology instruments of the Dutch Ministry of Economic Affairs.

These lines involve a series of actions, which are summarised in the table below:

<b>Economic actions</b>
<b>Increasing knowledge and awareness of companies</b>
<ul style="list-style-type: none"> <li>• Bringing together users and providers of knowledge to discuss on e-commerce with a view to starting R&amp;D projects. Organisation of an e-commerce brokerage event.</li> <li>• Providing risk-bearing loans for e-commerce services via the KREDO scheme in 1998 and subsequent years. Recourse to other national R&amp;D schemes for the benefit of e-commerce projects.</li> <li>• Informing about "New methods of work and e-commerce" key action of IST / FP5.</li> <li>• Starting an e-commerce general information programme in conjunction with the Electronic Commerce Platform Nederlands (ECP.NL).</li> <li>• ISO/STEP information programme in the processing industry with SPI-NL, FME-CWM, Het Instrument and VNCI.</li> <li>• Electronic commerce demonstration programme to be carried out by Senter in conjunction with sectoral organisations.</li> <li>• Developing consultancy tools through joint ventures between Innovatiecentra, the Institutes for SMEs, IT companies and the Telematics Technological Top Institute.</li> <li>• Official start of Demonstration Programme "Organisational Innovation and IT".</li> <li>• Setting up platform for matching training supply and demand in the field of electronic commerce.</li> <li>• Encouraging Dutch input into the "Institute for global electronic commerce"</li> </ul>
<b>Increasing amount of electronic business conducted with government</b>
<ul style="list-style-type: none"> <li>• Survey of foreign experience with electronic public procurement.</li> <li>• Set up initiative group for electronic public procurement in the Netherlands.</li> <li>• Developing projects for electronic extraction of business information intended for the government.</li> </ul>
<b>Increasing export opportunities for SMEs</b>
<ul style="list-style-type: none"> <li>• Developing a national electronic business centre for Dutch SMEs and other companies.</li> </ul>
<b>Legal actions</b>
<ul style="list-style-type: none"> <li>• Promoting the creation of model contracts / uniform commercial codes of conduct for e-commerce and organising a strategic conference on these subjects.</li> <li>• Implementing "Legislation for the information superhighway" policy document.</li> <li>• Completion of "Trusted Third Parties" project and start of TTPs implementation plan</li> <li>• The "Conducting Legal Transactions Electronically" project (Market Forces, Deregulation and Legislative Quality departments).</li> <li>• Report by 'Electronic Commerce and Taxes Advisory Group'</li> </ul>
<b>International and Technical actions</b>
<ul style="list-style-type: none"> <li>• Preparing a "rolling agenda" for Dutch interventions in international consultative bodies.</li> <li>• Including e-commerce on the agenda of bilateral trade missions.</li> <li>• Developing and implementing transatlantic co-operation projects in the field of e-commerce.</li> <li>• Seeking contacts with the Internet II initiative</li> <li>• Analysing bottlenecks in information nodes for broadband transatlantic connections</li> </ul>

- **The e-Government Action Plan (December 1998)**

In December 1998, an action program on eGovernment was submitted to Parliament. Several actions were previously launched in this field following a note from 1995 called "BIOS-3 - Terug naar de toekomst" (Back to the Future) the objective of which was to develop the use of ICT for improving both the communication between government and citizens and public services. ("Collective Information Counter", Internet publications, "Overheidsloket 2000" (Governmentcounter 2000), "Overheidsnetwerk voor de 21ste eeuw" (ON21, Government network for the 21<sup>st</sup> century), "Digitale Duurzaamheid" (Digital Durability), etc.)

There was a need to reform all these "BIOS-3 plans and projects" into a plan of action, while defining new activities. This was the objective of this Action Plan covering the years 1999-2002.

In these four years, a better public service provision must be created. This must be achieved first of all by improving electronic accessibility. Therefore, by the end of 1999 every library must have PCs with access to the Internet, where citizens can look for government information on the Web site of the general government: <http://www.overheid.nl>.

In 2002, a quarter of public services must be performed electronically. Furthermore, the possibility of chipcards as a means of identity will be investigated. Finally, a large Intranet for the government will be established. This must make internal business operations more efficient. Data will be processed electronically and put on the Intranet.

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## **2.The Dutch Digital Delta and further developments**

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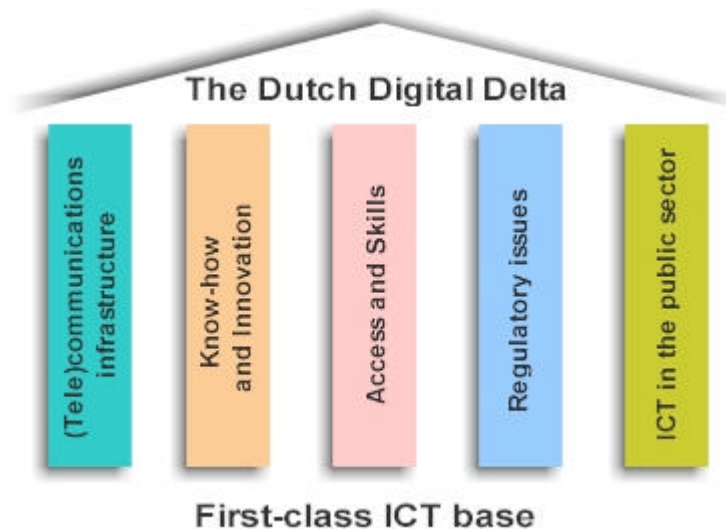
### **2.1 A new Information Society Strategy: "the Dutch Digital delta" (June 1999)**

In June 1999, the Dutch Cabinet presented a White Paper under the title "The Dutch Digital Delta: The Netherlands oN-Line" (De Digitale delta "Nederland on line" <http://www.minez.nl/>). This document is a follow-up to the National Action programme on Electronic Highways" as well as the letter review sent to the Lower House in April 1998. It also builds on previous Action Plans (e-commerce and e-government) which remain valid.

It is a response to a motion by the Lower House in which the House found that government initiatives in the ICT sector were scattered. Therefore there was a need for greater consistency and streamlining in governmental initiatives. Moreover, even if the Netherlands is among the "information elite" today, it does not mean that the country will remain a leader. The competitive environment requires the Netherlands to make a great and renewed effort to maintain its good position.

The ambition of the Dutch Government is to have a "first class ICT base" i.e. to establish a sound base for the further development of the Netherlands into a "digital delta".

Five pillars have been defined which together determine the strength of the national ICT base:



Source: ESIS - ISPO

Specifically, the cabinet seeks to ensure:

1. First-class, affordable, accessible and reliable (tele)communications infrastructure.
2. availability of sufficient and high-grade know-how, strong ICT clusters in which ICT suppliers and users provide innovative applications of that know-how, and an excellent infrastructure for the training of ICT researchers and specialists.
3. An ICT-skilled work force and access (and capability to use) for citizens and companies to the latest electronic media.
4. Legislative and regulatory provisions that do not unnecessarily hamper the application of ICT and provide confidence in the use of ICT.
5. Optimised ICT use in the public sector so that government services are of good quality and so that the public sector may serve as a model.

This policy is based on the following main principles:

- **"Blueprint thinking" must be avoided:** the technology develops at such speed that it is necessary to search, experiment, and pioneer. The Government must remain flexible, adaptive, innovative and co-operative.
- **The Government must play an active role:** even if many developments in ICT take place without Government intervention - the private sector and citizens fuelling the ICT base - the Government cannot stay passive. The Government must provide the preconditions and remove impediments to ICT usage linked to market failure and inadequate institutional conditions. Moreover, it is responsible for increasing attractiveness of the country as regards business location and activity. Finally, ICT can increase the quality and decrease the costs of the government's own services to the public.
- **Government policy must be consistent:** a first-class ICT base is only feasible if government policy supplies an integral contribution to it. The government cannot choose just one of the 5 pillars. An integrated, horizontal approach is required.
- **The Government's policy must be "communicative":** the Government must inform individuals and organisations about how ICT is capable of fundamentally changing society and what the government is doing to promote ICT use.



- **Government policy must be benchmarked and assessed regularly:** because technological developments are proceeding fast, requirements to be met by the basic provisions must be constantly readjusted. Also, it is necessary to measure the position of the Netherlands with regard to the performance of other countries, using a range of indicators. Regular benchmarking is therefore desirable for a good ICT policy.

The Government decided upon the following measures:







- The public information effort on the effects of ICT will be strengthened via the government portal web site <http://www.overheid.nl>, which provides quick and easily accessible information.
- An "integral" benchmarking report will be prepared every 2 years. An ICT monitor has been implemented producing reports, managed by the Research Centre for Applied Education at Twente University. (<http://www.ictonderwijs.nl>)
- An external forum will be set up to act as a sounding board for the Government.
- ICT awareness will be broadened via the Infodrome project which aims to develop an understanding of the social implications of the "information revolution". This will stimulate social awareness of the importance of having a government policy that connects to the requirements of the Information Society and develop insight as to the priority given by relevant parties and interest groups to activities – public or private – undertaken in relation to the Information Society. (<http://www.infodrome.nl>)



The financial framework is the following:




- 31.8 million EUR are allocated annually to developing the electronic highway.
- In complement, 454 million EUR are allocated until 2002.
- Resources are also provided via R&D programmes and generic instruments such as BTS (Business-Oriented Technological Cooperation Projects Subsidies Order).

The comprehensive White Paper (and the document "in outline" both available in English at <http://www.minez.nl>) provides tables detailing actions and activities implemented or to be implemented. They are summarised below, with some updates (as of August 2000):

<b>Pillar A: the (tele)communications infrastructure</b>	
<b>A.1. Supporting innovation, competition and investment in the (tele)communications infrastructure</b>	<ul style="list-style-type: none"> <li>• White Paper on telecommunications developments.</li> <li>• Definition of the Dutch position on the review of the ONP directive.</li> <li>• Debate on capacity shortage.</li> <li>• Periodical benchmarking of the telecommunications infrastructure. First study in 2000.</li> <li>• Allocation of WLL licences.</li> <li>• Incentive framework for new (tele) communications technologies to start end 1999 / early 2000.</li> <li>• White Paper on cable usage as an equivalent alternative.</li> </ul>
<b>A.2 Ensuring the efficient allocation of frequency space</b>	<ul style="list-style-type: none"> <li>• Award of licences for Digital Video Broadcasting Terrestrial and Terrestrial Digital Audio in 1999/2000.</li> <li>• Allocation in 2000 of analogue broadcasting frequencies.</li> </ul>
<b>A.3. Safeguarding the technical reliability of (tele)communications infrastructure</b>	<ul style="list-style-type: none"> <li>• Identification study.</li> <li>• National Telecommunications Continuity Plan completed by March 2000.</li> </ul>

<b>Pillar B: Know-how and Innovation</b>	
<p><b>B1. Development of technological know-how</b></p>  	<ul style="list-style-type: none"> <li>• Expansion of Gigaport <a href="http://www.gigaport.nl/">http://www.gigaport.nl/</a> (64.5 million EUR for 1999-2002)</li> <li>• Expansion of Watergraafsmeer Science and Technology Centre (13.6 million EUR for 1999-2002)</li> <li>• Telematics Institute - Telematica Instituut (created in 1998 <a href="http://www.telin.nl/">http://www.telin.nl/</a>)</li> <li>• R&amp;D Support via several specific and generic schemes to projects cooperation between companies and sciences and technology institutes</li> <li>• Improved accessibility of IT research: Scouting project II started</li> </ul>
<p><b>B2. Promotion of strong ICT clusters</b></p>  	<ul style="list-style-type: none"> <li>• Evaluation of Software Action Plan 1996-2000 to be completed by 2000. Follow-up actions to be decided then (<a href="http://info.minez.nl/magazine/swap2000/engels/contents.htm">http://info.minez.nl/magazine/swap2000/engels/contents.htm</a>).</li> <li>• The Twinning project (investments in high-potential innovative ICT start-ups through the Twinning Network, the Twinning Centres and the Twinning Fund): <a href="http://www.twinning.com">http://www.twinning.com</a></li> <li>• Improve accessibility of KREDO (Electronic Services Development Loan Order) with lower threshold and intensified information effort.</li> </ul>
<p><b>B3. Ensuring sufficient ICT personnel: via labour market and education</b></p>	<ul style="list-style-type: none"> <li>• Task Force on ICT shortages appointed to formulate a strategy and define further actions (in 1999, the shortage was estimated at 15,000).</li> <li>• E-commerce in education: study in addition to the AXIS initiative. "Educational Electronic Commerce Centre the Netherlands", formerly called "Internet University".</li> </ul>
<b>Pillar C: Access and skills</b>	
<p><b>C1. Encouraging the capability of citizens and firms to access to Information services</b></p>  	<ul style="list-style-type: none"> <li>• Fiscal facility for donation of PCs to schools, etc. since early 1999 ("Private PC projects")</li> <li>• Government-Citizen Communication project - Communicatie Overheid - Burger, COB): information on Internet in Libraries (9 million EUR 1998-2000)</li> <li>• Expansion of Syntens activities (<a href="http://www.syntens.nl/">http://www.syntens.nl/</a>): InnovatieNet (Innovation and SMEs) and Sp.OED advice secretariat (<a href="http://spoed.wirehub.net/">http://spoed.wirehub.net/</a>): large-scale information campaign and specific advice for individual entrepreneurs. Works in close cooperation with Electronic Commerce Platform Netherlands (ECP.NL): <a href="http://www.ecp.nl">http://www.ecp.nl</a>)</li> <li>• Evaluation of MediaPlaza (operational since 1997 - <a href="http://www.mediaplaza.nl">http://www.mediaplaza.nl</a>)</li> <li>• Improve accessibility of cultural and scientific heritage via different projects to be continued: web sites, Netherlands Digital Heritage Consortium (cf. White paper on Culture 2001-2004), digital access to national cultural heritage <a href="http://www.minocw.nl/cultuur/mediabl.htm">http://www.minocw.nl/cultuur/mediabl.htm</a></li> </ul>

<p><b>C2. Encouraging ICT Skills in the future work force</b></p> 	<ul style="list-style-type: none"> <li>• Education On Line Action plan (previously Action Plan Investing in Progress) and Knowledge Network - Kennisnet, an Intranet which links government, educational institutions and organisations and which is connected to Internet (<a href="http://www.ictonderwijs.nl/documenten/pdf/OOLEN.PDF">http://www.ictonderwijs.nl/documenten/pdf/OOLEN.PDF</a> and <a href="http://www.kennisnet.nl">http://www.kennisnet.nl</a>). See below 3.2 for details.</li> <li>• Introduction of ICT as optional subject in second stage of secondary and pre-university education</li> <li>• Fiscal incentives for training efforts</li> </ul>
<p><b>Pillar D: Regulatory aspects</b></p>	
<p><b>D1. Equipping general regulatory and legislative provision for the information society</b></p> 	<ul style="list-style-type: none"> <li>• White paper on "Legislation for Electronic Highways" prepared by the Ministry of Justice and presented to Lower House in April 1999</li> <li>• The "Commission on Basic Rights in the Digital Age" to prepare an advisory report by May 2000 for Amendment of basic rights in digital Age</li> <li>• Policy Paper on liability of intermediate organisations</li> <li>• Policy papers on international developments</li> <li>• Continuation of "IT and Law Programme" ITER led by the Ministry of Justice for 4 years (<a href="http://www.nwo.nl/iter/index-eng.html">http://www.nwo.nl/iter/index-eng.html</a>)</li> <li>• Creation of a virtual reference centre</li> </ul>
<p><b>D2. To offer legal security</b></p>	<ul style="list-style-type: none"> <li>• Computer Crime Bill II and Data Protection Bill</li> </ul>
<p><b>D3. To create clarity concerning fiscal regimes</b></p>	<ul style="list-style-type: none"> <li>• Implementation of international agreement on fiscal regimes for e-commerce</li> <li>• Cabinet paper on fraud control 1998-2002 set up an ICT know-how transfer group, e-commerce and fiscal matters within the Tax service</li> <li>• Fiscal incentives for ICT participation and ICT use on the basis of the report "Taxes in a world without distance".</li> </ul>
<p><b>D4. To build confidence in the Information Society</b></p>	<ul style="list-style-type: none"> <li>• Trusted Third Parties: policy statement to the Lower House dealing with the preconditions to be satisfied by TTPs.</li> <li>• Electronic Commerce Code presented in November 1999. It was first eBusiness code of conduct in Europe. It deals with the questions of reliability, transparency and confidentiality required for etransactions and is designed for building business and consumer confidence in eBusiness.</li> <li>• Implementation of the I-pay system (Internet Payment System) of the joint Dutch banks and Interpay.</li> </ul>

<b>Pillar E: ICT in the public sector</b>	
<p><b>E1. To improve services provision to citizens and firms</b></p>   	<ul style="list-style-type: none"> <li>• Improved accessibility to Government via a nation-wide network of 3 Virtual Desks covering the areas of "Care and Well Being", "Businesses" and "Building and Living" (on the basis of experience gained with the OL2000 - Public Counter 2000 and ON21 programme <a href="http://www.on21.nl">http://www.on21.nl</a> and <a href="http://www.ol2000.nl">http://www.ol2000.nl</a>)</li> <li>• Improved accessibility to Government Information via the Portal web site <a href="http://www.overheid.nl">http://www.overheid.nl</a></li> <li>• Development of public information on Internet: Parliamentary proceedings, laws and regulation published on the Official Journal (Staatsblad), the Official Gazette - Staatscourant), decisions of Supreme Court, State Directory, etc.</li> <li>• Studies into impact of ICT performance of democracy and government organisations.</li> </ul>
<p><b>E2. To improve the internal performance of the government by ICT</b></p>	<ul style="list-style-type: none"> <li>• Development of government infrastructure with a Government Intranet (in June 1999, 40% of all government staff are able to use the Internet from their own workplace, internal e-mail exist at 93% and external e-mail at 90% versus 46% in 1998).</li> <li>• Enlargement of the number of authentic registrations (which collect and record basic particulars and make them available to third parties in a regular way).</li> <li>• Reduction of administrative burden (cf. reports from the Commission on the Administrative Burden which indicate that ICT could save about 250 million EUR annually): Programme to Streamline Basic Data</li> <li>• Expertise Unit operational since end 1999</li> <li>• Strengthening coordination function for ICT within central government. Appointment of directors and Cluster Forum on Electronic Government.</li> </ul>
<p><b>E3. To formulate more visibly the government's model (role) as an ICT player in the ICT market</b></p>	<ul style="list-style-type: none"> <li>• Pilot project on the introduction of electronic tendering (see further report "Innovative procurement in the Netherlands" and Action Plan on procurement at <a href="http://www.minez.nl/kennisent/innovatief/english.htm">http://www.minez.nl/kennisent/innovatief/english.htm</a>).</li> <li>• Pilot project on electronic remote identification using the European identity card</li> <li>• Study on electronic payments to/by Government</li> <li>• General Administrative Act (AWB) to be adapted to digital age</li> <li>• Development of an infrastructure platform for electronic identification</li> <li>• Support for use of TTPs by government</li> <li>• Support for e-commerce code within government</li> <li>• Framework for disclosure of government information completed end 1999</li> <li>• Promotion of digital sustainability (record keeping system, digital depot)</li> </ul>

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### 3. Further Developments: focus on recent initiatives

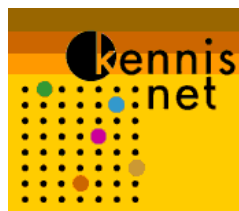
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#### 3.1 "Education On Line: connection to the Future": a new Action Plan for education (April 1999)

This new Action plan, presented in April 1999, follows the previous Actions Plan entitled "Investing in Progress". The total budget for 1999 up to 2002 will be 304 million EUR. An additional 150 million EUR will be dedicated for the period 2003 to 2010 (<http://www.ictonderwijs.nl/>).

The action plan is aimed at primary and secondary education as well as vocational and adult education. Its objective is to help pupils and teachers to be able to work with ICT as well as to use ICT in the learning process. Following three progress reports which were published within the first period and which found that developments in schools are not just dependent on government policy, it was decided adopted a "managerial" process. It means that schools may decide for themselves how and when to spend their budget on the purchase of computers, educational software, network management or training for teachers and managerial staff.

The Action contains several actions lines such as professional development of teachers and education managers (e.g. training, courses, computer driving licence for teachers (DRO) based on the international ECDL), promotion of educational software, attribution of budget to each school in order they purchase equipment and construct internal network sand the launch of KennisNet (Knowledge Network).



Kennisnet (<http://www.kennisnet.nl>) is an Intranet linking schools, colleges, libraries and museums. It is connected to the European SchoolNet as well. With 'kennisnet' students, teachers, parents, school-managers and anyone else with an interest in education can very easily get in touch with one another and the rest of the world. To facilitate this 'kennisnet' has a portal-site that is an easy reference to all relevant information on education but also to the internet in general.

Right now some 400 schools, colleges, libraries and museums are linked together in "kennisnet". Recently, in July 2000, the Minister announced that Dutch schools will not have to wait until 2003 as there has been a quicker integration of ICT in schools than expected. Instead of half-way through 2002, all schools will have been connected up to Kennisnet by the end of 2001. All pupils in the higher classes of primary schools will get their own e-mail address, even if their school is not yet connected up to the Knowledge Network. At the end over 10,000 schools and cultural institutions will be connected and over 3 million people will be able to access this network.

Also, in July 2000, the Ministry announced that it is making funds available to create a cultural component within Kennisnet. The aim is to make culture more accessible for educational purposes and to give it a higher profile within education. The cultural component will contain practical examples of the use of the arts and culture in education as well as ready-to-use materials for teachers and pupils. Cultural institutions will receive funding to enable them to produce digital information suitable for the Knowledge Network. There are already plans to open a virtual library. A competition will allow artists, technicians and education actors to contribute to developing new cultural-educational projects.

### 3.2 e-government: Contract with the future: A vision on the electronic relationship between government and citizen (May 2000)



In May 2000 a new policy paper "Contract with the future: A vision on the electronic relationship between government and citizen" has been sent to Parliament by the Dutch Cabinet (available in English at [http://www.minbzk.nl/pdf/eo/actie/contract\\_with\\_future\\_5-00.pdf](http://www.minbzk.nl/pdf/eo/actie/contract_with_future_5-00.pdf)).

This document is not a new action programme. It originates from the 1998 e-government action programme and its results are analysed within a progress report issued in late 1999. It is a visionary paper on the role of government in the Information Society. The paper is meant as a framework for future eGovernmental actions. A consultation has been launched: everybody, including people from other countries, are invited to make comments on this paper which will be discussed soon in the Parliament.

The first and the second part of the report, entitled "Freedom through Connectedness" and "Approachable Government" respectively present the "vision" and the impact on a number of aspects of government policy. It is written: *"at present, there is still insufficient clarity about the precise nature and extent of the activities to be undertaken in this context"*. This part contains proposals for exploratory surveys intended to provide a better basis for government information policy in the years ahead.

The part III of the document, entitled "Government in Flux" lists a number of actions that can and should be taken now to expand and consolidate those described in the e-government action plan from 1998. A brief summary of those actions is presented in the following table, while they may change according to the results of consultation and debates:



Vision	Action
<b>Innovative Government</b>	1. Government will make funds available for a thorough overhaul of its policy and operating processes. It will do this by acting as a launching customer and thus providing an extra boost for Dutch research and the development of ICT.
<b>Reliable Government</b>	2. Government will adopt procedures and rules of conduct in 2000 to guarantee the reliability of personal data. Attention will be paid to aspects of security and how this can be achieved through the use of the Public Key Infrastructure (PKI). The procedures and rules will be evaluated and thereafter certified. In addition, Government will produce proposals for gathering and collating knowledge of best practice concerning security measures for government information policy this autumn.
<b>Helpful Government</b>	<p>3. All municipalities in the Netherlands should have a website in 2002. The Union of Netherlands Municipalities will be consulted to determine how this objective can best be achieved. A model services catalogue will therefore be developed in 2000 and provided free of charge to all municipalities.</p> <p>4. A start will be made with territorially integrated pilot projects in 2001. The aim is to provide a complete range of electronic government services in a number of test areas.</p> <p>5. In 2001 it will be determined whether a financing facility can be created which encourages government sectors to invest in profitable ICT with a view to the provision of better services</p> <p>6. Dutch Government will establish an ICT implementation organisation in 2000 which will have the following functions:</p> <ul style="list-style-type: none"> <li>• implement ICT programs in government organisations</li> <li>• certify organisational consultancies and ICT companies which will offer the Public Counter 2000 approach</li> <li>• monitor the progress made in the electronic services</li> <li>• gather and exchange information about best practice in the Netherlands</li> </ul>
<b>Government for everyone</b>	<p>7. Government will establish an expertise centre for innovative decision-making in 2000 as part of the ICT implementation organisation. This centre will gather information about best practice, advise government organisations on the establishment of interactive, ICT-supported decision-making and develop consultative processes and ICT means for supporting these processes. In addition, it will gather information and produce guidelines on the combination of innovative decision-making and democratic legitimacy.</p> <p>8. Dutch Government will implement the Remote Voting (KOA) project. The object is to develop a system that will enable voters to cast their vote at any polling station in the Netherlands. It is planned to test the system for the first time during the elections in 2003 that come under the Franchise Act. A study is also being made to ascertain whether voting from home or workplace is possible.</p> <p>9. Dutch Government will create 34 "digital playing fields" in the 30 major cities. They should have the function traditionally fulfilled by the empty neighbourhood plots where children have traditionally played and kicked a ball around. The playing fields can improve social cohesion in a neighbourhood since everyone can simply enter and be helped to acquire the skills needed in the Information Society. However, they can also play an important function in providing further training for young people and thus enabling them to take a step up the ladder towards a regular job in the ICT sector.</p>

### 3.3 Recent development concerning Internet and e-commerce

- **Netherlands Goes Digital, an wide Internet and e-commerce initiative:** on April 28, 2000, in a bid to boost Internet and e-commerce in order to catch up with Sweden and Finland in the race for Internet and e-commerce prominence, the Dutch government allocated 771 million EUR to an interministerial Internet initiative called "Netherlands goes digital" (Nederland gaat digitaal - <http://www.nederlandgaatdigitaal.nl/>).



Nederland gaat digitaal.

The initiative will draw upon the departments of education, large cities, justice, and transport in an attempt to coax students and small businesses onto the Internet.

The money will be allocated primarily to schools and universities. It is planned that 12,000 institutions nation-wide will get broadband Internet access by 2002. They will be also allocated to companies: according to the government, only one fifth of very small businesses engage in e-commerce while a further 14% said they intend to conduct e-commerce in the near future.

- **E-Commerce Monitor:** Following the Electronic Commerce Action Plan published in April 1998 by the Ministry of Economic Affairs it became clear that there were no statistics on this subject. Instead, there is much speculation in the Netherlands and abroad about e-commerce; many forecasting studies have been carried out. However, since a variety of definitions, questioning techniques, methods of analysis and sources have been applied, it is extremely difficult to compare the various results of these (market) studies.

Therefore, there is a need to improve measurement of the digital economy. This issue only gained real importance quite recently e.g. within the OECD and Eurostat. Since many countries are wrestling with this problem (OECD workshop), the Dutch Ministry of Economic Affairs has asked for advice regarding the development of an e-commerce monitor. An advice Paper has been prepared by the Ministry which is based on lessons learned from analysing a number of national and international (market) surveys of electronic commerce. It is intended as a contribution to the national and international discussion on measurement of the digital economy (<http://www.minez.nl/kennisent/ecom/engels/why.htm>).

A consultation has been launch online on this advice paper. Comments will be integrated to form the foundation for the development of the envisaged monitor. The goal is to have a model monitor completed in the first quarter of 2000, so that as from the last quarter of that year figures on electronic commerce will become available on a periodical basis. This monitor will also form one of the building blocks for the ICT benchmark, which was announced in The Digital Delta.



# Portugal



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## Introduction

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The Information Society in Portugal is less developed than it is in other western European nations. Portugal is ranked in 14<sup>th</sup> place in the European Union by the 2000 Information Society Index (IDC/World Times Survey) and 26<sup>th</sup> within the sample of 55 countries. Among the lowest in the region in average disposable income, Portugal has been slow in liberalising telecommunications. However, the country is experiencing a catch-up with other EU countries, which should be encouraged by the total liberalisation of the Portuguese telecom market engaged in January 2000.

There are several indications which show that things are about to change. The Internet is becoming popular and Internet-based services are expanded quickly. A recent study in March 2000 by Warburg Dillon Read concludes that there are presently 670,000 Internet users i.e. 6.8% of the population - defined as subscribers to Internet service providers (ISPs) as opposed to 0.6% in 1996. IDC predicts that around 2.6 million Portuguese (26%) will use the web frequently by the year 2003. The hostcount by DNS domain was about 9.1 per 1000 inhabitants in January 2000 versus 2.4 at the end 1996. There were 18.6 computers per 100 inhabitants in 1999 compared with 11 in 1996.

This move is strongly supported by the Portuguese Government. As soon as it took office in 1995, it committed itself to make the Information Society a priority in its programme and started to take actions to promote the use of ICT. In May 1996, the Government launched the "Portuguese Initiative for the Information Society" and created a permanent team chartered to give impulse to and monitor IS development under the leadership of the Minister of Science and Technology, the "Missão para a Sociedade de Informação. In April 1997, a Green paper on the Information Society was published, followed a few months later by an Action Plan. For the first time, IS issues became an integral part of planning policy instruments (National Employment programme, Grandes Opções do Plano) and major national guidance papers.

In 1999, an appraisal of achievement to-date showed good results but the Portuguese Government is determined to redouble its efforts to close the gap with other EU countries and to enter into the Information Age. In the framework of the Third Community Support Framework 2000-2006 it has prepared a new programme "Towards a knowledge-based Information Society 2000-2006: Operation "Information Society". Between 1.35 billion EUR and 1.45 billion EUR should be dedicated to Information Society over the 2000-2006 period.

Also, the Portuguese Presidency during the first semester of 2000 committed itself to give a strong impulse to "Bringing Europe into the Information Age". The Special European Council devoted to "Employment, economic reforms and social cohesion - for a Europe of innovation and knowledge", held on 23-24 March 2000 in Lisbon and the Feira European Council of June 19-20 dedicated to Information Society provided one of the milestones in the Portuguese Presidency by endorsing the comprehensive eEurope 2002 Action Plan "An Information Society for All".

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# 1. From the Green Paper on Information Society to implementation of actions

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## 1.1 Information society: a priority for the Portuguese Government

The Portuguese initiative, for the creation of an Information Society, is firmly grounded in the Programme of the 13<sup>th</sup> Constitutional Government, which outlined the Government's intentions for the period 1995-1999 and in the Planning Options for 1996, which set out the lines of action for the first year of the Government.

By a resolution of the Council of Ministers, the Government launched its **National Initiative for Information Society** ("Iniciativa Nacional para a Sociedade da Informação"). It consisted of promoting a wide national debate with society, enterprises and key actors allowing the development of a diagnostic of the situation and needs as regards telecommunications and ICT. Furthermore it defined concrete actions for a co-ordinated governmental policy.

Four main priorities were already outlined:

- schools (Schools with Information),
- local and central public administration (Open Government),
- sources of information (libraries, museums, data-bases, scientific institutions etc.) (The Knowledge Available) and
- companies (The Computerised Enterprise).

In March 1996 the Council of Ministers created the "**Missão para a Sociedade de Informação**" or MSI (Mission for the Information Society - <http://www.missao-si.mct.pt/>) with a mandate of 3 years, to support the Ministry of Science and Technology, a new ministry created in 1995 and headed by José Mariano GAGO.



The MSI is chaired by a representative of the Ministry of Science and Technology and comprised a personal representative of every other Minister and three experts designated by the Minister of Science and Technology.

The following tasks have been assigned to MSI:

- to foster a nation-wide debate on the Information Society, with a view to preparing a Green Book specifically containing proposals for short, medium and long term measures,
- to formulate suitable measures to be taken in global and sectoral terms, in close co-operation with all ministries, in order to put the Government Information Society Programme into practice,
- to monitor the effects of the measures taken by the Government in this field and to conduct an evaluation,
- to monitor international developments, on a technological and social level, that will have a predictable impact on the conditions for developing the Information Society in Portugal,
- to represent Portugal in the various European Union scientific and technological research programmes directly oriented towards important policies for the Information Society.

## 1.2 Green Paper for the Information Society in Portugal (April 1997)

In 1996 and 1997, MSI started to draft a Green Paper on Information Society. At the beginning of 1997, several seminars were organised at the national level in order to favour an open discussion on these issues.



At the end of this process, the "**Green paper for the Information Society in Portugal**" was adopted by the Cabinet of Ministers on 17 April 1997 and approved by the Parliament on April 30, 1997. This Green Paper has become an essential reference point for the move towards the Information society, combining a wide range of major strategic options and a coherent body of concrete measures.

The Green Paper identified a wide spectrum of political and technical measures whose implementation affects the sectoral policies of several ministries and thus the society at large. It addressed the following 11 topics:

<p><b>1. The Democratic Character of the Information Society</b></p> <ul style="list-style-type: none"> <li>1.1 The Information Society and Democracy</li> <li>1.2 Access to the Information Society</li> <li>1.3 The Fight Against Inequality</li> <li>1.4 Social Responsibility for those Requiring Special Consideration</li> <li>1.5 Measures</li> </ul>	<p><b>6. Employment in the Information Society</b></p> <ul style="list-style-type: none"> <li>6.1 The Information Society as a Model of an Intellectually Creative Society</li> <li>6.2 The Job Market in the Information Society</li> <li>6.3 A Contribution to the New Employment Framework in the Information Society</li> <li>6.4 Occupational Training and the Assimilation of Information Technology</li> <li>6.5 Increasing the Competitiveness of Portuguese SMEs</li> <li>6.6 Measures</li> </ul>
<p><b>2. Open Government</b></p> <ul style="list-style-type: none"> <li>2.1 Improving the Efficiency of the Public Administration</li> <li>2.2 A Framework to Stimulate the Adoption of Information Technology in the Public Administration</li> <li>2.3 Digital Access to Public Information for the Citizens and Industry</li> <li>2.4 The Electronic Network Linking Public Bodies</li> <li>2.5 Electronic Records</li> <li>2.6 Publicising Information among Citizens and Enterprises</li> <li>2.7 Electronic Democracy</li> <li>2.8 Measures</li> </ul>	<p><b>7. The Market and the Information Industry</b></p> <ul style="list-style-type: none"> <li>7.1 The Convergence of Information, Telecommunications and Audio-visual Technologies</li> <li>7.2 The Content Industry</li> <li>7.3 The Software Industry</li> <li>7.4 The Electronics Industry as a Support for the Information Society</li> <li>7.5 The Audio-visual and Entertainment Industries</li> <li>7.6 The Telecommunications Industry</li> <li>7.7 Measures</li> </ul>
<p><b>3. The Knowledge Available</b></p> <ul style="list-style-type: none"> <li>3.1 The Electronic Network for Scientific Research, Culture and Education</li> <li>3.2 Development of Digital Libraries</li> <li>3.3 Digitalisation of our Cultural Heritage</li> <li>3.4 The Lusitanian Diaspora and the Spread of Portuguese and our Cultural Heritage</li> <li>3.5 Measures</li> </ul>	<p><b>8. Social Implications of the Information Society</b></p> <ul style="list-style-type: none"> <li>8.1 Improvement in the Population's Social Welfare and Quality of Life</li> <li>8.2 Computer Literacy and Info-Exclusion</li> <li>8.3 Privacy and the Protection of Individual Rights</li> <li>8.4 Protection of Minors</li> <li>8.5 Support of Socially Handicapped Groups</li> <li>8.6 Measures</li> </ul>
<p><b>4. Connected Schools: Learning in the Information Society</b></p> <ul style="list-style-type: none"> <li>4.1 Objectives and Challenges for the Informed School</li> <li>4.2 Strategic Dynamisation</li> <li>4.3 Equipping School Establishments</li> <li>4.4 Teachers' Qualifications for the Information Society</li> <li>4.5 The Academic and Research Network</li> <li>4.6 Impact Studies and Assessment</li> <li>4.7 Measures</li> </ul>	<p><b>9. The Legal Implications of the Information Society</b></p> <ul style="list-style-type: none"> <li>9.1 Protection of Privacy and Data for Individuals, Enterprises and Institutions</li> <li>9.2 Electronic Notary Service</li> <li>9.3 Electronic Documents and Transactions</li> <li>9.4 Intellectual Property Rights and Copyright Protection</li> <li>9.5 Measures</li> </ul>

<p><b>5. The Business Enterprise in the Information Society</b></p> <p>5.1 The Information Industry's Business Sector as a Strategic Development Sector</p> <p>5.2 Business Competitiveness in the Global Environment of the Information Society</p> <p>5.3 Traditional Industries and the Information Society</p> <p>5.4 The Information Society and Reinventing the Organisation of Work</p> <p>5.5 Adapting Business Start-ups to the Information Society</p> <p>5.6 Telework</p> <p>5.7 Electronic Commerce</p> <p>5.8 Measures</p>	<p><b>10. The National Information Infrastructure</b></p> <p>10.1 An Efficient and Accessible National Information Infrastructure</p> <p>10.2 Liberalising the Telecommunications Sector</p> <p>10.3 Accessibility in the Information Society</p> <p>10.4 Encouraging New Services and Applications</p> <p>10.5 The Confidentiality and Security of Information</p> <p>10.6 Measures</p>
	<p><b>11. Research and Development in the Information Society</b></p> <p>11.1 R&amp;D in the Context of the Information Society</p> <p>11.2 A National R&amp;D Programme to Support the Development of the Information Society</p> <p>11.3 Interaction with Programmes of International Scope</p> <p>11.4 Measures</p>

In this Green Paper, guidelines and 72 measures for action were outlined covering all the above areas mentioned (The English version of the Green paper is available in <http://www.missao-si.mct.pt/english/greenpaper/index.html>).

It was planned to set up 15 Task-Forces to establish the programmes of action that would enable progress from the strategic measures outlined in the Green Paper. In fact, 3 months after the approval of the Green Paper, a Forum was convened to discuss the implementation plans for the 72 proposals contained in the Green Paper, developed by Tasks Forces or by the MSI staff.

This Forum was a major event with participants from all areas addressed in the Green Paper. Over the three days of the Forum, the experts discussed in parallel sessions a series of topics. The main outcomes of this event were:

- To highlight some of the more important Information Society projects which have been launched or reinforced in the previous months.
- To identify the main barriers existing in Portugal against the implementation of an Information Society in the country.

As was pointed out in the Closing Plenary session, the main obstacles to the implementation of the 72 measures included in the Green Paper are cultural ones, both at the level of citizens at large and also in the Public Administration.

### **1.3 Implementation of the Information Society Green Paper and Appraisal of achievements**

In 1999 the Ministry of Science and Technology published a report on the process of transformation of Portuguese society between 1995 and 1999 (<http://www.oct.mct.pt/en/highlights/informationSociety/index.htm>).

It is hoped that this text will contribute to a national debate on the country's development, with a view to transforming Portugal into a modern knowledge-based Information Society. In fact, in October 1999, the Prime Minister Antonio Guterres was re-elected at the head of the XIV Constitutional Government. In a speech delivered at the ceremony for office taking, he re-affirmed the government's commitment to develop the Information Society in Portugal: *"by the end of the first quarter of the 21st century, the group of developed countries will be composed of those nations who, as from today, promote the widespread use of information technologies – computers, the Internet, information highways, and enable their citizens to access the Society of Information and Knowledge. In this field we have therefore set ambitious goals with a view to skipping a few stages and achieving the quantum leap that will enable us to join the leading countries in every relevant domain"*.

The report is summarised in the following table and it is available in an English version at <http://www.cordis.lu/portugal/infosoc.htm>

### Priority 1: Bringing Technology to the Masses and ensuring an equal distribution of information

Creating the conditions for mass use of ICT, providing increased opportunities for on-line access in public areas, encouraging the use of Internet in schools and libraries.

#### Achievements



- Creation of the **Rede Ciência, Tecnologia e Sociedade – RCTS** (Science, Technology and Society Network) which links universities, polytechnic institutes and R&D institutes with high speed connections (<http://www.rcts.pt/>)
- **Internet in Schools - Internet na Escola** – programme is being developed by the Educational Telematics Network Support Unit (Unidade de Apoio à Rede Telemática Educativa – UARTE - <http://www.uarte.mct.pt/>), in co-operation with the National Computer Science Foundation (Fundação para a Computação Científica Nacional - FCCN - <http://www.fccn.pt/>) and regional governments, local authorities. It includes equipment in multimedia equipment with ISDN connection through RCTS, stimulation and training, production of scientific and technological content, forum, schools web sites and projects.  
In addition, some 250 public libraries and 15 museums have been connected and the Government has supported initiatives launched by the Autonomous Regions of Azores and Madeira ("Rede Sociedade de Informação Açores"; Madeira Integrated schools network project, "Açores, digital region").
- **21st Century NONIUS programme** - Programa NÓNIO Século XXI: launched by the Ministry of education in 1996, this ICT in education programme aims to set up NONIUS Skill Centres based in higher education institutions (<http://www.dapp.min-edu.pt/nonio/nonio.htm>) to develop projects, educational software, multimedia applications and products. In 1999, Internet mails have been provided to teachers (**Profmail** system).
- **Inforjovem programme**: creation of 170 "Inforjovem" centres in 60% of municipal councils, to provide training in ICTs to 300,000 young people for improving employment prospects.
- **Regulation of Internet access charges and promoting online access** (rate agreements, incentives)
- **"Computers for All" Initiative**: the aim of this programme was to provide incentives for the use of computers via tax allowances for buying PC equipment and software.
- **National Initiative for People with Special Needs in the Information Society** - Iniciativa Nacional para os Cidadãos com Necessidades Especiais na Sociedade da Informação : started in March 1998 by the Ministry of Work and Social Services, this programme aims at allowing mentally and physically handicapped people and elderly to benefit from the Information Society in public services, transports, trade and Finance services; telecommunications, housing, employment, education and training, health, leisure etc. (<http://www.missao-si.mct.pt/incne/>). In August 1999, it was decided to reinforce actions in this field.

## Priority 2: Creating Digital Cities

Launched by the Ministry of Science and the Technology in 1998, this Programme aims to develop Digital services in an integrated way within cities (based on RCTS network) and to improve the quality of life.

### Achievements



The program is organised in two phases. The first one took place between 1998 –1999 and focused on four areas in a small number of cities (7.5 million EUR). The Second phase started at the beginning of year 2000 to last until 2006 (<http://www.mct.pt/CidadesDigitais/>).

The following projects were approved as part of phase 1 of the project:

- **Aveiro** – A comprehensive Digital City, the first chosen to be a digital city (<http://www.aveiro-digital.pt/>)
- **Marinha Grande** – To promote global competitiveness
- **Bragança** – To fight interiority (<http://www.braganca-digital.pt/>)
- **Guarda** (<http://www.domdigital.pt/guarda-digital>)
- **Greater Lisbon and Setúbal** – To prevent info-exclusion for the integration of ethnic minority groups (<http://www.mimaior.pt/>)

## Priority 3: Promoting The Digital Economy

On the basis of a guidance paper entitled "strategic vision for meeting the challenge of the 21<sup>st</sup> Century" and of the National and Economic Development Plan (PNDES) of 1998, it has been decided to put ICT at the heart of the process of generating new forms of activity. In co-operation with several business associations - e.g. Alliance for the Digital Economy (<http://www.apdc.pt>) - several major initiatives have been launched by the Government

### Achievements



- **The National E-Commerce Initiative** - Iniciativa Nacional para o Comércio Electrónico : Recognising the strategic importance to the Portuguese economy in developing e-commerce, the government created in September 1998 an action programme (<http://www.missao-si.mct.pt/english/ince/r94.html>) It aims to define:
  - a legislative and regulatory framework (digital signatures, electronic invoice);
  - incentives for Internet use and for other electronic means of trading;
  - a basic framework of harmonised rules (security of transactions, protection of personal information and privacy, consumer protection, and protection of intellectual property rights).Two decrees-Laws have been approved in 1999: one on electronic invoices and one on digital signatures (<http://futuro.missao-si.mct.pt/INCE/>).
- R&D projects in the framework of the **PRAXIS-Consortium research** programme (<http://www.adi.pt/praxis/welcome.html>)
- **PRATIC** programme (IT in industrial projects)
- Portuguese **multimedia industry**: MOSAICO initiative and Instituto do Cinema Audiovisual e Multimédia Support
- **INFOTUR project**: Internet for the tourism industry (<http://www.portugal-insite.pt/>)
- **Mercúrio project**: ICT and e-commerce in the retail sector (<http://www.mercurio.pt>)



#### Priority 4: Increasing Portuguese Content on the Internet

The percentage presence of Portuguese on the Internet is only 1.1% (versus 75% for English). One of the strategic objectives announced by the Prime Minister is to multiply by a thousand times the amount of Portuguese content in cyberspace.

##### Achievements

- A Resolution of the Council of Ministers of August 1999 made it compulsory for ministries, public services and institutes, to make their publications, the forms they use and whatever information they produce for publication available to the public on the Internet in digital form.
- Awareness campaign within the administration
- Launch of a R&D programme on the systems processing of the Portuguese language: software for handling Portuguese in written and spoken form is to be designed and published for world-wide use (<http://www.portugues.mct.pt/>).

#### Priority 5: Modernising The St@te in The Information Society

The highlight of government action between 1995 and 1999 was the importance attached to the use of ICT by central administration. It brought significant cost reductions and many new opportunities – thus creating a favourable climate for innovation and change in the provision of public services to companies and individuals.

##### Achievements



- **New Links and information and services with Portuguese Communities World-wide:** Actions of the Foreign Ministry and Portuguese consular network project.
- **More and Better civic Information through ICT**
- Decree-Law of 1999 established a system of rules applying to how public service departments should receive and deal with the general public: guidelines including Internet, Internet access in public spaces, e-mails contacts for administration.
- a "**permanent observatory for administrative modernisation**" was established by the Secretariat for Administrative Modernisation (<http://www.sma.pt>).
- **INFOCID service** (Citizens' Information), created in 1991, as an "interdepartmental administrative information system for users of public services" has been adapted and offers a range of publicly useful services online via the Internet and in other types of media according to the needs of various different target audiences (<http://www.infocid.pt/>).
- **Launch of other numerous projects:** Interdepartmental Citizen's Information System, multimedia kiosks, Citizens' Shops (Lojas do Cidadão - <http://www.lojadocidadao.pt/>), multimedia areas in national museum and national monument shops
- **Growth of institutional Internet sites during 1995** and within the Portuguese administration (e.g. The Official Journal (Diário da República - <http://www.dr.incm.pt/>)
- **TERRAVISTA project:** free web hosting for thousands of individual web sites and creation of a vast Portuguese-speaking virtual community (<http://www.terravista.pt/>), including the 1999 project "People and places" (Projecto Gentes e Lugares) for a new push to Internet use as a working tool and as an instrument for generating more and better Portuguese content
- **Improved efficiency of Special Needs Social Services**
- **Specific Department Measures e.g.:**
  - **Health:** extensive information system on the Internet (<http://www.min-saude.pt/mapa.html>); Health Information Network (Rede de Informação de Saúde - RIS <http://www.ris.min-saude.pt/>); National Health Service User Card, telemedicine projects and interconnections of hospitals.

	<ul style="list-style-type: none"> <li>- <b>Education:</b> Information and Communications Network of the Ministry of Education (RICOME - Rede de Informação e Comunicações - <a href="http://www.dapp.min-edu.pt/dapp/ricome.htm">http://www.dapp.min-edu.pt/dapp/ricome.htm</a>)</li> <li>- <b>Employment and Social Security</b> : civic information (<a href="http://www.mts.gov.pt/">http://www.mts.gov.pt/</a>), Labour and Employment Bulletin (<a href="http://www.deppmts.gov.pt/catalogo/bte.html">http://www.deppmts.gov.pt/catalogo/bte.html</a>), TELEPORTO project (network of tele-centres in Porto region)</li> <li>- <b>Justice</b> : communications network for the Ministry of Justice - DIGESTO project (Integrated system for juridical information treatment)</li> <li>- <b>Home Affairs:</b> police projects (SIGPOL, INOVAR), population census files, electoral procedures and election results, REGIfreg programme,</li> <li>- <b>Tax:</b> Tax and Customs Computer Network, known as RITTA, Taxpayers' Register project, Virtual Tax Office, Electronic Taxpayer's Card (October 1999).</li> </ul>
<b>6. Meeting The legal Challenges of the Information Society</b>	
<b>Achievements</b>	<p>The full liberalisation took place on 1 January, 2000, with the opening up of the fixed telephone service to free competition. New responsibilities were given to the Portuguese Communications Institute -ICP - (<a href="http://www.icp.pt/publicacoes/index.htm">http://www.icp.pt/publicacoes/index.htm</a>). Until 2000, much regulatory work has been achieved, in application of the European directives. The basic law is the "Basic Telecommunications Law" – Law 91/97 of 1 August, 1997. Several Resolutions of the Council of Ministers also helped to define the Information Society strategy.</p>

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## 2. Towards a knowledge-based information society: Operation Information Society 2000-2006

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The Portuguese Government was satisfied by the appraisal of its achievements. However, it considered that it needed to redouble its efforts and lay the foundations for the future. The appraisal consisted of the recommendations of the White Paper on Scientific and Technological policy for the years 1999-2006 (<http://www.mct.pt/Livro-BrancoCT/>) as well as of the contributions of the Permanent Forum on Scientific and Technological Policy (Forum permanente da Política Científica e Tecnológica (<http://www.mct.pt/ForumCT/>)). Therefore, still in the framework defined by the National Information Society Initiative from 1996 and the Green Paper for Information Society, it was decided to give a new impulse to Information Society policy for the coming years.

The drawing up of the Third Community Support Framework was a *"unique and decisive opportunity to overcome backwardness, to reinforce competitiveness and to push ahead with the advance of the Information Society in Portugal"*. To this end the government, through the Ministry of Science and Technology, prepared and submitted to the Community institutions an action programme specifically directed at the development of the Information Society, linking various sub-programmes. This new programme called "the Operation Information Society" has also coincided with the preparation of the eEurope (<http://www.mct.pt/qca/posi/posi.htm>) and <http://www.oct.mct.pt/en/highlights/informationSociety/index.htm>).

This new programme covers the period 2000-2006. It will be financed by Structural Funds (RDF, ESF) and by corresponding Portuguese government funding, complemented by national investment funding programmes, such as the PIDDAC programme for Science, Technology and Information Society. The indicative figures for 2000-2006 indicate a total varying between 1.35 billion EUR and 1.45 billion EUR, which breakdown as follows:

- Operation Information Society: around 700 million EUR (375 million EUR of structural funds i.e. 53.6%)
- Other programmes from PIDDAC: between 650 million EUR and 750 million EUR.

## **2.1 Objectives and targets**

The objectives and targeted results are the following:

- Promote the widespread general use of the Internet;
- Create an environment in which it will be possible to supply on a mass scale products which are suitable for the family market: the target is to multiply by a factor of 4 the number of net-connected computers in Portuguese homes;
- Create public areas for Internet access and make e-mail generally available to the whole Portuguese population (over a million in 3 years);
- Broaden the coverage of the RCTS network to all schools and groups of schools in the first cycle of basic schooling (it already covers all the other types of schools and public municipal libraries), as well as to cultural and scientific associations, on a free of charge basis for users, and to provide support for the production and use of content;
- Extend the Digital Cities programme to the whole country;
- Approve and carry out a programme to multiply Portuguese content on the Internet a thousand-fold;
- Launch a national training and certification campaign for basic computer literacy and information technology skills;
- Make a diploma in basic information technology skills a requirement for concluding compulsory schooling, so that no student will finish school without having certified IT skills;
- Work towards achieving the goal of one-stop service for each administrative act, and to ensure that information systems are in general use in all departments of the state administration;
- Drastically reduce the use of paper in the state administration, extending the use of digital media for communication and storage purposes;
- Encourage the process whereby all public entities make available on the Internet all the information they publish;
- Work as quickly as possible towards a situation in which at least 25% of the state's transactions are carried out electronically;
- Launch and execute the first National Information Super-highways Plan, promoting the supply of services, interconnection, and the use and regulation of broad-band networks, ensuring the full development of this system which is fundamental for the future of the country;
- Launch a Research, Development and Demonstration programme in the systems processing of the Portuguese language, in its various aspects.

Some tools enabling the monitoring of the progress towards these targets have been implemented by the Government. In particular, at the beginning of 1999, the OCT - Observatório das Ciências e das Tecnologias (Science and Technology Observatory) embarked on a new area of work: the production of statistical indicators for the Information Society (<http://www.oct.mct.pt/>).

## 2.2 Programme content

Operation Information Society is organised into 4 sub-programmes:

Sub-Programme 1 – Developing Skills

Sub-Programme 2 – Digital Portugal

Sub-Programme 3 – The Open State: Modernising the State Administration

Sub-Programme 4 – Observation, Monitoring and Assessment



Sub-programmes	Measures to be continued or implemented
<p><b>1 – DEVELOPING SKILLS</b></p> <p><u>Objective:</u> to provide training to all and to provide certification of skills in Information Science and Technology</p>	<ul style="list-style-type: none"> <li>• Launch of a basic national training and certification programme in IT.</li> <li>• The Basic IT Diploma (citizenship diploma) as a part of basic school curriculum.</li> <li>• Introduction of a system for certifying IT skills at various levels for occupational purposes.</li> <li>• Scholarships to assist in obtaining degrees in specialised subjects, master’s degrees or doctorates, or for carrying out specialised studies or post-doctoral studies in universities, scientific institutions, corporations and other institutions both in Portugal and abroad.</li> </ul>

Sub-programmes	Measures to be continued or implemented
<p><b>2 – DIGITAL PORTUGAL / Internet Initiative</b></p> <p><u>Objective:</u> to spread rapidly the use of computers and the Internet for all and avoid exclusion linked to economic factors (high cost of equipment and communications), technical and cultural factors and motivational factors (resulting from a limited diversity of content and services).</p>	<p><b>Access</b></p> <ul style="list-style-type: none"> <li>• Encouraging a competitive climate + personal tax incentive scheme for the purchase of PCs, terminal equipment and software for domestic use;</li> <li>• Setting up the "All on the Net" programme: free e-mail systems; national network of public spaces with reduced prices / free;</li> <li>• Extending the RCTS network to all primary schools by 2001 and to all cultural and scientific associations, on a free basis for users and with a view to assisting everyone in discovering content;</li> </ul> <p><b>High-capacity interconnected networks:</b></p> <ul style="list-style-type: none"> <li>• Drafting, publicising, publishing and regular updating of a map of the major digital highways, as a basis for planning and public and private investment;</li> <li>• Encouraging the development of advanced services in a high-capacity network by means of competition;</li> <li>• A programme to make available a high-capacity network for scientific and educational purposes as well as for demonstration of socially useful new services (RCTS-2) and linking them with international Internet 2 programmes.</li> </ul> <p><b>Encouraging the supply and demand of content in digital forms:</b></p> <ul style="list-style-type: none"> <li>• making public information available in digital form</li> <li>• promoting the production and purchase of digital content by the State</li> <li>• progressive reduction of paper-based information in State offices</li> <li>• incentives programme for the expansion of the digital multimedia industry</li> <li>• Adaptation of the State's own promotional policies to the Internet.</li> <li>• Extension of the Digital Cities programme to all cities in the country, by encouraging regional partnerships and the use of innovative models for the building of Digital Portugal, based on distance working</li> <li>• Emphasis on guidelines included in the National IS Initiative from 1996: Development of the Open State ("Estado Aberto"); Available Knowledge and knowledge sharing through networks and collaborative schemes; The Information-based School ("A Escola Informada") and the Flexible Enterprise ("A Empresa Flexível" - networked technological parks, telework, collaborative distance working, e-commerce applications and volume multiplied by 100). The measures to be taken this field will be closely linked to the state's own role in developing e-commerce. The estimate is that in 2003 around 25% of commercial transactions will be via E-commerce</li> <li>• Setting-up of a Portuguese Telematics University</li> <li>• Launch of a R&amp;D and demonstration programme in the area of the systems processing of the Portuguese language.</li> <li>• Specific support to R&amp;D projects and programmes focused on ICT within the R&amp;D national programme</li> </ul>

<p><b>3 – THE OPEN STATE: MODERNISING THE STATE ADMINISTRATION</b></p> <p><u>Objective:</u> to achieve an "Open State."</p>	<ul style="list-style-type: none"> <li>• Systematic promotion of the widespread use of ICT in the managing, processing, filing, and in exchange of information between departments of the state administration, the public in general and social and economic actors.</li> <li>• Together with programmes to simplify and reduce administrative bureaucracy and making administrative information which is of public interest available by telematic means, this sub-programme aims to enable the state administration to operate in new open and integrated ways.</li> </ul>
<p><b>4 – OBSERVATION, MONITORING AND ASSESSMENT</b></p> <p><u>Objective:</u> to monitor the policy measures which have been implemented and to produce assessment reports.</p>	<ul style="list-style-type: none"> <li>• Development of observation and analysis tools</li> <li>• Development of indicators reflecting the degree of penetration and use of ICT.</li> <li>• Co-ordination of the work of various widely dispersed institutions which produce relevant information.</li> <li>• Development of new methods and observation tools which reflect the fact that the Information Society cuts horizontally across all areas of activity</li> <li>• International cooperation (OECD and EUROSTAT).</li> <li>• Setting up of an independent, public and external audit assessment.</li> </ul>

### 2.3 Recent developments

- **A new organisational structure**

In order to better co-ordinate its Information Society policy, the Government decided to reinforce the role of the Minister of Science and Technology as the main co-ordinator of Information Society Policy in Portugal. However, the interministerial co-ordination will also be reinforced. Thus, each Minister has to nominate a core structure responsible for IS issues within its ministry. An Interministerial Committee for Information Society will group together these IS ministerial structures, under the responsibility of the Minister of Science and Technology.

- **Launching of the Internet Initiative - Iniciativa Internet**

In August 2000, the Internet Initiative, which is part of Digital Portugal and the "Information Society Operation" was approved by the Portuguese Council of Ministers (<http://www.mct.pt/novo/legislacao/despachos/iniciativa.htm>). The Internet initiative will ensure among others, that all schools will have internet access by the end of the year 2001, all teachers will be IT literate by 2002, and that a majority of the main public services will be accessible on the web by 2003.

- **Liberalisation process**



In July 2000, the Instituto das Comunicações de Portugal (ICP) published an updated calendar Timetable of Telecommunications Liberalisation until 2002

According to ICP chairman, "ICP's objectives are based upon the creation of open network conditions, increased competition and a regulatory regime as pro-active as possible." (<http://www.icp.pt/actual/calendariouk.html>.)

Among recent measures, one can note:

- On July 10, 2000, a public consultation and survey on Local Loop Unbundling was launched. This means that Portugal Telecom would open its local infrastructures to the other operators, which is to take place up until 30 June 2001. The public survey document is already available and can be consulted at <http://www.icp.pt/oll/index.html>.
- On August 4, 2000, ICP opened a public tender for the granting of four third generation mobile licences of national scope to IMT2000/UMTS operators. The licences will be subject to both the payment of an 'entrance fee' to the state, and to limitations regarding company shareholding. The licences will be granted before the end of the year, enabling trading to commence on 1st of January 2002.





# Spain



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## Introduction

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Spain still lags behind many of its northern European counterparts. It is ranked 24<sup>th</sup> by the 2000 Information Society Index (IDC/World Times Survey) and 13<sup>th</sup> among EU Member States, before Portugal and Greece. The reasons often indicated are infrastructure deficiencies, insufficient investments in R&D, low equipment of computers at home and in businesses and the limited presence of the Spanish language on Internet. Not fully convinced about benefits of Internet, only 30% of Spanish companies are connected to the Internet. The majority is failing to adopt e-business solutions. Less than 10 % conduct their transactions through the web.

However, over recent years, there has been significant progress in catching up with other European countries and the ITC market in Spain is experiencing many changes. Today, the ICT sector is the most dynamic sector of the Spanish economy. According to SEDISI, the Spanish association of Information Technology companies, the turnover exceeded 12.2 billion EUR in 1999, i.e. a growth of 19% in one year. In the first trimester of 2000, this growth was already 6.1%. In one year, 10,000 jobs have been created. Almost 23.2% of Spanish households have a computer. The Internet market is currently exploding thanks to a free access service offered in June-July 1999 by leading service providers: The number of new users increased by one million between the end of 1999 and mid-2000, when there were 4.6 million Spaniards with Internet access (11.7%). By 2003, it is estimated that 50% of Spanish homes will have personal computers and 20% of home users will be accessing the Internet.

These profound changes are due to the positive effects of liberalisation as well as the proactive approach of the Government, which has worked on a package of measures to promote the increase used of ICT. After a period dominated by individual ministerial programmes, oriented towards technological development, the Government began to develop a more integrated and coordinated policy, oriented to Information Society applications and Internet development in 1998. This approach resulted in a Strategic Initiative for Information Society published in January 2000 under the name "INFO XXI, An Information Society for All".

Also, as a decentralised State with 17 autonomous communities, the regional Information Society is very active. Early on, Spanish communities started to prepare their own IS strategy and implemented many programmes and initiatives.

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# 1. Historical background

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## 1.1 Spanish ministerial programmes related to IS launched prior to 1998

Until recently, the Spanish Government did not have a co-ordinated policy towards the Information Society but has been involved through a great number of initiatives and programmes conducted by different Ministries. These programmes were oriented towards technology.

A Inter-ministerial Commission for Science and Technology (CICYT) was created with representatives from the Ministries with a significant role in R&D activities, in which the main players were both the Ministry of Industry & Energy and the Ministry of Education & Science. The Commission's main responsibility was to design, promote, support and steer the development of R&D activities in public research institutions and firms, following the priorities set out by the National R&D Plan.

- **PISTA Programme**



**Promotion and Identification of the emerging services in advanced telecommunications** - Iniciativa de Promoción e Identificación de Servicios Emergentes de Telecomunicaciones Avanzadas (PISTA)

The PISTA programme (Programa Incentivador de Servicios de Telecomunicación en Banda Ancha) acts as an umbrella policy, as it promotes the use of advanced telecommunication services in several sectors through the co-ordination of various groups of users, which have common needs in a specific area. Some applications involving these needs have been developed through pilot projects in a range of sectors including production and industrial design, training, library and museums, Healthcare, Culture and entertainment, Public administration, Tourism, etc.

It is co-ordinated by the State Secretary for Telecommunications and Information Society of the Ministry of Science and Technology. Initially covering the 1996-1998 period, it has been extended until 2001.

- **ARTE/PYME programme**



**Regional Actions in Telecommunications for SMEs** - Acciones Regionales en Telecomunicaciones para las Pequeñas y Medianas Empresas ARTE/PYME

Covering the period 1995-1999, the objectives of this programme, co-ordinated by the State secretary for Telecommunications and Information Society, were to help SMEs incorporate ICT and gain competitive advantages from advanced telecommunication services. The programme was based on co-financing projects focused on groups of SMEs having similar needs and co-ordinated by sectoral associations or non-profit entities.

- **ATYCA - National Plan for the Support of Technology, Security and Quality in the Industry**

Covering the 1997-1999 period, ATYCA is the instrument of the Spanish Ministry of Energy and Industry (MINER). It promotes competitiveness in Spanish Industry through R&D, Innovation, Quality and Industrial Safety.

This new programme integrates previous programmes of MINER designed to promote R&D and Innovation in various technology fields and simplifies the access of enterprises, especially SMEs. About 40% of the budget for ATYCA has been applied to R&D and Innovation projects in ITC technologies.

- **PN-AST and PN-TIC programmes**

PN-AST- National Programme for Telematic Applications and Services and PN-TIC - National Plan for Communication and Information Technologies are two complementary programmes co-ordinated by the Secretaría General del Plan Nacional de Investigación y Desarrollo covering the 1996-1999 period (<http://www.cicyt.es>).

The first one was targeted at R+D projects oriented to the development of advanced telematic applications and services, as well as the network technology supporting these applications/services. The second one was oriented to the improvement of competitiveness in industrial sectors by using technological capabilities (existing or future).

- **PNTIC programme**



**PNTIC – National Programme of the Ministry of Education and Culture for ICT** - Programa Nuevas Tecnologías

The ICT Programme, created in November 1989, co-ordinated the actions related to IT of the Ministry of education. Until 1998, the main objectives were Information and Audio-visual systems, supply, training and information classrooms.

In July 1998, a new action was launched following the signature of The Framework Agreement " The Education in the Net", by which a social collaboration Programme to facilitate the introduction of ICT in primary and secondary schools was established. The main signatories were the Ministry of Education and Culture, Telefónica Group and Encuentro Foundation. The agreement aims to promote ICT diffusion and knowledge, to facilitate the Centres' connectivity (by a free connectivity to Infovía or Infovía Plus, depending on the ISDN facilities) and the creation of a "Virtual School" Forum.

## **1.2. Regional Information Society Strategies**

Several Spanish regions have implemented strategies for the Information Society rather early on. Among them, one can cite Catalonia and Extremadura.

- **Catalonia on the Network**

Catalonia is the most advanced region as regards the application of ICTs. Following the recommendations of Catalonian telecommunications white paper (1991), the Generalitat de Catalunya created a specific IS Commissioner on July 1998 in order to promote activities and initiatives to support the transition in Catalonia towards the Information Society. The Commissioner's Office promoted the elaboration of the Strategic Plan "Catalonia on the Network", published in April 1999 ("Catalunya en Xarxa"). It was followed by an "Annexe to the Strategic Plan: Outline of the present position of the Information Society in Catalonia" published in July 1999 (<http://www.gencat.es/dursi/>).

These documents have led to the development of a whole series of projects that facilitate and promote the incorporation and the use of ICT in different sectors. The main lines of actions were:

1. Institutional commitment
2. Universal access to the Internet
3. Open Administration
4. Citizens' card
5. Educational system
6. Health system
7. High capacity and land balancing infrastructures
8. Citizens' consciousness
9. Presence of Catalan in the new language technology and Catalan content in the WWW
10. Giving support to economic activity



In September 1999, the document "The First Year of the Commissioner's Office (1998-1999) Promoting the Information Society in Catalonia" (<http://www.gencat.es/csi/eng/csi.htm>) was published. This document appraises the achievements to date in each line of action. In July, a statistical book on Information Society in Catalonia was also released (Estadístiques de la Societat de la Informació Catalunya 2000 - [http://www.gencat.es/csi/pdf/cat/estadistiques/si\\_2000/Estadistiques\\_SI\\_2000.pdf](http://www.gencat.es/csi/pdf/cat/estadistiques/si_2000/Estadistiques_SI_2000.pdf) ).

A comprehensive web site was established by the Secretaria per a la Societat de la Informació, containing an inventory of IS projects conducted in Catalonia as well as a selection of European and international good practice by sector (health, teleworking, transport, public administration, etc.).

- **Infodex (Information Society Regional Strategy in Extremadura)**



Launched in May 1998 in the framework of the EU RISI programme, the objective of Infodex - Estrategia Regional de la Sociedad de la Información en Extremadura was the preparation of a regional strategy adapted to the specificities of the region.

This strategy constitutes a reference framework for the mid and long term planning of Information Society development

The aims focus on three main topics: provide access to citizens, administration and the private sector using the new ICTs. The action plan itself is divided into five programmes. These are structured into 10 action lines with a total of 44 special projects (<http://www.juntaex.es/consejerias/ect/dgsi/infodex/infodex.html>).

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## **2. Towards a Spanish national Information Strategy**

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### **2.1 Preparatory work during 1998**

- **Advisory Group on the Information Society - Grupo Asesor sobre las Industrias de la Sociedad de la Información**

At the beginning of 1998, the Minister of Industry and Energy- MINER, Mr. Josep Piqué i Camps, decided to create an Advisory Group in charge of studying and preparing strategic recommendations focused on Information Society development in Spain.

This IS Advisory Group was formed by a set of relevant experts belonging to different sectors related to technological development, information systems, telecommunications, etc.

The main functions of this Advisory Group were as follows:

- To provide a realistic view of the needs of Spanish Industry related to the strategies focused on IS development.
- To perform detailed studies and develop recommendations for the launching of initiatives and measures for the development of communication and information technologies in Spain.
- To make a report with recommendations to the Ministry of Industry and Energy including the proposed action plans.

It started its work immediately and published its Report in July 1998 stating the views of the industries and presented several recommendations to the Ministry (<http://infoxxi.mcyt.es/Documentos/recomend.doc>):

- Stimulating the demand in sectors such as education, leisure, electronic commerce, etc.
- Promoting the creation of new infrastructures, in particular with the appropriate bandwidth.
- Promoting added value through specific innovation projects and adequate financial measures.
- Creating a Forum on Information Society, which will be the continuation of the advisory group.
- Creating an Interministerial Committee for Information Society.

In June 1998, another report from the Economic and Social council "The new Information Society's challenges " pointed up the importance of carrying out global initiatives, to face the new Information Society.

- **Creation of the Information Society Forum - Foro sobre la Sociedad de la Información**

Following the recommendations of the advisory group, the Ministry of Industry established in October 1998 an Information Society Forum, which was conceived as an extension of the Advisory Group. It is an advisory body and a platform, involving representatives from the ICT sectors and chaired by the Ministry of Industry. It aims to facilitate the exchange of views between the Telecommunications, Computer, and Audio-visual sectors and the Government.

From this Forum's work and conclusions the Government will be re-enforced in its search for solutions that drive technological development in Spain. It will be in charge of developing initiatives on electronic commerce, audio-visual content, education and training, and new technologies applied to administration ([http://infoxxi.mcyt.es/Documentos/marco\\_foro.htm](http://infoxxi.mcyt.es/Documentos/marco_foro.htm)).

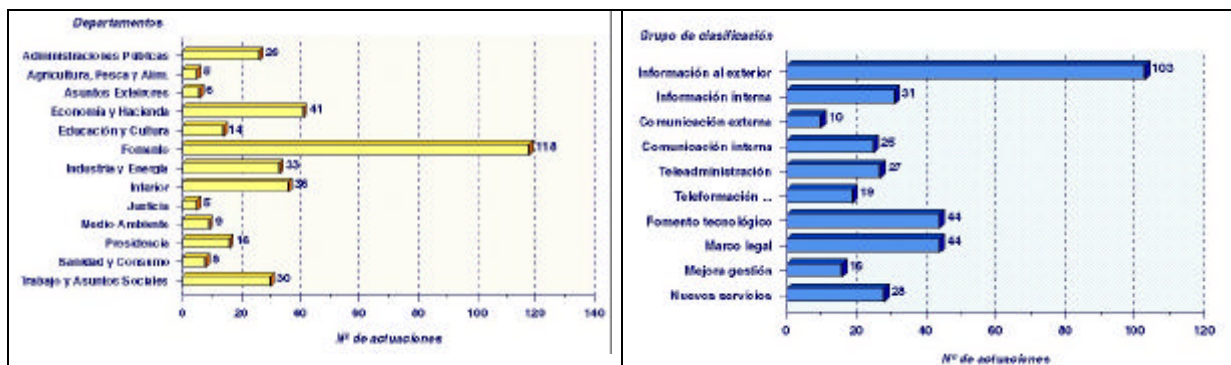
## 2.2 Interministerial Commission for the Information Society and new technologies (CISI) and the catalogue of governmental initiatives

In April 1999, an agreement was approved by the Cabinet, which decided to start a strategic process to prepare a national strategy for the deployment of ICT in Spain and the development of the Information Society. This strategy would avoid duplicating efforts and should integrate all previously existing programmes and initiatives from ministries in a coherent governmental programme. This strategic framework would allow the implementation of a wide-ranging and coherent programme for the coming years, enabling the development of an "Information Society for all" in Spain.

Three months later, a Royal Decree of July 23, 1999 (1289/1999) led to the creation of the Interministerial Commission of Information Society and New Technologies - Comisión Interministerial de la Sociedad de la Información y de las Nuevas Tecnologías en España - CISI ([http://infoxxi.mcyt.es/Real\\_decreto.htm](http://infoxxi.mcyt.es/Real_decreto.htm)). Chaired by the Minister of Industry and Energy, CISI's members are high level representatives from 13 ministries.

In order to evaluate the state of advancement of the Information Society, the same Royal Decree 1289/1999 assigned the Government to prepare a inventory of initiatives already implemented or planned by the different ministerial departments - A.G.E. Administración General de Estado (Catálogo de actuaciones y/o proyectos para la Sociedad de la Información - CAPSI). The objective was to show how the different Ministries have understood the potential of the Information Society and how they have carried out programs for its implementation.

Work started in September 1999 under the direction of the Superior Council of Informatics of the Ministry of Public administration and the Telecommunication Council of Telecommunications of the Ministry of Development. The final version of the catalogue of projects and initiatives was released in March 2000. 347 projects have been identified. The most active Ministry is the Ministry of Development, followed by the Ministry of Interior, Industry and Energy and the Ministry of Economy. This catalogue represents a global vision of the effort made by the Spanish administration and constitutes a solid base on which the Government can build its strategy. Analysis and the catalogue of IS related activities are available at <http://www.map.es/csi/catalogo/index.html>.



Source: <http://www.map.es/csi/catalogo/index.html>



### 2.3 The new Strategic Initiative on Information Society "INFO XXI: Information Society For all" (January 2000)



According to its mandate, CISI has prepared a new IS strategy for Spain which was approved by the Council of Ministers in November 1999 and released in January 2000 under the name "*INFO XXI: La Sociedad de la Inform@cion para todos*" (INFO XXI: Information Society for all). INFO XXI represents the National IS strategy of the Spanish Government, which will give the opportunity to citizens and enterprises to take part in its development and take advantage of its potential to improve social cohesion, quality of life and of work and economic growth. Also, it has been prepared in relation with the eEurope initiative, following the Helsinki Council decisions in December 1999 (<http://infoxxi.mcyt.es/Documentos/infoxxi.pdf>).

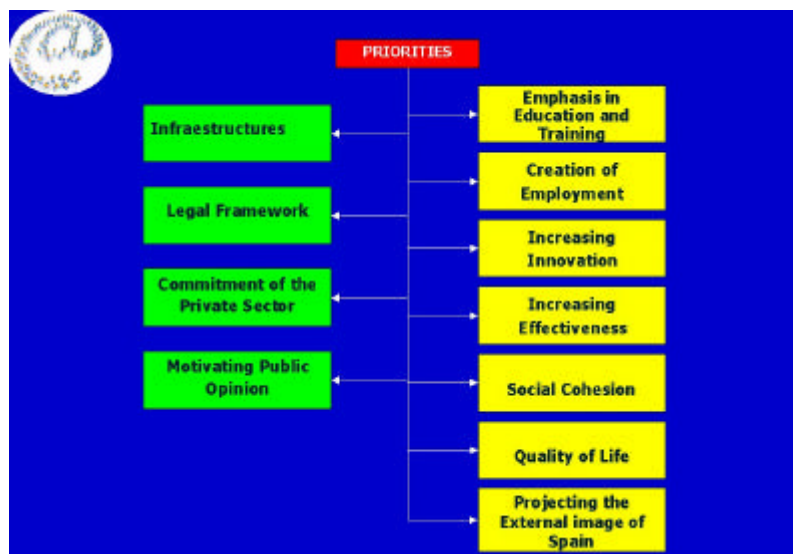
The program will be conducted over a period of 3 years (2000 -2002). The Spanish government is provisionally planning to invest some 2.53 billion EUR on the Information Society objectives. More than 825 million EUR of this sum is scheduled to be invested by the end of 2000. In addition, a special fund will be established later this year to encourage private sector innovation in this field. The budget's breakdown by ministries: the Ministry of Industry and Energy and the Ministry of Development having 82% of the total budget (46% and 36% respectively).

The strategy acknowledges the fact that the private sector is the driving force behind the effective implementation of the Information Society and it clearly states the Government's role of providing the appropriate environment for the private sector to achieve this goal.

Ten Strategic objectives have been defined:

1. An Information Society for all
2. A Society centred on education and employment
3. A Society with appropriate the infrastructure and legal framework to develop a digital economy
4. A Society which promotes its culture
5. A Society with better quality of life and more solidarity
6. An innovative Society which stimulates the growth of new businesses and new industries
7. A Society more present in the global marketplace
8. An Administration more transparent and centred on the citizen
9. A Society with a powerful entrepreneurship base
10. A Society with a more consistent structure

As shown on the graph, the priorities have been classified in 4 "Success Factors" which represent the necessary conditions to ensure the success of the initiative and 7 "Major action lines".



## Success Factors

Each of the Success factors is translated into programs with priority actions.

Success Factors	Programs	Priority actions
<b>1. Infrastructure and networks</b>	Access to all citizens	<ul style="list-style-type: none"> <li>• Launching of new projects within the PISTA initiative framework</li> <li>• New access channels</li> <li>• New pricing model for the telecommunications services of Telefonía S.A.U.</li> <li>• Quality regulation of mobile telephony and internet access services</li> </ul>
	Deployment of wide band infrastructures	<ul style="list-style-type: none"> <li>• Reinforcement of RedIris</li> <li>• FEDER actions in telecommunications 2000-2006</li> <li>• New telecommunication services</li> </ul>
<b>2. Legal Framework</b>	Economical framework	<ul style="list-style-type: none"> <li>• Electronic commerce regulations</li> <li>• Creation of « Certification Service Providers Register » (project)</li> </ul>
	Technical framework	<ul style="list-style-type: none"> <li>• Providing information on the legal aspects of security</li> <li>• Regulatory development of the « Royal decree-Law 14/1999 on electronic signature</li> <li>• Internet being part of the universal telecommunications service</li> <li>• Completing the universal telecommunications service regulation</li> </ul>

Success Factors	Programs	Priority actions
	Social framework	<ul style="list-style-type: none"> <li>• Actions oriented towards the consumer protection</li> <li>• Juridical support to electronic commerce</li> <li>• Introduction of electronic signature</li> <li>• Application of the Rules concerning television programs</li> <li>• Data protection</li> <li>• Actions oriented towards consumer requests and claims</li> <li>• Creation of a contact point for consumers</li> </ul>
<b>3. Commitment</b>	Industry sectors  Social sectors	<ul style="list-style-type: none"> <li>• Identifying strengths and weaknesses of the Spanish sector</li> <li>• Building strategies to reinforce or enhance competitiveness</li> <li>• Promoting the inevitability of the Information Society process</li> <li>• Developing citizens' interests through organisational commitment</li> </ul>
<b>4. Public opinion awareness and motivation</b>	Information  Demonstration  Best practice inventory  Seduction	<ul style="list-style-type: none"> <li>• Pilot projects to demonstrate the interest of using new telecommunication services</li> <li>• Information on the added value of these services</li> <li>• Open-door events, fairs, demo-centres organised to stimulate the interest of the public</li> <li>• Identification and information on the most interesting actions</li> <li>• Competitions and awards for TIC entrepreneurs</li> </ul>

### Majors action lines

The 7 major action lines are translated into programs and priority actions:

Majors action lines	Programs	Priority actions
<b>1. Emphasis on Developing education and - training</b>	Education highways Knowledge in the 21st century	<ul style="list-style-type: none"> <li>• Infrastructure and equipment allocation</li> <li>• Development and on line maintenance of educational content including education portals</li> <li>• Development of new training models thanks to new information technologies</li> <li>• Transfer from traditional methods to new approaches through multimedia</li> </ul>

Majors action lines	Programs	Priority actions
	Today's citizens	<ul style="list-style-type: none"> <li>• Development of new training and education models using new technologies</li> <li>• Enhancement of the technological background of teachers</li> <li>• Development of the role of the UNED regarding the Spanish speaking community, especially in Latin America</li> <li>• Development of internal co-operation in non university education</li> </ul>
<b>2. Job creation</b>	<p>Development of the « Amigo del TIC » network</p> <p>Fighting against exclusion and unemployment Access to jobs created by ICT</p> <p>Tele-working</p>	<ul style="list-style-type: none"> <li>• Development of initiatives to help the users in buying, installing and maintaining IT equipment</li> <li>• Creation of training programs to enhance the users' IT capabilities</li> <li>• "IT alphabetisation" for workers and unemployed people</li> <li>• Training programs dedicated to the Information Industry</li> <li>• Initiatives to increase the tele-working potential for disabled people</li> </ul>
<b>3. Increasing Innovation</b>	Innovation for all	<ul style="list-style-type: none"> <li>• Deployment of Red Iris 2, an experimental network with high level technologies and services</li> <li>• New initiatives to promote innovation</li> <li>• Elaboration of the Information technologies and communications masterplan by the Ministry of Defence</li> <li>• Simplification of the procedures and rules regarding the creation and structural changes of small firms</li> <li>• New solutions and services validation allowing the Spanish industry sector to be more present in the UE programs</li> </ul>
	Information Society as an Innovation booster	<ul style="list-style-type: none"> <li>• Program for adequate infrastructure management</li> <li>• Program for components and electronic sub-systems</li> <li>• Program for Television and digital broadcasting</li> <li>• Program for Information and Software engineering</li> <li>• Knowledge management environment implementation</li> <li>• Enhancement of existing technological infrastructures</li> <li>• Validation of new solutions and services</li> <li>• Security certification</li> <li>• Creation of an Observatory of the Information Industries</li> <li>• Incentives for innovative applications</li> </ul>

Majors action lines	Programs	Priority actions
	Industrial environment evolution through IS	<ul style="list-style-type: none"> <li>• Promotional actions to demonstrate the competitive edge of the Spanish Information Industry</li> <li>• Encourage the creation and the development of firms through information and innovation clusters</li> <li>• Support the SMEs of the sector</li> <li>• Industrial co-operation</li> </ul>
	Development of tools and multimedia applications	<ul style="list-style-type: none"> <li>• Creation of virtual communities</li> <li>• Facilitate the development of high quality applications</li> <li>• Development of thematic portals</li> <li>• Support co-operation networks between firms in the Information sector</li> </ul>
<b>4. Increasing effectiveness</b>	<p>Integrated network of services for the Administration</p> <p>Best practice in the ICT sector promotion</p> <p>Natural, industrial and urban environment management</p>	<ul style="list-style-type: none"> <li>• Creation of an "administrative" Internet</li> <li>• Cryptography and digital signature will be implemented to ensure network security</li> <li>• Automation and rationalisation of administrative procedures</li> <li>• Support for AGE employees through knowledge management systems</li> <li>• Creation of an "Observatory of best practice" with a sectoral and international scope</li> <li>• Extension of the pilot project on "best industry practice" to a greater number of firms and sectors</li> <li>• Creation of a Local Support Centre network</li> <li>• Promotional actions to develop the B to B and B to C approaches</li> <li>• Supply chain integration</li> <li>• "Test-beds" implementation</li> <li>• Arte-PYME (for SMEs) : phase 2</li> <li>• Development of an Information system on environmental items</li> <li>• Information system on water quality and hydrology</li> </ul>
<b>5. Social cohesion</b>	<p>Bringing Administration and citizens closer</p> <p>ICT for specific groups</p>	<ul style="list-style-type: none"> <li>• Initiatives for the modernisation of the Administration</li> <li>• Tools to help Judges and Courts to be more efficient</li> <li>• Elaboration of the GPSS (Guia de Procedimientos Prestaciones y Servicios) for citizens' information</li> <li>• SYSPE for job search</li> <li>• Use of ICT to upgrade the education of disabled people</li> <li>• Use of ITC for services dedicated to elderly people</li> <li>• Training programs including tele-training</li> <li>• Information on IMSERSO via Telematics and web pages</li> </ul>

Majors action lines	Programs	Priority actions
	Technological development of the Health National System	<ul style="list-style-type: none"> <li>• Development of IP networks to allow connection between health centres</li> <li>• IS for Hospital management, tele-medicine services</li> <li>• Services "at home"</li> </ul>
<b>6. Quality of life</b>	<p>ITC accessibility for citizens</p> <p>Comfort in the domestic and collective environments</p> <p>Equal opportunities through ICT</p> <p>Culture operators close to the citizen</p> <p>Historical, artistic and cultural Heritage</p>	<ul style="list-style-type: none"> <li>• Innovation programs integrating security, communication equipment</li> <li>• Implementation of an healthcare program through a portal</li> <li>• Enhancement of communication in remote regions</li> <li>• Data basis on cultural items</li> <li>• Co-operation between tourism actors</li> <li>• Promotion of the public libraries network</li> <li>• ITC projects for the National Library</li> <li>• Stimulation of cultural demand</li> <li>• Inter Connection of public libraries</li> <li>• Training of the personnel of public libraries</li> <li>• Publishing on the Internet of 20.000 books of Hispano-American authors at the end of 2001 (CERLALC)</li> <li>• TESEO: database of theses</li> <li>• Catalogues of museum art collections</li> <li>• Virtual thematic exhibits</li> </ul>
<b>7. Projecting the external image of Spain</b>	<p>Spanish culture disseminated to the most remote places</p> <p>21 countries defend and develop their common language</p> <p>New scope for Tourism</p>	<ul style="list-style-type: none"> <li>• Normalisation and development of the language</li> <li>• International initiatives for the development of Internet in Hispano-American countries</li> <li>• Selected cultural and artistic offers</li> <li>• Touristic value chain on Internet</li> </ul>

## 2.4 Some highlights

- **"Access to all" initiative**

In a first phase, the government aims to have 3 million homes connected to the internet, and to extend wide band communication networks beyond the largest population centres to smaller Spanish towns with fewer than 50,000 inhabitants.

In the longer term, the overall objective is to ensure that every citizen and every business has good quality access to the services offered by the Information Society at an affordable price, including the provision of an email address for every citizen.

- **E-business and multimedia applications**

The Spanish Government is deeply committed to fostering electronic commerce. The treatment has been approached in a horizontal manner, from promotion of e-commerce towards SMEs to education and training, the provision of adequate infrastructures and all aspects dealing with security, authentication, taxation and consumer protection. An "Anteproyecto de Ley de Comercio Electrónico" was presented by the Ministry of Development in February 2000.

Moreover, the government intends to create 50 local business centres to introduce e-business to SMEs. The use of electronic signatures will also be given official encouragement in order to bolster confidence in e-business. This will give practical support to Spanish legislation on electronic signatures enacted in September 1999.

Another aim is to encourage 1,000 companies to generate innovative products that will stimulate demand for net-based services over the next two years. In addition, thematic hypertext links will be set up to promote marketing through the Internet of products with a multimedia content in Spanish.

- **Education and training**

Education and training objectives include providing all the country's educational establishments with adequate data processing and communications resources, training around 125,000 educators in the use of information technologies, and developing the Internet as a job search medium.

- **Health**

A further service is set to provide access via the Internet from home to the health system. A specific aim is to extend global service for citizens through this service to 50% of health districts during the next 4 years.

## **2.5 Recent organisational changes**

Following a reorganisation of ministerial departments which took place in April 2000, it has been decided that the Ministry of Science and Technology will concentrate on all matters related to science and technology policy, telecommunications and Information Society development. The organisational structure of the Ministry has been finalised in July 2000 with the creation of a State Secretariat for Telecommunications and Information Society. Among the strategic objectives of this new structure, are competitiveness and innovation, promotion of ICT, development of the Internet and the development of infrastructures, content and applications as well as liberalisation and regulation (<http://www.mcyt.es/infoindustrias/>).

This decision results from the National Plan of Scientific Investigation, Development and Technological Innovation (2000-2003) (Plan Nacional de Investigación Científica, Desarrollo e Innovación Tecnológica - <http://www.cicyt.es/pnidi2000/pnidiintrod.htm>) approved in November 1999, which recommends improved co-ordination of actions in these fields allowing better efficiency and evaluation.

According to these institutional reorganisations, new changes should occur concerning the implementation of the IS national strategy in the coming months.





# Sweden



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## Introduction

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"E-vikings blaze the on-line trail", "Digitales Volksheim", "a high-tech Goliath", "La Suède Championne d'Europe du high-tech"... the headlines from the foreign press quoted by the Minister for Trade Leif Pagrotsky during a recent conference are impressive. While in 1993 Sweden was a country in a deep economic crisis, today it is among the healthiest economies in Europe and ranks among the world's leading countries in IT, telecommunications and new media. In 2000, according to the Information Society Index (IDC/World Times Survey) Sweden passed the United States as the world's foremost IT nation.

Data collected by ISA, the Governmental "Invest in Sweden Agency", show that Sweden invests more in ICT in relation to its GDP than any other nation – 7.7% compared to the US' 7.3% or the UK's 6.5%. A report from Industriförbundet - The Swedish Federation of Industries - shows that one-fifth of all new jobs in the private sector have their source in the new economy. Almost 70% of Swedish households have an advanced personal computer, thanks to "staff purchase agreements" supported by the Government. Internet penetration continues to grow at a rapid pace and it is higher than anywhere else in the world: in May 2000, 65.2% of population aged over 15 years were connected to the Internet, as opposed to the European Average of 34%.

Going beyond the number of PCs, Sweden has a comprehensive spread of IT use and a high level of IT maturity. This is a result of several strengths, which are, according to the Swedish IT Commission: a well-educated and well-trained labour force, strong traditions and ambitions in Swedish society which favour the development of knowledge and know-how, a well-developed information structure, favourable prerequisites for business, good global awareness and culture, logistics experience, entrepreneurial skills and the presence of the world's leading ICT companies. The strengths are all the stronger due to the national action plan for Information Society, backed by the Government and Parliament as well as the active involvement of public authorities as key users of computers and networks in conducting their activities.

Sweden started to define its strategy very early on. Based on the work of the IT Commission created in 1994, the Government issued its first IT Bill in 1996, which proposed a strategy and an action plan. Numerous programmes and initiatives were launched in this framework, allowing Sweden to obtain these good results. Today, the Government considers that this situation does not give to it an excuse *"to lean back and fall into the trap of complacency. We need to go on! We have no time to lose. We need constant change and improvement!"* the minister for Trade said recently.

Therefore, the Government is still strongly committed to keeping Sweden a society that embraces change and that is fast to put new technology to use. In March 2000, the government presented a new IT Bill for the creation of "the Information Society for all" with the aim of boosting confidence in IT, enhancing competence in the use of IT and securing accessibility to the services of the Information Society, including e-commerce. The Swedish government is determined to consolidate Sweden's position as a leading IT nation in Europe and the world.

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# 1. The first Swedish IT national strategy

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## 1.2 The IT Commission at the centre of the Swedish Information Society (March 1994)



In March 1994 the Government set up a national commission on IT: the IT Kommissionen (<http://www.itkommissionen.se>). Chaired at that time by the Prime Minister himself, its task was *"to promote the utilisation of information technology in Sweden as a means of improving the quality of life and Sweden's international competitive position"*.

In August 1994, the commission issued a final report entitled "Information Technology. Wings to Human Ability". Providing a vision of Sweden towards the Information Society, it dealt with seven areas: Education and research, the legal system, public administration, health services and medical care, communications networks, industry and commerce and IT research.

The change of Government in 1994 was followed on January 1995 by the appointment of a new IT-commission. It was instituted as an advisory body in the field of Information Technology with enlarged tasks: its role was to advise the Government on strategic issues, spread knowledge about IT and look into the future within the IT area.

Much of the work done in 1995 consisted of laying down guidelines for a national IT action plan and inaugurating the implementation of the plan itself. Therefore, the IT Commission produced several reports and made proposals such as the policy paper entitled "Communication without frontiers", in June 1995. It set out the Swedish approach to the Information Society in key areas.

## 1.2 The first Swedish IT strategy (March 1996)

Based in large part on the deliberations and proposals made by the IT Commission, the Government prepared and presented a Government IT Bill (Prop 1995/96:125) to the Parliament in March 1996. This IT Bill defined the first national IT strategy and included measures to broaden and develop the utilisation of information technology (Åtgärder för att bredda och utveckla användningen av informationsteknik, 1995/96:125 - <http://naring.regeringen.se/fragor/it/lasmer.htm> in Swedish only).

The strategy's objectives were:

- To use the potential of information technology so as to contribute to growth and employment and strengthen Sweden's competitiveness.
- To give to all the opportunity to enjoy the benefits of information technology so that it can serve as a means to increase knowledge, democracy and justice.
- To use ICT to develop the welfare society and improve the quality of life of citizens.
- To create broad access to information in order to promote greater participation and development of knowledge.
- The main direction of a national IT strategy is to stimulate the use of information technology in a way that promotes creativity, growth and employment.

The government prioritised measures in three areas:

- the legal system
- education
- provision of information to society at large

It was planned that the government would report to the Parliament ([http://www.riksdagen.se/index\\_en.asp](http://www.riksdagen.se/index_en.asp)) on the implementation of the national IT strategy on a yearly basis.

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## 2. Governmental IS initiatives

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### 2.1 Activities of the IT Commission

- **The Third IT Commission**

Building on ministerial reform in the Swedish government, a third IT Commission was called in March 1996, chaired by the Minister of Transport and Communications. In June 1996, as a consequence of the Government IT Bill, new "terms of reference" were given to the IT Commission by the Government.

The ICT Commission has set up a number of working groups - "Observatories" - to look more deeply at questions of special interest. In particular, the ICT Commission was asked to implement an IT Legal Observatory (Det IT-rättsliga Observatoriet - <http://www.itkommissionen.se/observ/>).



The IT Legal Observatory was established during the autumn of 1996. The Observatory's main task is to advise the Government on matters related to changes in the legal system due to the rapid development of ICT and its impact on society. The Observatory is a meeting place for lawyers and representatives of the judicial system, Universities and Public administration.

Other observatories are :

- The Observatory for IT and security (Observatoriet för IT och Tillväxt - [http://www.itkommissionen.se/obs/obs\\_tillvaxt.html](http://www.itkommissionen.se/obs/obs_tillvaxt.html))
- Observatory on IT Infrastructure (Observatoriet för IT-infrastruktur - [http://www.itkommissionen.se/obs/obs\\_infra.html](http://www.itkommissionen.se/obs/obs_infra.html))
- The Observatory for IT, new enterprise, life-long learning and growth (Observatoriet för IT, lärande, kunskap och kompetens - [http://www.itkommissionen.se/obs/obs\\_larande.html](http://www.itkommissionen.se/obs/obs_larande.html))
- Observatory for Information (Observatoriet för Informationssäkerhet - [http://www.itkommissionen.se/obs/obs\\_sakerhet.html](http://www.itkommissionen.se/obs/obs_sakerhet.html))
- Observatory for IT and democracy (Observatoriet för IT, demokrati och medborgarskap - [http://www.itkommissionen.se/obs/obs\\_demo.html](http://www.itkommissionen.se/obs/obs_demo.html))

The work of the ICT Commission is also being conducted in the context of a number and variety of projects, often in collaboration with various agents such as Swebizz (promotion of Electronic Commerce) and SeniorNet Sweden. Started in 1997 and inspired by the US model [www.seniornet.org](http://www.seniornet.org), Senior Net Sweden aims to promote the use of ICT and the Internet among the elderly. The Swedish SeniorNet was developed as "physical" clubs as well as electronic meeting places. SeniorNet Sweden arranges numerous activities. The Government has supported SeniorNet (<http://www.seniornet.se/english.asp>).

The IT Commission also arranges hearings and seminars and produces reports. In 1997 the commission published an official report for the government called "Sweden Enters the Information Society" ([http://www.itkommissionen.se/PDF/rapp9705\\_english.pdf](http://www.itkommissionen.se/PDF/rapp9705_english.pdf)).

In May 1998, at the end of the mandate of the Third IT Commission a final summing up report called "Changing Times, Changing Conditions" was presented by the IT Commission Chairman Ines Uusmann, the Minister of Transport and Communications ([http://www.itkommissionen.se/PDF/rapp9808\\_english.pdf](http://www.itkommissionen.se/PDF/rapp9808_english.pdf)).

It focused on three central issues:

- How IT-usage can increase growth and employment;
- How accessibility to IT can increase independently of home address, sex, education and age;
- What is the future scenario, what will be the consequences of IT use and what strategic decisions must be made.

#### • **A fourth IT Commission (1998-2003)**

The Government appointed a new Commission indicating that the ICT Commission will in future work on revised terms, in particular analysing the impact of information technology on social development.

Therefore, the new Commission shall support the Government in its work on ICT questions by giving advice, proposing concrete measures and assisting in the dissemination of information to the general public. Chaired now by the Ministry of Industry, Employment and Communications, its mandate has also been extended to 5 years (instead of 3) in order to enable its work to be carried out on a longer term basis. Accordingly, the Commission is to draw up an annual programme of activities in consultation with the Government. In addition, the Commission is to hold regular consultations with the Government in the course of each year of its activity and publish a yearly activity report. Furthermore, the Secretariat of the Commission should be able to support and co-operate with other working groups that are active in the ICT sector. It will present a final report by the end of May 2003.

## **2.2 Selection of public initiatives launched between 1996 and 1999**

Numerous activities have been implemented by the Swedish Government during these 4 years, covering a large range of topics in accordance with the IT strategy. Below, one can find a description on selected ones: education, culture and electronic administration.

Also, regional and local authorities have been very active, developing and implementing action plans for the Information Society. One can cite IT Blekinge (<http://www.itblekinge.se/>), Norrbotten (<http://www.norrbotten.se/index.html>), the Sami region (<http://www.sametinget.se/english/index.html>), Gotland (<http://www.tjelvar.com/~asm/itstrat.htm>), Jämtland and Stockholm. The Local and Regional Web Site (<http://www.locregis.net>) contains an analysis of these strategies as well as others.

### **IT in education**

The Ministry of education and other dedicated organisations have launched a number of programmes for all levels of schools. The school system is highly decentralised. Therefore, Government policy is a goal-oriented system entailing a lot of local responsibilities. Also, the guiding principles and educational goals are outlined by the parliament and the Government in an education Act and a national curriculum.

Many actors work on IT issues and education:

- In 1994, the Parliament created the KK foundation; the Foundation for Knowledge and competence development (<http://knut.kks.se/>). Its central task was to sponsor large investments promoting the use of ICT.
- Another Swedish Agency for distance education (<http://www.distum.se>) works on the use of ICT in education. In 1995, the Government asked the Agency to prepare a strategy promoting the use of Distance education supported by ICTs. In its Bill on Regional Growth – for work and welfare (Bill 1997/98:62) the Government proposed that a delegation and a development centre for distance education based on modern information technology be established in Härnösand. Its task was to support the development of IT-based distance education and flexible education, initially within the scope of universities, colleges, adult educational associations and folk high schools.
- The National Agency for education (skolverket) replaced the earlier National Board of Education. It has the mission to function as an agent ensuring that the development of Swedish schools is in accordance with national objectives. Comprising a Unit dedicated to ICT issues (<http://www.skolverket.se>), it is responsible for national activities promoting the implementation of ICTs in schools.
- The Swedish National Board for Industrial and Technical Development - NUTEK (<http://www.nutek.se>) is an active promoter of ICTs and it studies activities undertaken in educational organisations.
- Telia has created a specific task force entitled "Telia's Global School" (<http://www.skolinternet.telia.se/lerofond/>) to invest in schools.
- The National Agency for Higher Education (Högskoleverket - <http://www.hsv.se/>) is a central authority for matters concerning institutions of higher education. Its tasks include evaluation and accreditation, carrying out quality audits, developing higher education, research and analysis, supervision, international questions and studying information.
- There is also extensive co-operation between the Nordic countries on the use of ICT in schools. The co-ordination of this work takes place within the Nordic Council (IDUN project <http://www.idun.dk/>).
- In 1998, the Government established a Delegation for IT in Schools in order to co-ordinate a 3 year programme on "tools for learning" (see below).

#### • IT in Schools

In the spring of 1998, the Government submitted a report to the Parliament entitled "Tools for learning" (1997/98:176). Following this, a national IT Action Plan for ICT in Swedish schools (ItiS), was launched in 1999 and will run until 2001. Its aim is to strengthen school infrastructure (<http://www.itis.gov.se>)

The programme consists of:

- Government grants to improve the Internet connection rate (in particular, support development in the municipalities).
- Measures to ensure that all pupils and teachers possess their own e-mail addresses.
- Measures to help 60,000 teachers (40% of Sweden's entire teaching body) involved in the compulsory and upper secondary level to develop their pedagogical skills.



It is co-ordinated by the Delegation for IT in Schools and covers pre-school classes, compulsory schools, special schools, sami schools and upper secondary schools. The National Agency for Education conducted a survey in 1999, which showed that between 1997 and 1999, the number of computers in schools continued to increase considerably. For example, in 1999, 39% of the pupils at the primary-secondary level and 59% at the upper secondary school level had access to an e-mail address. The corresponding percentage of teachers with access to an e-mail address was 66% in primary-secondary schools and 82% in upper secondary schools. The results of the study are available on line (<http://www.skolverket.se/studier/it/dator99/english.shtml>).



Another tool for developing IT use in teaching is the National Agency for Education's schools network, Schoolnet.

Swedish schools can visit Schoolnet to collect information, publish their own material and communicate with other schools both at home and abroad. Schoolnet has some 20,000 users a day (<http://www.skolverket.se/skolnet/>). Schoolnet also contains a national resource centre for the promotion of ICT based teaching aids.

- **Higher education and universities**



The National Agency for Higher Education has launched several projects for higher education such as **ASKen** - the information system on Higher Education in Sweden (ASKen stands for Automatic Prospectus). It is also responsible for co-ordinating the Swedish university network (SUNET - <http://www.sunet.se>).

## IT in the Cultural sector

Several projects have been implemented in the cultural sector. In particular, a major project has been launched entitled **Culture Net Sweden**.



"Kulturnät Sverige" aims to increase access to Swedish culture through the Internet (<http://www.kultur.nu/>).

In 1995, the Swedish Government decided to appoint a Special Expert Committee to make recommendations for an integrated strategy for the use of ICT by cultural institutions, and for the creation of a cultural digital network in Sweden.

In January 1997 the IT Committee on Sweden's Cultural Network presented its recommendations in the report "IT in the Service of Culture" (Swedish Official Reports series 1997:14). It recommended an IT strategy based on the creation of a CultureNet Sweden in order to increase public access to Swedish culture, inspire creativity and participation in cultural life, improve communication between producers of culture and the public, and increase co-operation and the exchange of experiences between cultural institutions. In March 1997 the Government commissioned the Royal Swedish Academy of Engineering Sciences to establish and administer a common digital network for cultural institutions; a CultureNet Sweden. Therefore, CultureNet Sweden started out as a three-year project between 1997-1999. The Swedish web site consists of an index of web sites with approximately five thousand links to Swedish cultural resources, a bulletin board, a list of discussion groups, a web-magazine that publishes news about culture and IT and much more besides.



Archives, libraries, museums and other cultural institutions are the largest contributors, but independent cultural practitioners, associations, organisations and companies are also involved.

During the second half of 1998, the project was evaluated. The Swedish government decided to put an end to the trial period and make CultureNet Sweden a permanent responsibility for the Swedish National Council for Cultural Affairs (<http://www.kur.se>).

## IT in public administration

In 1999, in a Statement of Government Policy, the Prime Minister expressed the ambition that ministries and public agencies should be forerunners in the use of ICT. As a consequence, they have successively developed their electronic administration, under the supervision of the Swedish Agency for Administrative Development

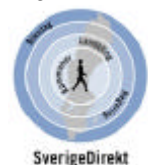


The Swedish Agency for Administrative Development (Statskontorets - <http://www.statskontoret.se/>) has the responsibility of developing Swedish administrative policy and ensures that electronic infrastructure in the public sector is open and secure.

The Agency provides the Government with analysis for decision-making by carrying out investigations, performing evaluations, taking an active part in work on issues relating to democracy and public administration, co-ordinating development projects in the IT and telecoms sectors, drawing up framework agreements for IT and telecoms use in public administration and making the Government aware of the need for measures to promote efficiency.

### • Information for Citizens

The Internet is the basis of electronic communication between central government, the public and companies. Almost 90% of agencies have a web site and are accessible by e-mail.



For several years now, **SverigeDirekt** has provided a gateway to the Swedish public sector via the Internet. The goal of SverigeDirekt is to provide the population with a better level of service via a single portal to all the country's local authorities, county councils and government agencies.

Other examples of improved agency-public interfaces are:

- The Government's central web site (Prime Minister and ministries) <http://www.regeringen.se/>.
- The Jobs Bank of the national Labour Market Board ([http://www2.ams.se/index\\_eng.html](http://www2.ams.se/index_eng.html))
- The National Board of Student Aid's Internet Service - CSN (<http://www.csn.se/English/default.htm>)
- The National Tax Board Service (<http://www.rsv.se/>)

There is also increasing use of the central government's databases which are progressively being offered free of charge.

Välkommen till  
**din samlingsplats**  
för rättsinformation

The register's clientele has multiplied: library catalogues, the Parliament's Rixlex web site (<http://www.riksdagen.se/debatt/Index.asp>), environmental databases and a new system of legal information named "Lagrummet" (<http://www.lagrummet.gov.se/>).

- **24x7 Government Services Project**

Recently, at the G8 Government On Line steering group meeting in Belfast in January 2000, it was decided that an open-to-all project entitled "24x7 Government Services" should be launched using Statskontoret's website as a launching platform (<http://www.statskontoret.se/service/>). The objective of this project is to compile and analyse public sector policies, practices and experiences regarding IT enabling round-the-clock services to citizens and to society at large.

- **IT procurement**



A project on IT procurement is being developed by the Swedish Agency for Administrative Development (<http://it-upphandling.statskontoret.se/Uhw/>).

- **Security and standardisation in electronic administration**

A "dissemination and retrieval system" which is a technical system of standardised and secure communication over the Internet has been developed by the National Insurance Board, the National Tax Board and the Swedish Agency for Administrative Development.

Other organisations play a key role besides the Ministry such as the Toppledarforum (<http://toppled.nutek.se/index4.html>), which is an informal joint-action group headed by the Minister of Finance. It's mission is to design an infrastructure appropriate for the work of public institutions and the **Swedish Data Inspection Board**, whose task is to protect individual privacy and personal data in the Information Society. The Board supervises authorities, companies, organisations and individuals, ensuring that they follow the Personal Data Act (1998), the Data Act (1973), the Debt Recovery Act (1974) and the Credit Information Act (1973) (<http://www.datainspektionen.se/>).

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## **3. The 2000 IT Bill "Information society for All": a new policy framework**

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### **3.1 The IT Bill "Information Society for all" (April 2000)**

In his statement of Government Policy on 14 September 1999, the Government announced that an IT Bill would be put before the Riksdag in 2000.

On April 10, 2000 the Minister for Industry, Employment and Communications, Björn Rosengren, presented the Government's proposals for future efforts in the IT field in Sweden through the IT Bill 1999/2000:86 "Information Society for all" ("Ett informationsamhälle för alla" <http://naring.regeringen.se/fragor/it/index.htm> and <http://naring.regeringen.se/fragor/it/lasmer.htm>).

This Bill is a follow up to the Government's IT Bill from 1996 which determines:

- New goals for IT policy
- An action programme
- Concrete proposals

As Sweden is already a leading IT nation, the ambition is now to make it an Information Society for all and to become the first country to create such an Information Society. The Government proposes to divide the work into three priority areas with a view to creating an Information Society for all. These three areas are:

- **IT confidence:** greater security and confidence.
- **IT accessibility:** greater access to the services of the Information Society. This applies both to technological hardware (e.g. lines, cabling and other equipment) and to logical software (programmes, standards, primary information bases and communal services of various kinds).
- **IT competence:** greater know-how as regards the development and use of IT, not only among specialists but also by the provision of basic skills to all.

The government's responsibility will be to make sure that the conditions for development are strong and to remove those barriers that make it difficult to realise this objective. State investment should be directed towards regulatory systems (confidence in IT), education and training (competence in IT), and infrastructure (accessibility to IT). The Ministry of Industry, Employment and Communications plays a key role in co-ordinating the implementation of the strategy.

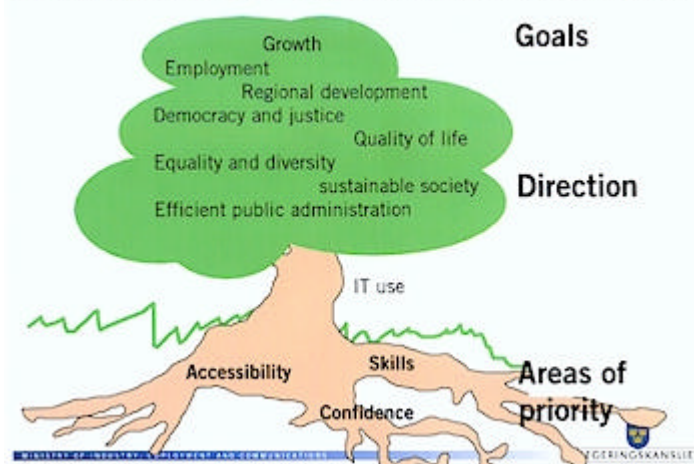
The IT Bill specifies the requisite measures which will be taken by the Government:

- Tax allowances to encourage access to the net.
- Government funding for the establishment of regional networks and accession to broadband networks in sparsely-populated areas.
- The construction of a backbone network for strictly commercial use by the Swedish National Grid.
- The extension of the network to all 289 municipalities via the Svenska Kraftnat (the Swedish Power Grid).

A total of 993 million EUR (SEK 8300 million) is to be spent over a four-year period on improving IT infrastructure. In addition, 300 million EUR will be spent on the municipalities' network. With investments from the private sector, investments in broadband will reach around 2.03 billion EUR.

The Bill identifies IT policy goals, orientation and priority areas. It also proposes the revision of the Utility Easements Act (1973:1144) and the Employment Protection Act (1982:80). Appendices to the new bill describe IT development in both statistical and technological terms and also include other background material.

### A leading IT nation - An information society for all




## IT Policy goals

The bill identifies IT policy goals as summarised in the table below:

It policy seeks to promote :	Strategy
<i>Growth by</i>	<ul style="list-style-type: none"> <li>• Enhancing the competitiveness of the Swedish IT sector</li> <li>• Helping create new markets, greater employment and greater productivity throughout society</li> <li>• Boosting the volume of electronic commerce</li> </ul>
<i>Employment by</i>	<ul style="list-style-type: none"> <li>• Improving employability through the provision of IT training emphasising quality at all levels</li> </ul>
<i>Regional development by</i>	<ul style="list-style-type: none"> <li>• Helping to create conditions for growth throughout the country by means of a good IT infrastructure</li> </ul>
<i>Democracy and equity by</i>	<ul style="list-style-type: none"> <li>• Making it easier for all to access information about public activities and to participate in political decision making, both in Sweden and in EU.</li> <li>• Contributing to more active application of citizen' rights through the new opportunities that IT offers for applying the principle of freedom of expression.</li> <li>• Exploiting the opportunities afforded by IT for preserving and developing culture, cultural heritage and language in Sweden.</li> <li>• Avoiding undue violation of privacy when IT is used.</li> </ul>
<i>Quality of life by</i>	<ul style="list-style-type: none"> <li>• Enhancing individual welfare and prosperity through the use of IT in everyday and working life.</li> <li>• Improving the quality of life for under-privileged groups.</li> </ul>
<i>Gender equality and cultural diversity by</i>	<ul style="list-style-type: none"> <li>• Increasing universal access to the advantages afforded by IT irrespective of gender, age, ethnic background or any disability.</li> <li>• Helping to ensure that the composition of IT specialist staff reflects the population structure as regards gender and ethnic background.</li> </ul>
<i>Efficient public administration by</i>	<ul style="list-style-type: none"> <li>• Letting public administration set a good example in IT usage.</li> <li>• Helping to ensure that electronic communication between government agencies, private individuals and businesses may be conducted safely and securely.</li> </ul>
<i>Sustainable society by:</i>	<ul style="list-style-type: none"> <li>• Using IT to promote ecologically sustainable development.</li> <li>• Helping to reduce the impact of transportation on the environment and public health.</li> <li>• Making IT equipment part of a sustainable, cyclical flow of materials.</li> </ul>

## Action Plan

The IT Bill introduces an action plan which includes concrete measures:

<b>Priority Area 1: enhancing Confidence in IT</b> Regulations and systems in the IT sector should inspire confidence by being: safe, secure, predictable and technology-neutral, international and protective of individual privacy.	
Objectives	Measures
<ul style="list-style-type: none"> <li>• Protection against information operations</li> <li>• Enhanced security on the Internet</li> <li>• Electronic signatures and other security technologies</li> </ul>	<ul style="list-style-type: none"> <li>• <b>A secure and more stable Internet:</b> <ul style="list-style-type: none"> <li>- The Swedish part of the Internet must function independently of operations in other countries.</li> <li>- Central government is to provide secure and accurate national timing for the Internet via the Swedish national testing site for time and frequency.</li> </ul> </li> <li>• <b>Electronic signature:</b> <ul style="list-style-type: none"> <li>- Promoting co-operation between important market actors on how to advance a common infrastructure for electronic signatures, e.g. by the use of a solution based on smart cards.</li> <li>- Issuing new legislation on electronic signatures.</li> </ul> </li> </ul>
<b>Priority Area 2: enhancing IT competence</b> The education system should provide all citizens with basic skills in the use of IT in everyday life and working life. IT levels of competence should allow employees to keep up with structural change and strengthen their position in the labour market, and provide employers with sufficiently skilled labour. In addition, specialised IT skills are needed in the research and development sphere.	
	<ul style="list-style-type: none"> <li>• Continuation of the special IT Programme for Schools (ItiS) in 2000-2001 - see below for details (<a href="http://www.itis.gov.se/">http://www.itis.gov.se/</a>).</li> <li>• A two-year IT competence enhancement programme for small businesses starting in 2001.</li> <li>• Analysis of women 's use of IT.</li> <li>• Twenty thousand additional openings in higher education nationwide in 2000 and a further 10,000 a year in 2001 and 2002. The emphasis is to be on technology and the natural sciences.</li> <li>• The Royal Institute of Technology is to launch an "IT university" in the Kista Science Park (<a href="http://www.kistasciencepark.org/">http://www.kistasciencepark.org/</a>).</li> <li>• Universities and other institutions of higher education should take into consideration the need for competencies in the IT sector e.g. the field of network expansion and IP technology.</li> <li>• Additional investment in the expansion of a cluster focusing on silicon technology.</li> <li>• Establishment in the higher education sector of a competence centre for Internet technology, partly in virtual form.</li> </ul>

### Priority area 3: IT accessibility

Central government responsibility is to ensure that IT infrastructure with a high transfer capacity is available nation-wide so that households and businesses acquire access to IT infrastructure with a high transfer capacity.

Government measures and regulations are to ensure both competition neutrality and diversity in the networks.

The Government must reduce the gap between metropolitan and sparsely populated areas as a result of major differences in accessibility, charges and capacity.

The Government has a special responsibility concerning the development of databases and services for ensuring universal accessibility.

A national strategy should be developed to ensure the security of the public information supply.

	<ul style="list-style-type: none"><li>• Revision of the Utility Easements Act to facilitate an expansion of communications infrastructure with a high transfer capacity.</li><li>• Proposals for a national IT infrastructure programme.</li><li>• A commercial backbone network extending to all municipal urban centres in Sweden.</li><li>• Government funding for regional line connections, prioritised partly for regional development and industrial policy reasons and partly because over the next five years the need for such links is not expected to be fully met by market players.</li><li>• Introduction of government grants to local authorities and tax relief to subscribers aimed at encouraging accession to networks with a high transfer capacity in sparsely populated areas.</li><li>• The question of local loop unbundling (LLUB) through legislative action is to be dealt with by Government Offices.</li><li>• In view of the present rapid development of local area networks (LANs) for broadband accession, measures are required for the prevention of a local monopoly. The Government has commissioned a report on this subject.</li><li>• Introduction of a broadband programme on a trial basis for persons with disabilities.</li><li>• Framing of a strategy to streamline and facilitate the provision of public information and the development of electronic information services.</li><li>• Regular publication of statistics on ICT.</li></ul>
<b>Other measures in certain areas of application</b>	
<b>e-government</b>	<ul style="list-style-type: none"><li>• The Government is to stimulate the development of 24-hour public authorities able to supply information and electronic self-service around the clock.</li><li>• Development of forms for certification and electronic signatures in public administration.</li></ul>
<b>e-commerce</b>	<ul style="list-style-type: none"><li>• Proposals as to how the EU directive on electronic commerce may be incorporated into Swedish legislation are to be drawn up.</li><li>• Greater information on electronic commerce to consumers and smaller businesses.</li></ul>
<b>Healthcare</b>	<ul style="list-style-type: none"><li>• A national action plan is to be drawn up for the development and rejuvenation of the health-care system, including IT usage. A joint group is to further develop national prerequisites for the broad-based implementation of telemedicine.</li></ul>
<b>Convergence</b>	<ul style="list-style-type: none"><li>• Legislation in the telecommunications, computer and media sectors should be co-ordinated (convergence).</li></ul>

<b>Employment and environment protection work</b>	<ul style="list-style-type: none"> <li>• The Employment Protection Act is to be revised so that security of employment is no longer dependent on the location of employees in relation to the principal workplace.</li> <li>• When procuring IT, central government is to point the way in imposing accessibility and environmental standards.</li> <li>• Requirements in line with EU legislation. A commission is to be appointed to analyse how IT may be applied in environmental protection work.</li> </ul>
<b>Democracy and participation</b>	<ul style="list-style-type: none"> <li>• Pilot programmes should be initiated in different living environments with a view to improving popular insight into and participation in the decision-making process.</li> </ul>
<b>Telia</b>	<ul style="list-style-type: none"> <li>• Privatisation of the State own telecom company Telia: Its introduction to the stock exchange aims to further enhance the company's scope for developing its range of networks and services.</li> </ul>

### 3.2 Focus on recent developments

- **Electronic commerce and digital signature**

The Government considers that:

- It is important that agreements are reached at the international level as far as possible.
- Actors in the market place should lead in the development of electronic commerce.

However, electronic commerce is an area to which the Government accords high priority. It considers that its responsibility is to create the necessary conditions for the widespread use of electronic commerce, to minimise any negative effects of the transition to electronic commerce, to promote an efficient regulatory framework, to co-ordinate activities in the public sector and to build an accessible and secure infrastructure.

The Action programme included in the IT Bill contains a series of measures intended to promote electronic commerce:

- Implementing the European Community Directive on electronic signatures: In May 2000, the Government submitted a Bill to the Riksdag entitled "Act on Qualified Electronic signatures" (1999/2000:117). The Government will also examine which laws require a personal signature and will enable electronic communication. It will also stimulate the use of electronic signatures, in co-operation with the business sector.
- Implementing the European Community Directive on electronic commerce. A special working group has been appointed at the Government offices to consider which laws may need to be amended in connection with the implementation of the Directive.
- Supporting the European Commission's initiative, eEurope.
- Supporting the adaptation of the EU's external trade policy.
- Advancing global co-operation.
- Implementing the Swedish part of the OECD's survey on the use of electronic commerce by enterprises.
- Participating in the international work on tax issues.



- Co-ordinating activities in the public sector, which should be a pioneer in that field. With regard to electronic signatures, the Government has commissioned the National Tax Board, together with the National Social Insurance Board, the Swedish Patent and Registration Office and the Agency for Administrative development to examine and draw up a set of proposals for the safe management of e-signatures within the public administration. These proposals are to be presented by October 1, 2000.
- Accelerating the work of encouraging the public sector to use electronic commerce and communication.
- Working for enhanced security on the Internet.
- Providing information to SMEs.
- Providing increased support and information to consumers. Consumer affairs are discussed in various places, including the inquiry "Consumers and IT". This is an inquiry into computers, commerce and marketing (SOU 1999:106) and the directive on e-commerce. A Government Bill was issued in 2000 on "Unsolicited advertising and related issues via email" (1999/2000:40). See also the Swedish Consumer Agency (<http://www.kov.se>)
- Investigating the possibility of promoting self-regulation (industry agreements and ethical rules)

- **IT and democracy**



DEMOKRATORGET

The Government has recently appointed a new delegation to examine the possibilities and problems associated with voting from home via the Internet at general elections. According to the Minister for Democracy and Public Administration, voters must be able to participate actively in supporting democracy by electronic means so as to influence practical decision-making.

The Ministry of Justice, therefore, has launched a development programme together with the National Board for Industrial and Technical Development (NUTEK - <http://www.nutek.se>) focusing on IT and democracy. Several pilot areas will be implemented in order to determine how IT may best be used to create democratic meeting-places and forums that boost dialogue between private citizens and their political representatives. The Government has also implemented a web site. (<http://www.demokratorget.gov.se/>)

- **Sweden, eEurope and the Swedish presidency in 2001**

Sweden has welcomed the European Commission's initiative, eEurope, because it aims to create an Information Society for all and it takes on the challenge of making Europe better equipped for the future, focusing on further investment in skills and knowledge.

However, Sweden considers that Europe should add to this a new trade policy agenda that supports Member States efforts to modernise their economy by promoting the ICT sector. If time to market is crucial, the size of that market is also crucial. Europe must continue to reinforce its internal market by common policies and initiatives such as eEurope. But Europe is not enough and it should embrace open markets and free trade: *"We can't protect Europe against the future. Instead, we should prepare Europe for the future"*. In that perspective, Sweden has defined the main lines of a new trade policy agenda for IT.



Sweden will hold the presidency of the European Union from 1 January–30 June 2001 ([http://www.utrikes.regeringen.se/eu/ordfor/seminarium/program\\_eng.htm](http://www.utrikes.regeringen.se/eu/ordfor/seminarium/program_eng.htm)). In its programme, the Swedish Presidency has announced that it will promote the Information Society by stimulating innovation in telecommunications and IT. An important element will be the ongoing review of all Community legislation relating to electronic communications. Sweden will also follow up the eEurope initiative. An informal EU meeting of Ministers for Telecommunications and Employment is already planned at Luleå on 15–17 February 2001.



# United Kingdom



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## Introduction

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The United Kingdom is one of the countries that anticipated the spread of the new technologies. Among other British technological achievements, it is worth remembering that Tim Berners-Lee, a British scientist, pioneered the World Wide Web. The British Government has developed strategies and initiated action in all the fields of the Information Society. The Information Society is a priority for the Cabinet Office of the Prime Minister, Mr. Tony Blair.

The 2000 Information Society Index, created by ISI and World Times Inc. ranks the United Kingdom in 12<sup>th</sup> place amongst the 55 countries studied. It is in 5<sup>th</sup> place as regards the Member States of the European Union. The Index states that the UK is amongst those countries in tune with the fast pace and complicated procedures of the information age and that the country's position reflects its established ICT infrastructure and computer literate population.

However, on 12 July 2000 the cabinet announced that according to an International eGovernment Study, Britain is characterised as an Emerging Nation. One-third of all Government services (152 out of 457) are available online, while nearly 75 per cent of all Government services are expected to be on line by 2002.

In terms of Internet development new national statistics show that the UK has seen strong growth over recent years. The proportion of UK households connected to the Internet has risen from 13% in March 1999 to 25% in March 2000. Neilson Net Ratings estimated the proportion of the population that is online to be 33% in May 2000. The UK market for mobile telephony is also growing quickly. Mobile phone use in the UK grew by 78% between June 1999 and June 2000 and recent figures from mobile phone operators show that over half of the UK population now have a mobile phone. The first stage in the development of mobile access to the Internet is underway with the introduction of WAP enabled phones during the year 2000, in advance of third generation services. The take-up of digital services is also growing rapidly in the UK and now covers 19% of all UK households. Not all digital services are fully web-enabled but Internet enabled set-top boxes are being introduced. This route should provide Internet access with lower initial costs than the PC route for those who choose to take it.

Only 350,000 SMEs were connected to the Internet in 1998. However, that figure has now risen to 1.7 million. In all, 81% of British businesses are now online. As regards e-commerce, just 4 in 10 (38%) businesses were engaged in e-commerce whereas ten months later almost 7 in 10 (68%) were pursuing e-commerce activities. Furthermore, the UK is the largest e-commerce market in Europe, with its value (including both business-to-business and business-to-consumer activities) estimated at approximately 3.3 Billion EUR per annum.

UK governments have played an important role in facilitating this progress over recent years. The Information Society Initiative acted as an umbrella for the initial actions of the UK Government, comprising programmes for the business, health and education sectors and the public at large. The New Labour Government in May 1998 set out its aims for the development of the Information Society in its document, "Our Information Age: the Government's Vision". This policy statement was realised in conjunction with the Modernising Government White paper (1999), The Competitiveness White Paper, "Our Competitive Future: Building the Knowledge Driven Economy" (1998) and the Cabinet Office's Performance and Innovation Unit's, "e-commerce@its.best.uk" report (1999).

Building on the establishment of a new organisational structure for the effective realisation of the Government's Information Society strategy, founded on an e-Minister and an e- Envoy, the Government has implemented UK Online. The UK Online Annual Report (September 2000) sets out the Government's detailed strategy for getting the UK online with a clear action plan for the future. The Annual Report was accompanied by the launch of a, "UK Online" Campaign comprising further initiatives and investment to get people, business and the government itself online.

The devolved regions of Scotland, Wales and Northern Ireland are also actively taking forward the Information Age agenda with Digital Scotland, the Wales Information Society Initiative and the Northern Ireland Information Age Initiative.

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## **1. The Information Society Initiative, an umbrella for Information Society**

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### **1.1 First sectoral strategies**

Two major national strategies were launched in 1995 regarding the development of ICT in two sectors: education and health

- **NHSnet (healthcare)**

Launched in Autumn 1995, the NHS Executive's Information Management and Technology Strategy for the National Health Service aimed to extend the use of computer systems in healthcare.



NHSnet is an initiative which co-ordinates the development of a national data network within the NHS that allows patient treatment information to be exchanged securely and efficiently. The benefits sought through the implementation of this national strategy, include:

- Greater value for money in the purchasing of ICT and services.
- Increased efficiency and flexibility in the delivery of patient care.
- Data security.
- The means to develop new applications.
- Support for nation-wide operators (such as the Dental Practice Board).

Programmes were also launched to develop Electronic Patient Record systems and advanced Clinical Workstations.

- **Education Departments' Superhighways Initiative (EDSI)**

Launched in April 1995, the UK Education Department's Superhighways Initiative aimed to raise the level of IT capability in schools and further education and teacher training (<http://vtc.ngfl.gov.uk/reference/edsj/help/fbackgrd.html>).



By ensuring that practical advice is available both in the classroom and the lecture theatre, the Government was encouraging the introduction of ICT in education. It was intended that industry should work with the education service in identifying needs and opportunities, and providing the means for meeting them.

Specific aims of the Superhighways programme in education included:

- Raising awareness of computer networks.
- Encouraging the development of high quality on-line educational applications and services.
- Providing advice, support and training for teachers.
- Increasing educational opportunity through a wider technology infrastructure.

A Superhighways consultation process was conducted in 1996. As a result, the Government selected 23 pilot projects. Evaluation was to be managed by the National Council for Educational Technology in England, Wales and Northern Ireland, and by the Scottish Council for Educational Technology in Scotland.

## 1.2 The Information Society Initiative and its sub-programmes (1996)

### • The Information Society Initiative

In 1996 the Department of Trade and Industry took the lead with the Information Society Initiative (ISI), designed to act as an umbrella for all Information Society activities and initiatives in the UK. It was backed by 58 million EUR in direct support.



Launched in February 1996, the ISI was a five year programme (1996-2000) with the aim of promoting Information and Communication Technologies in the UK (<http://www.isi.gov.uk/isi/isiframe.htm>).

The stated aims of the ISI were, broadly, to promote awareness of, and aptitude in using, the latest information technologies among the British public, to encourage the business community to seize the opportunities presented by these technologies and to promote British businesses involved in the production and dissemination of ICTs.

Through the ISI, the British Government set out to achieve these goals by:

- Creating the right regulatory framework, so that industry can develop and flourish, while assuring proper protection for the public.
- Promoting the use of the latest technologies in schools and colleges, museums and libraries, the health service, and all areas of public life.
- Using information technology to improve efficiency in Government and the effectiveness of the services it delivers.
- Acting as a catalyst for new developments.
- Identifying needs.
- Bringing people together.
- Working in partnership with the private sector and with local authorities to generate action.

### • Information Society sub-programmes

The ISI was divided into a number of major programmes relating to the various sectors it covered, and these were sub-divided into smaller programmes, and again into a great many projects, involving both public and private groups and bodies. There are also Scottish, Welsh and Northern Irish ISI actions operating on a regional basis.

The major programmes were:

#### "IT for All"

"IT for All" (aimed at everyone) was a four-year programme launched in December 1996 within the Department of Trade and Industry's Information Society Initiative.



It was aimed at creating partnerships between central and local Government, business and the voluntary sector. This programme followed a Government "IT for All" survey, conducted in August 1996, which found that the British public can broadly be divided into five categories in terms of its perception of ICTs. These were enthusiasts, acceptors, the concerned, the unconvinced, and the alienated.

"IT for All" was a programme of publicity and promotion of public and private sector projects designed to raise public awareness of the everyday benefits of new technologies and to create opportunities to experience them first-hand. Activities included national publicity exercises, the provision of information and partnership projects such as mobile demonstration vehicles, displays and public exhibitions. IT for All operated through a network of more than 2000 local centres, most of them based in libraries, schools and colleges, training centres and community groups.

### **Programme for Business**



Launched in February 1996, the Programme for Business (PFB) was one of the major programmes within the Department of Trade and Industry's Information Society Initiative (<http://www.isi.gov.uk>).

The Government was working in partnership with industry to promote business use and development of ICT in the UK. The Programme for Business was aimed mainly at SMEs wishing to use technology to gain a competitive advantage, but it was also open to single traders and large companies.

#### ISI centres

In 1997, there were around 30 programmes operating under the PFB, broadly categorised under four main headings:

- Awareness Activities for SMEs (jargon free guides, booklets and leaflets on "How technology can work for you", Multimedia Demonstrator programme).
- Award Schemes for innovative business and creative applications seeking to develop a critical mass of on-line business services (e.g. Information Society Creativity Awards).
- Technology and Technology Transfer Programmes.
- European Schemes.

The ISI was originally concerned with business aspects of the Information Society, and the PFB remains the main focus for Government ISI activities and expenditure. In order to raise awareness of the potential of new information and communication technologies, a national network of Local Support Centres offered independent advice to local firms and provided opportunities for hands-on experience.

#### • **Other programmes**

##### **Improving Access to Cultural Heritage:**

Launched in the spring of 1996 by the Department of National Heritage, the goal was to explore the impact of the Information Society on the cultural sector and to liaise with its sponsored bodies, other Government departments, EU partners, the G7, as well as other bodies from both the public and private sectors (<http://www.heritage.gov.uk/>). The Department worked closely with the Museums and Galleries Commission and the Library and Information Commission to identify where, and how, technology could help to make national heritage assets more readily available to the public. This potential was developed through commercial partnerships and other projects under the Government's "IT for All" programme, but it did not take the form of a major structured programme of activities.



Published in November 1996, the Green Paper government.direct invited the public to debate proposals for the further development of electronic delivery of Government services: a consultation period lasted from the paper's publication until 7 February 1997. The Government's stated vision was that services should be easy to use and available via home computers or interactive television in the home and in kiosks in convenient public places such as libraries, post offices and shopping centres. The paper set out the principles of the Government's Information Society strategy and examined possible methods for applying those principles. An associated project was launched in November 1997 called direct.link and 7 pilot projects were set up ranging from an information kiosk for rural areas to a regional geographic/geological information mapping system. Also, the Central Computer and Telecommunications Agency (CCTA) started to provide a first entry point to UK public sector information on the internet in August 1994. <http://www.open.gov.uk>.

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## 2. Our Information Age: the Government's vision

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### 2.1 A new Government

A new Government led by Prime Minister Tony Blair was elected in May 1997 with a programme to modernise Britain. The New Labour government made a commitment to continue the ISI on its original timetable, until its planned finish in the year 2000.

However, the Government expressed plans to build a new strategy for the Information Age to be presented in 1998. In the meantime, it was announced that it would launch further initiatives in addition to the existing publicly sponsored IS programmes.

Therefore, several initiatives were taken such as the "Enterprise Zone", the publication of a White Paper on the Freedom of Information "Your Right to Know", the "National Grid for Learning" and the "University for Industry" (see below).

### 2.2 "Our Information Age, the Government vision": a new strategy for the United Kingdom (May 1998)

In May 1998, the Prime Minister presented his policy statement "Our Information Age, the Government vision" which represents the strategy for the UK to go forward into the Information Society across all areas of life (<http://www.number-10.gov.uk/filestore/Our%20Information%20Age.doc>):

*"In this policy statement, we set out our ideas on how the Government will act to enable people to take advantage of the new information age in a co-ordinated strategy (...). The prize of this new age is to engage our country fully in the ambition and opportunity which the digital revolution offers. That prize is there for the taking. We must stretch out our hands and grasp it."*

The UK strategy for the Information Age is based on the idea that the Government will not attempt to replace the private sector - competitive markets will bring the greatest benefits to the economy and consumers alike.

However the Government does have an important role to play in five key areas:

- Transforming education: to harness new technology so that all can gain the knowledge and skills they need for the information age.
- Widening access: to ensure that the benefits of the information age are open to all, with no split between information haves and have nots.
- Promoting competition and competitiveness: to help business harness change and prosper, for the benefit of customers, jobs and the wider economy.
- Fostering quality: to ensure that the content of new services matches and exceeds the best available today.
- Modernising government: to ensure the Government uses new technology to deliver better, more convenient services.

This statement set out a comprehensive programme of action, which aimed to put Britain at the cutting edge of the information age in Europe. The targets were ambitious:

**By the end of 1998:**

- The number of schools connected to the internet to double, with the National Grid for Learning launched.
- The number of "IT for All" sites to more than double to 4000.

**By 2000:**

- The whole of the country to have access to NHS Direct, a new 24 hour telephone advice line staffed by trained nurses.
- The University for Industry (UfI) to be launched.

**By 2001:**

- To double the number of SMEs who are making effective use of the new technologies to improve their competitiveness.

**By 2002:**

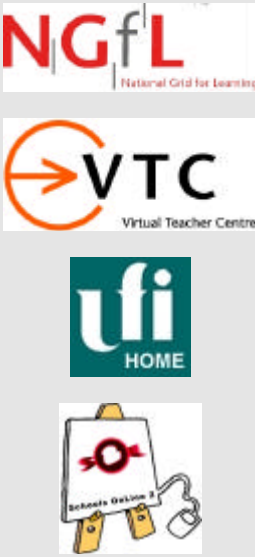


- 25% of government services to be available electronically.
- All schools, libraries, colleges and universities to be linked to the National Grid for Learning.
- All teachers to have had the chance to update their ICTs skills.


Within five years of the launch of the University for Industry Programme, it is expected that:

- 2.5 million people and businesses a year will be using its information services.
- 600,000 people a year will be following programmes of learning that it has brokered, including 200,000 in ICT skills.

## Summary of the action programme

The strategy will be delivered through a combination of new and existing Government programmes, initiatives and policies - such as the National Grid for Learning and the Information Society Initiative launched in 1996 and 1997.

Area	Action programme
<p><b>Transforming education and skills for the future</b></p> 	<ul style="list-style-type: none"> <li>As part of the National Grid for Learning started in October 1997 (<a href="http://www.ngfl.gov.uk">http://www.ngfl.gov.uk</a>), support for expenditure through the Standards Fund, to link schools to the internet and get new computers and access to curriculum-focused software.</li> <li>Establishment of an on-line Virtual Teacher Centre and Standards (<a href="http://www.vtc.ngfl.gov.uk">http://www.vtc.ngfl.gov.uk</a>) and Effectiveness Database (<a href="http://www.dfee.gov.uk/">http://www.dfee.gov.uk/</a>).</li> <li>Improvement of the quality of available content, in co-operation with BECTA (British educational Communications and Technology Agency <a href="http://www.becta.org.uk">http://www.becta.org.uk</a>) and the private sector.</li> <li>Training for teachers using 382 million EUR from the New Opportunities Fund.</li> <li>Establishment of the "University for Industry" programme - UFI (<a href="http://www.ufild.co.uk/">http://www.ufild.co.uk/</a>) a major new public/private partnership initiative, which aims to stimulate and meet demand for lifelong learning among businesses and individuals. It aims to encourage people to re-skill throughout their working lives. It will focus on making people ICT-literate as one of its initial priorities but it will be open for business by the year 2000.</li> </ul> <p><b>Other initiatives:</b> Schools On-Line – <a href="http://sol2.ultralab.anglia.ac.uk">http://sol2.ultralab.anglia.ac.uk</a></p>
<p><b>Widening access</b></p> 	<ul style="list-style-type: none"> <li>Establishment of a national network of 4000 IT for All access sites working in partnership with the private sector, local government and the voluntary sector. Development of IT for All learning centres for beginners. (<a href="http://www.itforall.org.uk">http://www.itforall.org.uk</a>)</li> <li>ICT in Libraries (<a href="http://www.culture.gov.uk/">http://www.culture.gov.uk/</a>):             <ul style="list-style-type: none"> <li>By 2002 all public libraries should be on-line.</li> <li>Digitisation of the educational and cultural resources.</li> <li>Training of librarians in the use of ICT.</li> </ul> </li> <li>"BT In-Contact service" for those who cannot afford a full telephone service. Alternatives to disconnection are being examined, together with the needs of people with disabilities.</li> </ul>
<p><b>Promoting competition and competitiveness</b></p> 	<ul style="list-style-type: none"> <li>Establishment of basic rules for e-commerce.</li> <li>Ensure fair and effective taxation of e-commerce working through OECD, the Inland Revenue and Customs.</li> <li>Data Protection and IPR issues.</li> <li>Competition Bill.</li> <li>Liberalisation of the framework where possible and address the problem of double jeopardy between regulators.</li> <li>Competitiveness White Paper and Competitiveness UK initiative.</li> <li>Development of the network of ISI Local Support Centres.</li> <li>Continuation of the business Enterprise Zone launched in November 1997 (<a href="http://www.enterprisezone.org.uk">http://www.enterprisezone.org.uk</a>).</li> </ul>

Area	Action programme
<p data-bbox="188 253 446 286"><b>Fostering quality</b></p> 	<ul style="list-style-type: none"> <li>• Promotion of digital broadcasting through all delivery systems.</li> <li>• Support to public service broadcasters.</li> <li>• Launch of a consultation document on future communications regulation.</li> <li>• Work with broadcasting practitioners and regulators to improve viewers' ability to protect themselves from offensive material.</li> <li>• Internet Watch Foundation, providing a mechanism for the removal of illegal material from the internet. (<a href="http://www.internetwatch.org.uk">http://www.internetwatch.org.uk</a>)</li> <li>• Precautions against undesirable content.</li> <li>• Through the Creative Industries Task Force, encouragement to creative talent to succeed.</li> </ul>
<p data-bbox="188 674 446 741"><b>Modernising government</b></p>	<ul style="list-style-type: none"> <li>• Publication of the Better Government White Paper which will lay out the UK's approach to re-engineering government services in the information age.</li> <li>• Implementation of the NHS White Paper (<a href="http://www.doh.gov.uk/newnhs.htm">http://www.doh.gov.uk/newnhs.htm</a>) and the Welfare Reform Green Paper (<a href="http://www.doh.gov.uk/ohn/ohnexec.htm">http://www.doh.gov.uk/ohn/ohnexec.htm</a>) development of the internet to deepen the dialogue with people about improving the delivery of public services.</li> <li>• Launch of the Government Secure Intranet.</li> <li>• Government staff and offices accessible electronically.</li> </ul>

Launched by the Prime Minister, the strategy is to be delivered by at least three Government departments: Trade & Industry, Education and Employment and Culture, Media & Sport.

An Information Age Partnership has also been created as a public/private partnership. It brings together Chief Executives from major ICT companies (from the BBC to IBM) and Government representatives to exploit opportunities. It is intended that the Partnership will complement the work of the Information Age Competitiveness Working Party set up in November 1997 to look at factors affecting the Competitiveness White Paper.

### 2.3 Realising the vision

The government has implemented three major government policy statements in order to realise this vision:

- Modernising Government White Paper
- The Competitiveness White Paper, "Our Competitive Future", December 1998
- The report of the Performance and Innovation Unit, "e-commerce@its.best.uk", September 1999

It has set up a new organisational structure, which will enable better co-ordination and monitoring of the implementation of these policy statements.

- **Modernising Government White Paper**



Presented in March 1999 by the Cabinet Office, the White Paper "Modernising Government" contained a chapter entitled "Information Age Government". (<http://www.citu.gov.uk/moderngov/whitepaper/4310-05.htm>).

The Government considered that it has been active in several areas but it has not kept sufficient pace with IT developments in administration and public services:

*"We must go much further. Government has so far followed a largely decentralised approach to IT development. We have not developed ways of ensuring that we maximise the benefits of IT for government as a whole. As a result, we have incompatible systems and services which are not integrated. We must do more if we are to obtain the real benefits of information age government, for better service delivery, better procurement and more efficient working".*

Therefore, the White Paper announced that it will put in place a corporate IT strategy for government, develop electronic services for citizens and businesses, establish a Central/Local Information Age Government Concordat, implement framework policies and guidelines across government (data standards, digital signatures, call centres, smartcards, digital TV, Internet web sites, government gateways and portals and better on-line services for businesses), develop financial transactions between citizens and government and ensure data protection. A target date has been established: 2008.

- **The Competitiveness White Paper, "Our Competitive Future: Building the Knowledge Driven Economy"**

Published in December 1998, the White Paper set out the Government's strategy for closing the productivity gap between the UK and other leading economies. As a key part of this, the White Paper set out the aim of achieving leadership for the UK in the global digital economy (<http://www2.dti.gov.uk/comp/competitive/summary.htm>).



It committed the Government to:

- Developing the UK as the best environment in the world for electronic trading by 2002.
- Bringing UK small businesses up to the level of the best in the G7 in the exploitation of ICT.

It contains 75 policy commitments, which are intended to achieve the central aim of supporting the requirements of the knowledge economy, by emphasising and investing in entrepreneurship, innovation and science and technology in general.

The Government publishes a rolling implementation plan of the White paper in order to demonstrate the Government's commitment to play its part (<http://www2.dti.gov.uk/comp/default.html>). It is presented as a working document designed to give detailed information about the Government's plans for delivery.

- **The report of the Performance and Innovation Unit, "e-commerce@its.best.uk", September 1999**

Following the publication of the White Paper in December 1998, the Prime Minister asked the Performance and Innovation Unit (PIU) at the Cabinet Office to lead a cross-government project to develop a detailed strategy to achieve that leadership.

The resulting report, entitled "e-commerce@its.best.uk" was published by the Prime Minister in September 1999. This contained 60 separate recommendations for action, focusing on the measures required to build the market foundation for e-commerce, and to tackle the key barriers to e-commerce uptake - lack of understanding, lack of access and lack of trust. The Prime Minister made it clear that all 60 recommendations had been accepted in full by the Government.

- **New initiatives to accelerate the implementation of the vision were launched in Spring 2000**

In addition, in March 2000 the Prime Minister committed the Government to:

- **Put all government services online by 2005:** The government has brought forward the existing target, set out in the Modernising Government White Paper of getting all government services online by 2008. This decision was taken on the basis of the "*Electronic Service Delivery: Spring 2000*", the third six monthly report on developments of electronic service delivery.

This move was followed, on 3 April, by the launch of the **e-government strategy**: It will introduce e-business methods throughout the public sector. This will include applying 'dot.com' approaches to get information and services online more quickly. The strategy sets out how new technologies like digital TV, call centres, the internet and mobile phones will be used to radically improve public services - making them accessible through the click of a button and direct into people's homes (<http://www.citu.gov.uk/iagc/strategy.htm>).

- **Ensuring that everyone who wants it has access to the Internet by 2005.** The Government has already launched its 'Computers for All' information age initiative in March 1999 via computer loans, tax cuts, legislation, and Internet access schemes. New measures have been announced, such as the pledging of 100,000 cheap refurbished computers to disadvantaged families, fees on basic IT courses are to be discounted by 80% and 700 local IT access centres will be open by 2001.

- **Organisational issues**

A new organisational scheme has been implemented:

- **An e-minister:** the Prime Minister has appointed an e-Minister (Patricia Hewitt) with overall political responsibility for the Government's Information Age agenda.
- **An Information Age Ministerial Network:** chaired by the e-Minister, who's role is to support the progress of the Information Age agenda. More specifically, its purpose is to ensure that the social, economic and e-Government strands of the Government's information age programme are combined as an integrated strategy by developing a shared vision. This is to be accompanied by advising departments on the policies and priorities that will contribute to that shared vision and ensuring that the shared vision and the relevant departmental policies and priorities are presented as a coherent whole to the public, business and opinion formers. It will also monitor progress in implementing the strategy, reporting regularly to the Prime Minister.
- **A responsible for e-government issues** (Ian McCartney)

- **An Envoy structure** composed of an e-Envoy (Alex Allan until October 2000) and an e-Envoy office. The Office of the e-Envoy is leading the drive to get the UK online - the UK Government's strategy for the information age, and therefore is responsible for taking forward the Government's strategy for promoting e-commerce in both the private and public sectors.



It is placed within the Cabinet Office, which sits at the heart of Government, alongside the Prime Minister's Office and the Treasury. The aim is to ensure that the Government delivers on its priorities, and in particular in the modernisation of the Government. Via its Central IT Unit (CITU - <http://www.citu.gov.uk/>), it promotes e-commerce and information age government. This Central IT Unit reports to the e-Envoy and takes the lead on Information Age Government issues and on the use of IT within Government.

- **A network of e-commerce co-ordinators.** The Office of the e-Envoy liaises with departments and agencies through this network (<http://www.e-envoy.gov.uk/2000/strategy/workstreams/ecommscoords.htm>).
- **The Information Age Government Champions Group (IAGC):** This group is made up of 36 senior officials from central and local government, the devolved administrations and the NHS. They are supporting the e-Envoy in implementing the e-government agenda and are leading the development of e-business strategies within their departments, agencies and sectors (<http://www.iagchampions.gov.uk/iagc/about.htm>).
- **The Information Age Partnership (IAP):** it provides a forum for collaboration between the Government and 36 leading figures from the UK's IT, Communications, Electronics and creative content industries. The Partnership, which was established in March '98, is chaired by the Secretary of State and meets every six months (<http://www.dti.gov.uk/infoage/bfiapmay.htm>).

The Prime Minister plays a key role within this scheme: Together the e-Minister and the e-envoy make a written monthly report to the Prime Minister.

## 2.4 Information Society in the devolved Administrations

The Devolved Administrations of Scotland, Northern Ireland and Wales are actively taking forward the information age programme.

### Digital Scotland



e-commerce = business  
[ecommerce-scotland.org](http://ecommerce-scotland.org)

The Digital Scotland initiative is being taken forward by a taskforce, jointly chaired the Deputy Minister for Children and Education and the Chief Executive of Scottish Enterprise. Digital Scotland aims to ensure that Scotland obtains and retains maximum economic and social benefit from information and communication technologies. In addition, Scottish Enterprise has implemented an e-commerce team which is responsible for a number of integrated programmes and projects and for developing a wider strategy aimed at accelerating the development and usage of E-commerce through the Internet and related technologies (<http://www.ecommerce-scotland.org/>).

Several programmes have been implemented such as Connecting Scotland, Ecomm2000, WOW2000, First Steps, Digital Advantage, ICT Solutions for Business and Scotland.org.



## The Wales Information Society (WIS) Initiative Strategic Framework



The Wales Information Society (WIS) Initiative Strategic Framework sets out the visions for leading Wales forward into the Information Age ("Cymdeithas Wybodaeth Cymru" - <http://www.wis.org.uk/>). It is supported by a series of Action Plans covering business, education and training and the public services. WIS is taken forward by the National Assembly for Wales and the Welsh Development Agency, supported by the European Commission.

## The Northern Ireland Information Age Initiative

The Northern Ireland Information Age Initiative (<http://www.dedni.gov.uk/>) developed in March 1999 a strategy framework and comprehensive action plan (Strategy 2010) aimed at ensuring that Northern Ireland takes maximum advantage of opportunities for e-business.

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## 3. "UK online" strategy

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### 3.1 UK Online Annual Report (September 2000)

The Prime Minister launched the Government's UK online annual report, published on 11 September 2000 (<http://www.e-envoy.gov.uk/2000/progress/anrep1/default.htm>). Overseen by Patricia Hewitt, the e-Minister, and Alex Allan, the e-Envoy, the report was developed in close conjunction with partners from within government and industry (Office of the E-envoy: <http://www.e-envoy.gov.uk>).



It sets out the Government's detailed strategy for getting the UK online, with 95 actions aimed at:

- Modernising the UK and global market framework.
- Giving individuals the access, skills and trust needed to benefit from new technologies.
- Implementing electronic government.
- Helping to develop a world class IT, electronics and communications sector in the UK.

E-minister Patricia Hewitt said: "Our UK online strategy is about putting the UK in pole position in the global knowledge economy."

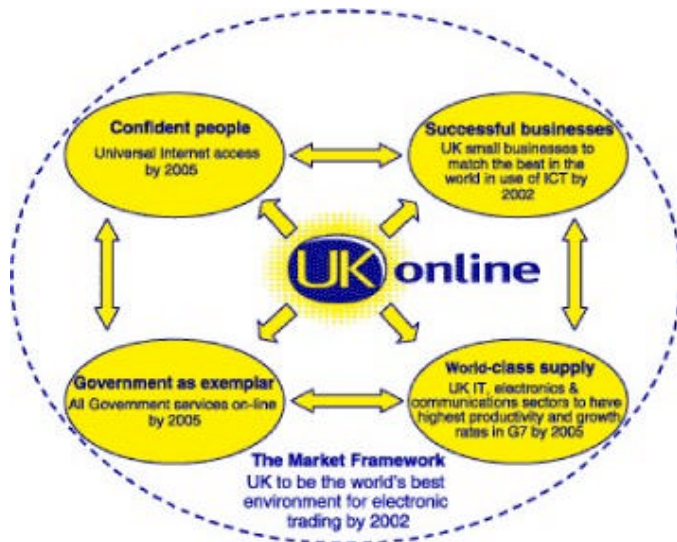
The role of the UK Online Annual Report is to:

- Benchmark the UK's performance against other major countries.
- Set out an updated strategy for success, with 25 commitments aimed at achieving the UK online strategic goals.

The first annual report for UK online sets out:

- The goals of UK online.
- An analysis of where the UK now stands.
- The agenda for change, highlighting the key actions which government and industry need to take in order to meet the goals of UK online.
- The strategy for measuring UK success.





As summarised in the UK online diagram, the UK Government's goals for UK online cover the five areas in which the UK needs to excel if it is to lead in the new knowledge-driven economy:

- **Confident people:** people who have the access they need to information and communication technologies, along with the trust, skills and motivation to use them.
- **Successful businesses:** companies across the economy exploiting information and communication technologies to win business advantage.

- **Government as exemplar:** leading-edge use of new technology in the public sector.
- **World class supply sectors:** IT, electronics and communications supply sectors which are innovative, dynamic and growing.
- **Modern markets:** a market framework, which both empowers consumers (individuals, in business and in government) and encourages competition and innovation from the industries that serve them.


**Table of UK online goals**

Section	Goals
<b>Modern markets: getting the market framework right</b>	<ul style="list-style-type: none"> <li>• To develop the UK as the world's best environment for electronic trading by 2002</li> </ul>
<b>Confident people</b>	<ul style="list-style-type: none"> <li>• To ensure that everyone in the UK who wants it will have access to the Internet by 2005</li> </ul>
<b>Successful businesses</b>	<ul style="list-style-type: none"> <li>• 1 million SMEs actually trading online</li> <li>• The UK's smaller businesses (under 100 employees) to have reached the level of the international best in use of e-business</li> <li>• A higher proportion of business-to-business and business-to-consumer transactions taking place electronically in the UK than in any other G7 country</li> </ul>
<b>Getting government online</b>	<ul style="list-style-type: none"> <li>• 100% of government services are available online by 2005</li> <li>• 90% of low value goods and services (by volume) are purchased electronically by March 2001</li> <li>• 100% of procurement by civil central government is tendered electronically by 2002</li> </ul>
<b>World class supply</b>	<ul style="list-style-type: none"> <li>• To help the UK-based IT, electronics, communications and content sectors contribute to improving the UK's competitiveness by narrowing the productivity gap with the USA, France, Germany and Japan over the economic cycle</li> </ul>
<b>Leadership and co-ordination</b>	<ul style="list-style-type: none"> <li>• To provide the leadership and co-ordination in government needed to make the UK a leading Internet-enabled knowledge economy</li> </ul>
<b>Measuring success</b>	<ul style="list-style-type: none"> <li>• To ensure that government has the information it needs to develop its policies on making the UK the best place in the world for e-commerce, and to monitor progress towards that objective</li> </ul>

The UK online strategy to achieve these goals is outlined in the table below:

UK online: the Government's commitments	Detailed actions
<b>Modern markets</b>	
<b>1. Drive forward competition in Internet access markets</b>	<ul style="list-style-type: none"> <li>• Consult on competitiveness of dial-up access to the Internet</li> <li>• Unbundle local loop</li> <li>• Consult on competition for leased lines</li> <li>• Promote rapid uptake of digital interactive TV</li> <li>• Ensure competitive roll-out of 3G mobile telephones</li> </ul>
<b>2. Establish a new framework for regulation of the converging markets of telecommunications and broadcasting</b>	<ul style="list-style-type: none"> <li>• Publish White Paper</li> </ul>
<b>3. Identify and remove all remaining regulatory and legal barriers to electronic ways of working in the UK</b>	<ul style="list-style-type: none"> <li>• Remove 70% of identified barriers by end 2001, and 100% by end 2002</li> </ul>
<b>4. Take action with international partners to develop an effective, light-touch global framework for e-commerce</b>	<ul style="list-style-type: none"> <li>• Implement the e-Europe action plan</li> <li>• Promote adoption internationally of: 'country of origin' principle; co-regulatory approach; alternative dispute resolution mechanisms for e-commerce internationally</li> <li>• Press for transparent and liberal e-commerce framework</li> <li>• Take international lead in updating tax regime</li> <li>• Promote information security internationally</li> <li>• Publish White Paper addressing international digital divide</li> </ul>
<b>Confident people</b>	
<b>5. Implement a package of measures to improve access to the Internet at home, at work and in the community</b>	<p><b>At home:</b></p> <ul style="list-style-type: none"> <li>• Encourage employers to provide PCs and Internet access for home use</li> <li>• Encourage low-cost leasing schemes for public sector employees</li> <li>• Low cost recycled PCs for 100,000 low-income families</li> </ul> <p><b>At work:</b></p> <ul style="list-style-type: none"> <li>• Promote benefits to employers of having all employees with Internet access</li> <li>• Government departments to address benefits of access for all staff</li> </ul> <p><b>In the community:</b></p> <ul style="list-style-type: none"> <li>• Establish network of UK online centres</li> <li>• All public libraries to offer Internet access with trained staff to offer support</li> <li>• Pilot new initiatives in post offices to help people access and use the Internet</li> <li>• Pilot access for disadvantaged communities</li> </ul>

<p><b>6. Embed information and communication technology (ICT) skills in the education system and throughout lifelong learning</b></p>	<p><b>Education system:</b></p> <ul style="list-style-type: none"> <li>• Improve ICT infrastructure in schools, further and higher education</li> <li>• Improve educators' ICT skills</li> <li>• Stimulate high-quality online educational content</li> <li>• Introduce ICT work placement programme for 16+ students</li> </ul> <p><b>Lifelong learning:</b></p> <ul style="list-style-type: none"> <li>• Invest 140 million EUR 2000-01 through UFI</li> <li>• Offer free ICT 'taster' courses to the unemployed</li> <li>• Offer 80% discounts for computer literacy training</li> <li>• Offer high-quality lifelong learning content</li> </ul>
<p><b>7. Work with industry to ensure a safe and secure environment for e-commerce and to help people trust the Internet</b></p>	<p><b>Protect children:</b></p> <ul style="list-style-type: none"> <li>• Publicise best practice self-protection tips</li> <li>• Safeguard online consumers:</li> <li>• Work with industry to promote the TrustUK hallmark for e-commerce web sites</li> <li>• Draw up 'Consumer Trust' standard for use online by government departments</li> </ul> <p><b>Reduce online fraud:</b></p> <ul style="list-style-type: none"> <li>• Encourage credit card industry to establish online address verification system</li> <li>• Promote tScheme</li> <li>• Combat online criminal activity:</li> <li>• Create advisory body on implementation of ISP interception arrangements</li> <li>• Ensure industry fully consulted on fair contribution to interception costs</li> <li>• Establish a National Hi-tech Crime Unit</li> </ul> <p><b>Protect online security:</b></p> <ul style="list-style-type: none"> <li>• Expand DTI's promotion to business of information security best practice (BS 7799)</li> <li>• Put information security at the heart of e-government</li> <li>• Ensure protection against attacks on critical national information infrastructure</li> </ul>
<p><b>8. Help increase people's motivation to access the Internet by driving up the amount and quality of social content</b></p>	<ul style="list-style-type: none"> <li>• Promote local online content</li> <li>• Explore new ways to stimulate development and availability of high-quality online cultural content</li> </ul>
<p><b>Successful businesses</b></p>	
<p><b>9. Invest an additional £25m over three years to help small businesses exploit the potential of ICT</b></p>	<ul style="list-style-type: none"> <li>• Boost marketing of UK online for business</li> <li>• Additional advisers for UK online for business front-line</li> <li>• Web-enabled call centre with 'virtual expert' support system</li> <li>• Raise awareness of fiscal incentives for small businesses</li> </ul>
<p><b>10. Support industry in improving competitiveness through e-business technologies and processes</b></p>	<ul style="list-style-type: none"> <li>• Sponsor and disseminate e-business research and analysis:</li> <li>• Publish overview of sectoral impact of e-commerce</li> <li>• Facilitate rapid transfer of e-business expertise between businesses and between sectors</li> </ul>

<b>Government online</b>	
<b>11. Get all government services online</b>	<ul style="list-style-type: none"> <li>• Improve the customer front-end</li> <li>• Join up the back-office systems</li> <li>• Set standards</li> <li>• Improve the organisational capacity of government to deliver electronic services</li> <li>• Champion private and voluntary sector involvement in the delivery of electronic government services</li> </ul>
<b>12. Drive forward towards e-procurement and e-tendering targets</b>	<ul style="list-style-type: none"> <li>• Develop coherence and standardisation in e-procurement</li> <li>• Provide advice and guidance on e-procurement systems, tools and techniques</li> <li>• Innovative pilot e-procurement projects</li> <li>• 50% e-tendering by 2001</li> <li>• 100% e-tendering by 2002</li> </ul>
<b>13. Implement a cross-government knowledge management system</b>	<ul style="list-style-type: none"> <li>• Develop four applications</li> <li>• Develop departmental interactivity</li> <li>• Develop change management</li> <li>• Embed Knowledge Network in operational practices</li> </ul>
<b>14. Drive forward citizen participation in democracy as part of the UK online citizen portal</b>	<ul style="list-style-type: none"> <li>• Liaise with Home Office and others on online voter registration and online postal vote application</li> <li>• Participation by devolved administrations and local authorities</li> </ul>
<b>15. Drive forward the use of authentication services both for e-government services and within government itself</b>	<ul style="list-style-type: none"> <li>• Work with Trusted Service Providers to ensure interoperability with government</li> <li>• Identify suitable security and authentication technologies in the marketplace to support government Electronic Service Delivery targets</li> <li>• Exploit and develop government use of Public Key Infrastructure (PKI)</li> <li>• Define relationship between government PKI and the tScheme</li> </ul>
<b>World class supply</b>	
<b>16. Implement a strategy to make the UK the number one country for the supply of high-level ITEC skills, taking account of the recommendations of 'Skills for the Information Age'</b>	<ul style="list-style-type: none"> <li>• Invest at least 13 million EUR to drive forward the ITEC skills strategy</li> </ul> <div style="text-align: center;">  <p>The logo for the Skills Task Force, featuring the letters 'D/EE' in white on a blue background, with the words 'Skills Task Force' in orange below it.</p> </div>
<b>17. Invest in leading-edge e-science</b>	<ul style="list-style-type: none"> <li>• Ensure businesses maximise benefits from investments in science-based infrastructure</li> </ul>
<b>18. Facilitate ITEC knowledge transfer</b>	<ul style="list-style-type: none"> <li>• Incentivise universities to commercialise ITEC research</li> <li>• Facilitate links between the ITEC sector, universities and other sectors of the economy</li> <li>• Review actions needed to facilitate cluster development in the ITEC sector</li> </ul>

<b>19. Implement an action plan for growth for the digital content sector, including through liberalised access to government information</b>	<ul style="list-style-type: none"> <li>• Work with industry to implement the action plan, reviewing progress with the Digital Content Forum</li> <li>• Introduce marginal cost pricing for most basic government information, other than Trading Funds</li> <li>• Introduction of class licensing by HMSO</li> <li>• Public information available in digital form</li> </ul>
<b>20. Work with industry to develop a UK strategy for m-commerce</b>	<ul style="list-style-type: none"> <li>• Develop a strategy for secure, innovative introduction of m-commerce</li> <li>• Host 3G mobile conference</li> </ul>
<b>E-leadership</b>	
<b>21. Establish new mechanisms to co-ordinate access and skills initiatives at national, regional and local level</b>	<ul style="list-style-type: none"> <li>• Michael Wills, Parliamentary Under-Secretary of State, DfEE, to take lead in co-ordinating community-based IT access and skills initiatives at national, regional and local level, working with e-Minister, e-Envoy and DCMS Ministers</li> <li>• Government Offices in England and Wales to co-ordinate implementation of these initiatives at local and regional level, reporting on progress to the Parliamentary Under-Secretary of State every six months</li> </ul>
<b>22. Further develop and implement the UK online campaign</b>	<ul style="list-style-type: none"> <li>• Work with private and voluntary sectors, consumer groups and trade unions to develop the national campaign to get the UK online</li> <li>• Hold a review of the UK online campaign's impact</li> </ul>
<b>Measuring success</b>	
<b>23. Secure international agreement to a common framework for measuring e-commerce</b>	<ul style="list-style-type: none"> <li>• Complete agreement on a common definition</li> <li>• Agree core set of common questions</li> </ul>
<b>24. Improve e-commerce measurement in the UK</b>	<ul style="list-style-type: none"> <li>• Further work required in the following areas:</li> <li>• individual use</li> <li>• business use</li> <li>• government use</li> <li>• ITEC sectors</li> <li>• telecoms/Internet access costs</li> <li>• Work with Information Age Partnership to identify global benchmarks for measuring the UK's success</li> </ul>
<b>25. Implement a programme to evaluate the net economic impact of e-commerce</b>	<ul style="list-style-type: none"> <li>• First economic impact study undertaken</li> </ul>

### 3.2 New developments: the "UK online" campaign

On 11th September 2000, the Prime Minister launched a "UK online" campaign, announcing initiatives and investment to get people, business and Government itself online. UK online is a partnership between government, industry, the voluntary sector, trades unions and consumer groups that aims to make the UK one of the world's leading knowledge economies.

It has three main targets:

- For Britain to be the best place in the world for e-commerce.
- Universal access to the Internet.
- All Government services on the net.

The Government announced three key packages of initiatives as part of the campaign:

#### Getting people online



The naming of the first 600 UK online centres in some of the poorest communities - where anyone can get training on how to use the Internet. The Government is aiming for over 6000 UK online centres including all public libraries.

Later in autumn 2000, learndirect will open for business. learndirect will deliver its courses on-line and anyone will be able to use it, either at work or at home. By 2002 learndirect aims to be providing 1 million courses a year (<http://www.learndirect.co.uk/>)

#### Getting business online



The launch of "UK online for business", which is the new name for the Information Society Initiative, backed by 16.5 million EUR in 2000 and an additional 24.9 million EUR over the next two years will help companies exploit new technologies by providing help, with expert advice available face to face, online or by telephone.

(<http://www.ukonlineforbusiness.gov.uk>)

#### Getting government online

A new Performance and Innovation Unit report on e-government has been published setting out the blueprint to get all government services online by 2005. Over 1.7 billion EUR of investment has been earmarked for electronic service delivery over the next three years. (<http://www.cabinet-office.gov.uk/innovation>)

The Prime Minister said that, "Its goal is to get the UK on-line. To meet the three stretching targets we have set: for Britain to be the best place in the world for e-commerce, with universal access to the Internet and all Government services on the net. In short, the UK on-line campaign aims to get business, people and government on-line."

Furthermore, there will soon be a single point of entry to government information and services online. Available 24 hours a day, it will offer the easiest way to access government services and information on the Internet. (<http://www.ukonline.gov.uk>)

Information will be organised around particular life events as quite often the information and services connected to a single event are delivered by different government departments. By grouping these linked services together online, the aim is to make life easier and more straightforward for those dealing with the government.

### 3.3 European and International co-operation

The UK Government intends to:

- Work with the European Commission and other Member States to implement the e-Europe Action Plan.
- Work with European Union and other international partners to help develop the Information Society in the wider international arena.

- **eEurope**

The European Council held in Lisbon on 23-24 March set the ambitious objective for Europe to become the most competitive and dynamic economy in the world. It recognised the urgent need for Europe to exploit quickly the opportunities of the new economy and in particular the Internet. The UK Government worked intensively with the Commission and Member States to develop the detailed action plan for creating 'e-Europe' which was subsequently endorsed at the June European Council at Feira.

The Government now intends to continue working with the European Commission and the other Member States to implement the e-Europe 2002 Action Plan. In particular, the priorities of the UK Government are those aspects of the Action Plan dealing with completion of the legal and co-regulatory framework for e-commerce, increased competition in communications markets, and promotion of skills and education.

- **International action**

In addition to the above, by working with partners in the wider international community, the UK Government will:

- Promote the 'country of origin' principle.
- Promote internationally the UK's co-regulatory approach to the Internet.
- Encourage the development of Alternative Dispute Resolution (ADR) for e-commerce.
- Continue to press for a transparent and liberal e-commerce framework in multilateral forums, such as the World Trade Organisation, World Intellectual Property Organisation and OECD.
- Play a leading role in international efforts to update the tax regime so it is relevant to a world of electronic as well as physical markets.
- Work with their international partners, through G8, OECD and the European Union, to promote information security best practice, which will support confidence in online trading and mutually compatible regimes on authentication.
- Work with international partners to address the international digital divide.





# **Additional contributions**

**from the EFTA/EEA  
countries**

**Norway and Iceland**



## Foreword

Following the presentation of the report on "Public Strategies for Information Society in the Member States of the European Union" to the PROMISE Committee in October 2000, Norway and Iceland have expressed their wish to be included in the survey.

Both countries have volunteered a contribution, following the same template as for the EU Member States reports. The ESIS team has formatted the text and added pictures.

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# Norway

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## Introduction

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Norway is among the most developed Information Society countries in the world. Norway is now ranked 4th out of 55 countries in the 2000 Information Society Index (IDC/World Times Survey), after Sweden, United States and Finland. The country is among the world leaders in access and use of Information Society Technologies, for example concerning technological infrastructures, internet penetration, PC access and use, electronic commerce, mobile phones and ICT in schools.

Norway's Information Society policies have developed gradually from the first half of 1990s.

The title of one of the most central policy documents in the previous decade was "The Norwegian way to the Information Society. Bit by Bit" (1996). The title ("Bit by bit") reflects that the country's policy in this field has not been one of revolutionary vision, "grand schemes" and radical societal change with a strong, centralised governmental political and financial involvement. Rather, the Norwegian approach to ICT and Information Society issues has since the 1980s been characterised by more decentralised, modest and incremental visions and measures; by "piecemeal engineering" and a focus on stimulating local and decentralised development. The central governmental plans have focused on constructing political and organisational frameworks directed towards inspiring and supporting the initiation of IT-activities in the different parts of the society; e.g. in the small and medium sized enterprises, in public administration bodies and agencies, in education, cultural life etc. Not surprisingly, a central governmental commitment has been related to infrastructural and legal matters, e.g. removing legal and organisational obstacles to electronic commerce and electronic government.

Judging from the results, it could be argued that the Norwegian way seems to have been rather successful. However, and this is the negative side, we have not managed properly to utilise our advantages in the use of ICT to create new industries, e.g. in the important field of electronic business and e-commerce. This is also connected to another challenge which Norway is facing. In a few years' time, the revenues from the petroleum sector will decrease. In order to maintain the welfare state at its current high level, the country is dependent on new value creation and the formation of new companies. E-commerce and globalisation provide us with an extra challenge, but they also give Norwegian industry new opportunities.

An important policy document from 1996 presented the overall goals for Information Society in Norway. This report from the State Secretary Committee for IT provided a basic policy framework for utilisation of ICT in different sectors: public administration, education, culture, electronic commerce etc. The report defined important IT-political goals for different sectors and these goals were elaborated and specified in the IT plans of the different sectors.

In recent years, the most important initiative has been the "eNorway action plan" which was launched in 2000. The Government's objective with the eNorway plan is to influence and accelerate the development of a knowledge society, so that technology can be used by the whole country and its entire population to increase our value creation and safeguard our welfare level.

A basic premise in Norwegian policies is that a high quality of life is an important prerequisite for innovation and value creation. Such a society is also a competitive advantage in the international struggle to capture knowledge – the cleverest people. That is why our future industrial policy also has to be developed in co-ordination with our welfare and culture policies.

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## **1 The Norwegian Way to the Information Society: "Bit by Bit"**

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In the beginning of the 1990s the governmental initiatives in the ICT area were directed towards developing technical infrastructures, standardisation, preparation for electronic interaction and Electronic Data Interchange, and for utilisation of information as a shared resource. In the period 1992-1995 there was more focus on better use more and better use of information technology in the Norwegian private sector. Slogan: From "nice to have" to "nice to use".

A clearer focus on Information Society issues was first presented in the report from the State Secretary Committee for IT (1996) *The Norwegian Way to the Information Society. Bit by Bit* (<http://www.odin.dep.no/sd/engelsk/publ/rapporter/028005-990194/index-dok000-b-n-a.html>).

This report presented the most important policy framework in the 1990s for plans for utilisation of ICT in different sectors: public administration, education, culture, electronic commerce etc. The report defined important IT-political goals for different sectors and these goals were elaborated and specified in the IT plans of the different sectors.

According to the State Secretary Committee information technology can be an important source of economic development and increased employment, result in a more efficient and qualitatively better public sector, and supply greater opportunities for individuals..

However, new technology has several contradictory developmental features inherent within it.

- It can have a centralising effect, in that large amounts of information and tasks can be handled in one place.
- At the same time, it can have a decentralising effect because, in several senses, the significance of geographical distances can be reduced - many people can be given access to the same knowledge and services.
- Implementation of electronic communication can result in greater availability and openness, but can at the same time entail poorer availability if traditional channels are phased out.
- It can lay the basis for flexible and competitive units through increased specialisation. At the same time, it can have a decisive effect, since large organisations are broken up into small independent units in a network.

The "Bit by Bit" argued that the authorities must cooperate with commerce and industry in ensuring that Norway is able to utilise the potential of information technology for increased competitiveness through improvements in organisation and efficiency and through new products.

- The whole country shall have access to the same basic high-quality telecommunications services at the lowest possible price.
- Emphasis shall be placed on finding solutions that make it easy for consumers to begin using new services, and that make it easy to find one's way around in the market.
- Monopolies of telecommunications services are no longer an appropriate instrument for the achievement of defined objectives.
- Regulated competition is necessary for efficient use of new technology, for cheaper services and for development of new products. In this perspective, protection of privacy, consumer considerations and security procedures must be further developed.

The use of information technology in the public sector must be controlled to ensure that it supports free access to and free exchange of information, and codetermination by individuals. Information technology must contribute to more openness in the public sector, both through increased availability and through improved access to information. It shall be conducive to personal development by supporting individuals both at work and in their free time. Increased information technology must be utilised to create a better society for all. Information technology shall contribute to more efficient use of resources in the public sector advanced user, the public service shall function as a locomotive in Norwegian IT development, and contribute to supplying sufficient users for new solutions.

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## 2. The eNorway action plan

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### 2.1 Rationale and background



In 2000, the Norwegian government launched its "eNorway action plan" ("eNorge planen"), inspired by the European Unions ambitious eEurope plan.

It is available at:

<http://www.odin.dep.no/nhd/norsk/p10001865/index-b-n-a.html>.

The Government's objective with the eNorway plan is to influence and accelerate the development of a knowledge society, so that technology can be used by the whole country and its entire population to increase our value creation and safeguard our welfare level. Innovation, creativity and entrepreneurship should be encouraged. Norway must be an attractive society that has a high quality of life and is beneficial to industry.

The eNorway plan is a process document, and it is said that is important to get started immediately. Industry and organisations are invited to cooperate with the Government, to identify new measures and to take part in the implementation of the plan.

eNorway is an operative plan that describes the situation, what has to be done, who is responsible and when the actions are to be implemented. It is to be revised every six months, and the Government's eEnvoy will report to the Prime Minister every month.

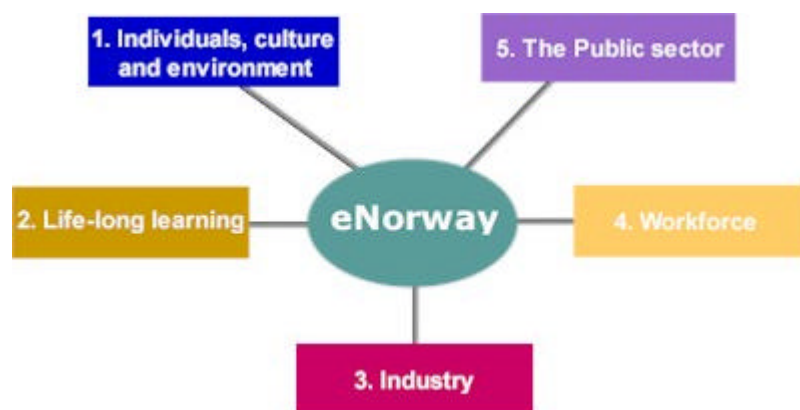
A central goal for the Government is to increase the population's knowledge in and understanding of the use of ICT, so that individuals will be able to use ICT as a tool based on their own needs and desires. The Government will implement measures, laws and regulations that increase people's confidence in the technology. The Internet must be secure and available to everyone – irrespective of his or her level of expertise.

As users of goods and services, we assume different roles with varying needs - as individuals, citizens, students, employees, company managers or public-service customers. That is why the eNorway plan is based on the users when it is divided into five main areas:

- Individuals, culture and the environment
- Life-long learning
- Industry
- Workforce
- The public sector



The eNorway plan has been prepared by the Ministry of Trade and Industry (NHD) (<http://www.odin.dep.no/nhd/norsk/index-b-n-a.html>) in cooperation with the Ministries of Labour and Government Administration (AAD); Finance (FIN); Education, Research and Church Affairs (KUF); Transport and Communications (SD); Foreign Affairs (UD); Health and Social Affairs (SHD); the Environment (MD); Local Government and Regional Development (KRD); and the Ministry of Cultural Affairs (KD). Thirty companies and organisations have also contributed to it.



## 2.2. Central goals and issues in the eNorway action plan

- **The individual, culture and the environment**

A central goal is to lay the foundation of an information and knowledge society for everyone.

Public arenas must be utilised so that everyone has access to information and communication technology irrespective of where they live, their age, economy or level of education.

- More and more services are becoming available digitally. In order for as many people as possible to be able to utilise the technology, we must ensure that skills are available in the local environment and we must influence the development of new products so that they are simple and user-friendly. We must avoid creating new social gaps between those who have and those who do not have access to the technology.
- The Internet provides new opportunities for insight into matters being processed by the public administration, and it will increase people's ability to be involved. It may also increase the opportunities for openness and participation in political decision-making processes.
- The dominance of the English language threatens our own language. There must be co-ordinated efforts to safeguard the Norwegian languages.
- ICT may result in a better utilisation of resources and decrease the damage to the environment. At the same time, there are significant environmental problems related to the production, use and waste disposal of computer equipment, and it is not certain that the overall environmental accounts will be positive.

- **Life-long learning**

A central element in the plan is to work for the importance of education and research so that Norway strengthens its position in the global information and knowledge society.

- ICT must become an integral part of all education in Norway. Pupils and students must have equal opportunities to access ICT. The capacity of universities, colleges and high schools to teach ICT subjects must be increased in order to cope with society's need for skills. The opportunities available through information technology to develop new network-based education services must be utilised.
- The concept of education is changing, and learning today takes place not only in educational institutions. ICT is creating new methods of learning that must be utilised. Network-based learning and distance education provide opportunities to use the workplace and the home as classrooms. This makes demands on the educational institutions, while also providing new opportunities for growth industries in the e-learning sector. Learning must take place throughout the individual's lifetime and must be offered to everyone.
- It is important to strengthen the dialogue concerning an efficient, user-adapted education system that is taking place between research institutions, the education sector and industry. Such cooperation will help to identify the need for new skills and ensure flexible educational choices.

Learning and skills are the keys to grasping the growth opportunities and challenges we are facing.

- **Industry**

In order to ensure industry's competitive ability, we must increase our commitment to innovation, upgrading skills and R&D. Norway must be at the forefront in the development of e-commerce and business management.

- The level of knowledge regarding the use of ICT and e-commerce must be increased in industry, the public sector and among people in general.
- The regulatory conditions must be made suitable for effective competition for high-capacity services at a reasonable price, which will contribute to investments and safeguard the interests of the consumer. Electronic communication must be just as safe and be regarded as equal to paper-based communication.
- An environment must be created in which technical solutions and skills are developed quickly. Norway must become an interesting test country and place to locate in for international companies.
- The Government's objective is to strengthen the Norwegian R&D efforts to the average OECD level by the end of a five-year period, and to increase the efforts in the private sector.
- Through the eNorway plan, the Government will also help to further develop the ICT industry as an independent, growth industry. The necessity of internationalisation and the need for skilled labour is particularly pressing in this sector.

- **Workforce**

We must ensure that all groups have the same right to work in the knowledge economy and employees must be ensured the right and opportunity to update their knowledge in line with the new requirements.

- The Lifelong Learning reform must take care of the new knowledge requirements that are necessary in the rapidly changing working life.
- Information and communication technology brings new ways of organising work, and it makes greater demands on our knowledge. In the new economy, a company's most important capital will be its employees' skills. The Lifelong Learning reform is therefore an important tool for making employees as suited as possible to face these developments.
- In the current tight labour market, the need for more employees with ICT skills cannot be solved simply by establishing more student places or by importing labour.
- There will be a need for measures that provide experience of how ICT expertise can be developed in working life. The new technology also makes it possible for new groups to participate in working life. New technology can drastically improve disabled people's chances of gaining paid employment.

- **Public sector**

With the help of ICT, rapid, individually adapted, cost-effective services are to be developed. Solutions must be developed that integrate the entire administrative value chain and which provide good results for all sectors and administrative levels.

- The public-administration system must be open 24 hours a day, and users must have access to information and services on their own terms.
- ICT must be utilised to strengthen the public-administration system's ability to change and reduce costs, including freeing resources to strengthen the production of services. ICT must be used to provide better and more efficient health services.
- The public sector must also be a demanding, skilled customer and help to strengthen Norwegian industry's competitive ability. The public sector must be a driving force in this area by being itself in the forefront.

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## **3. Focus on some other initiatives**

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### **3.1 Electronic Commerce**

- **The Norwegian Government policy for Electronic Commerce**

The Norwegian policy for electronic commerce is formulated in the White Paper No. 41 1998-99 "Electronic Commerce"

(See <http://www.odin.dep.no/nhd/norsk/publ/veiledninger/024031-120002/index-dok000-b-n-a.html>).

The overriding objective of the Government is to bring Norway to the forefront of the development of electronic commerce, while reaping the attendant socio-economic benefits and building up a competitive new business sector. At the same time emphasis shall be placed on fundamental values and social aspects, while adverse consequences shall be countered.

The Government will apply the following principles for its policy for electronic commerce:

- The development of electronic commerce shall be market-determined based on corporate and consumer demands for products and services.
- Electronic commerce is still at an early stage of development, but changes are expected to occur rapidly. In this situation, the Government considers it important for the parties to find their roles.
- Framework conditions laid down through regulations must be flexible and adapted to developments. The Government's view is that a combination of government regulation and self-regulation by participants will contribute to establishing confidence in electronic commerce. The public sector shall promote electronic commerce with a view to increasing the efficiency of public procurement and will thereby be a prime mover behind its development.
- In order to establish an appropriate regulatory regime, the Government emphasises an the international coordination of rules and guidelines. An area of key importance is the relationship between national regulations and international rules.

- **Main strategies**

In order to achieve the main objective, the Government will work along five main strategies:

- The electronic marketplace shall be predictable. Predictable legal and economic framework conditions must be established, which secure the national and international competitiveness of Norwegian enterprises.
- The threshold for using the electronic marketplace must be low. An infrastructure and services must be developed with a view to facilitating use and access for all potential user groups in Norway.
- The electronic marketplace needs both buyers and sellers. The number of users must be sufficiently high, and the public sector will contribute to this by using electronic commerce in procurement.
- Knowledge gives power and freedom of choice in the electronic marketplace. Expertise and information must be reinforced in order to promote freedom of choice and counter adverse and undesired consequences.
- In the interest of confidence and credibility, consumer rights,
- protection of privacy and other rights must be safeguarded in the electronic marketplace
- Work will be undertaken to safeguard social consideration such as security, protection of privacy and consumers, including children and youths.

### 3.2 Programme for E-commerce in the Norwegian Public Sector



The Programme <http://www.ehandel.dep.no> is established for the introduction of e-commerce in public procurement over the period 1999–2003. The programme will include procurement at all management levels in government, county councils and local authorities.

The programme secretariat is the Government Administrative Service, Public Procurements Department (<http://www.ft.dep.no>). A steering group is appointed, and comprises of The Ministry of Labour and Government Administration (Leader), The Ministry of Trade and Industry, The Ministry of Finance, The Ministry of Defence, The Ministry of Health and Social Affairs, and The Norwegian Association of Local and Regional Authorities. The Office of the Auditor General participates as observer.

- **Establishment of an electronic marketplace**

The program's main activity for the time being is to establish an electronic marketplace for the public sector. The marketplace will be a national gateway for all who wants to procure goods and services for the public sector in Norway and all vendors to the public sector. In this project, the program seeks to affiliate itself with a co-operative partner (operator) who can establish, operate and develop the marketplace further.

The marketplace will be developed over time with respect to both functionality and number of users (buyers and sellers). The short-term objective is to make the marketplace the preferred resource for public sector entities that wish to implement e-commerce solutions, thereby establishing a larger transaction volume through the marketplace. Transaction volume in this sense is defined as volume measured in Norwegian kroner (NOK), number of users, number of transactions, and the purchase share of affiliated institutions. Further development is directed in co-operation between user representatives, the program and the operator.

In order to reach the short-term objective, the program seeks to establish a Web-based system where buyers in the public sector may order goods and services from existing framework agreements. These framework agreements can be sector-specific, department-specific, regionally specified and/or industry-specific. Special requirements for software, beyond Internet access and standard Web browsers, to connect to the marketplace will not be made of buyers. Concurrently, an arrangement will be made for users to integrate their internal systems with the marketplace quickly without incurring unreasonable expenses.

### 3.3 Electronic Government

- **Electronic Government – an action plan for cross-sectoral IT development in the Norwegian government administration**

The action plan named Electronic Government covers the 3-year period 1999-2001 and comprises eight lines of action or priority areas listed below (<http://www.dep.no/aad/engelsk/publ/rapporter/index-b-n-a.html>). Cross-sectoral IT-development in government administration is the responsibility of the Ministry of Labour and Government Administration, which acts as a co-ordinator in establishing common infrastructure and generic services in order to support reorganisation and renewal of central government while leaving sector-specific IT development to the discretion of the particular sector entities.

The action plan, which has been adopted by all the ministries, supports the Government's primary administrative goals and its strategy to achieve a user oriented and politically manageable administration with due focus on effectiveness and efficiency, while observing the general principles pertaining to an open and democratic administration under the rule of law. Several of the action lines may be found to have overlapping activities, but their main areas of focus are:

- Establishing a coherent IT infrastructure with national coverage for the public sector. Services offered over the infrastructure will in the near future comprise digital signatures and trusted third parties (TTP) which would also support interaction with the private sector. Later in the plan period efforts will be on standards for common catalogue services, Public Key Infrastructure (PKI), and administrative/organisational systems to provide for the use of smart cards.
- Ensuring a satisfactory level of IT security must be inherent in a successful IT infrastructure in the administration. The main concern is with the administration's use of communications networks and its robustness so that electronic procedures do not reduce the level of confidence and trust in the administration.
- Providing information services on the Internet. The goal is to improve access to government information and services and offer the general public self-service options by allowing simple administrative procedures to be performed as part of a service or automated case handling. A common portal to all public information on the Internet will be established.

The remaining four action lines will build on the foundation made by the above-mentioned priority areas and constitute a more long-term effort to renew government and administrative procedures. The action lines focus on:

- Electronic administrative procedures and case processing. New electronic tools and methods shall become the normal form of work and interaction in public administration.
- Electronic data interchange should enable more simplified and efficient reporting, collection and distribution of information that is required among the levels of government as well as in the interaction between government and the private sector and citizens. A call for tender and framework agreements for providing EDI and electronic forms are foreseen.
- Electronic commerce for public procurement will be promoted by the Government as a means to reduce costs and secure quality for internal purposes. The government's role as a large and advanced user and promoter should contribute to the market awareness and investments needed for a transition to electronic commerce. A "single face to industry" should promote standards that will enable common approaches and critical mass for internal administrative purposes as well as in interaction with the private sector. Legal issues, competence development among key personnel and the phase-in with IT investment in other sectors will be looked at.
- IT management and organisation of central government IT activities is an overall focus to manage the complex reengineering processes and implementation processes needed for the renewal of government administration. Emphasis will be on successful implementation strategies and the prerequisites for reaping the benefits of the IT investments.

- **Implementing Public Key Infrastructure in Government**

The Electronic Government plan includes measures to develop an infrastructure for internal and external electronic communication with the government. The infrastructure shall also support the delivery of e-services to businesses and citizens.

The Norwegian government initiated the Public Administration Network Project in 1996 with a view to establishing a secure, trustworthy and effective communications infrastructure for the Norwegian public sector - comprising both local and central government (<http://forvaltningsnett.dep.no/>).



The project's main achievement was the institution of a series of framework agreements, based on common requirements specifications, covering data communications, network products and services, data products, Internet-services, etc. , as well as TTP-services and digital signature/encryption. A framework agreement with 3 CSPs, and 4 software/smartcard suppliers were signed in May 1999. The CSPs are: Norwegian Post (iD2) and Norwegian Telecom (Entrust) and a third company (Strålfors) that actually also uses Norwegian Post to run their CA.

Under the framework agreement, CSPs were required to cross-certify their choose freely between the CA-services offered. The cross-certification requirement included the interconnection of certificate directories of the 3 CSPs, with the possibility of transparent search for certificates across the directories. The cross-certification agreement was signed by the three CSPs in September 1999.

- **The Norge.no web site**



This service <http://www.norge.no> was established in 1998 by the central government authorities and the board of the Norwegian Association of Local and Regional Authorities in order to provide easy access to public sector information and services on the web supplied by public bodies at state, county and municipal level.

The goal defined in the "Electronic Government Action Plan" is for all central government activities to make active use of the Internet as a channel of communication in their information strategies. By means of the Internet, the public, the commercial sector and the administration itself can be offered prepared information and opportunities to communicate with the administration. As of now, some 80% of state services and agencies have set up information services on the Internet. Finding the information one needs is becoming an increasingly difficult challenge.

To meet that challenge, a common web site for and overview of the public sector, known as Norge.no, is being established on the net. It is intended to contribute to the perception of the administration as a coherent unit, and to make it easier for the public to find relevant information on the Internet. However, full benefit will not be derived from such a shared gateway until all public sector bodies are on the net and providing high-quality information and services. Another main objective for Norge.no will therefore be to encourage more and better services.



The norge.no website has been established by the central government authorities and the board of the Norwegian Association of Local and Regional Authorities to provide a joint access point to all Norwegian public sector information on the web. The service is designed for use by the general public and government officials at all levels. Initially, norge.no will be run as a two-year project. The service will then be reviewed in order to determine whether it should continue on a permanent basis.

### 3.4 Competence, ICT and learning

#### • ICT in education

In the area of ICT in education, Norway has recently launched an action plan for the period 2000-2003 (<http://www.odin.dep.no/kuf/norsk/p808/p810/index-b-n-a.html>). The Norwegian educational system is relatively well equipped with IT-equipment, especially on the higher levels. A basic challenge seem to be to utilise ICT in productive and innovative pedagogical ways. Comparative surveys across Europe indicates that Norway is among the best concerning Internet and PC access, but is not in the front in pedagogical utilisation.

The new ICT-plan is divided into six areas:

- Educational facilitation
- ICT as a subject and ICT in subjects
- Teacher competence
- Research and development
- Organisational facilitation
- Infrastructure and co-operation



The plan contains several initiatives that are relevant for the eEurope initiative, such as the development of a Norwegian Learning Net, (<http://skolenettet.ls.no>) a common gateway to Norwegian Education.

The Norwegian LearningNet is supposed to create a better co-ordination of digital learning resources at all levels in Norwegian education and act as a catalyst for the implementation of learning technologies and new forms of learning.

#### • Lifelong learning - a new Competence Reform

In May 1999, the Norwegian government submitted a new bill proclaiming an individual's right to educational leave (<http://www.odin.dep.no/kuf/norsk/p808/p10000970/index-b-n-a.html>). The right will also include civil servants. The bill is part of a new reform called **The Competence Reform**. The reform is based on the idea that all adults should have an individual right to continuing education and training.



*Kompetansereformen*

In January 1999, The Norwegian National Assembly debated the reform on lifelong learning. The debate revealed broad political consensus on the need for a reform of adult education, encompassing both basic education for adults and continuing education and training.

The reform will therefore, in addition to granting the right to study leave, allow adults who have not completed primary, lower secondary or upper secondary school to finish their education. In cooperation with the social partners, the government will also develop a system to document and recognise adults' non-formal learning, a system that has legitimacy both in the workplace and in the educational system. The competence reform will be implemented as a process in which employers, employees and the government will have to make an active contribution when it comes to funding, organising, adapting, developing and implementing. A main issue is financing. As a first step, the Government, as part of the pay negotiations last May, announced a 400 million NOK grant over the next 2-3 years. The social partners are expected to contribute to the further financing of the reform in connection with the pay negotiations in the spring. In the government sector the reform will also be on the agenda when it comes to pay negotiations.



### 3.5 Culture Net Norway

Culture Net Norway - Kulturnett Norge (<http://kulturnett.no/html/cnn.htm>) is the official gateway to Norwegian culture on the web.



- The services include an extensive database containing links to various Norwegian culture sites, a cultural calendar of events across the country and news about culture and the Internet.
- English-speaking visitors are offered a smaller collection of links to sites concerning Norwegian culture, sites that are either in English or non-verbal. Also look to our listing of links leading to other culture nets around the world.
- Culture Net Norway is responsible for coordinating the four sites Art Net, Library Net, Archive Net and Museum Net. Museum Net is so far the only site to offer services in English.
- There are also regional culture nets in four Norwegian counties, Østfold, being the only one with English pages at the moment.
- Culture Net Norway is financed by the Ministry of Cultural affairs and organised by the National Library.



# Iceland

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## Introduction

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Iceland is the second largest island in Europe with only 2.7 inhabitants per square kilometre. Iceland is one of the least densely populated countries in Europe. The population of Iceland is about 279,000 and around 62 percent of the population live in the capital city, Reykjavik, and neighbouring municipalities.

Living standards in Iceland are among the highest in the world. The economy, based on fisheries and agriculture at the beginning of this century, has diversified into manufacturing and service industries in recent decades. The economy is now transforming to a diversified modern digital economy where about 78% of Icelanders have access to a computer with an Internet connection according to an Internet survey conducted in September 2000. Sophisticated telecommunications facilities, through fibre-optic cable connections, offer reliable direct international links for telephone, fax and data networks.

Telecommunications are deregulated and telephone charges in Iceland are the lowest within the OECD. A milestone has been reached in telecommunications with the establishment of a single rate for phone calls anywhere within Iceland, thereby eliminating regional cost-disparities.

Extensive cellular mobile phone systems are also operated. A survey from September 2000 shows that 79.1% of Icelanders between the ages of 16 and 75 use GSM mobile phones, and 52.8% use SMS text messages. A recent Action Plan from the Ministry of Education, Science and Culture aims to set up wireless networks in upper-secondary schools and give students the option of using laptops or other mobile devices to access dedicated educational material on the Internet. Thus the young population will be able to use modern mobile technology for educational purposes.

### **Policy and Action**

Since 1995 the Government and individual ministries have published information strategies or action plans, the most recent being the Project Plan for the Development of e-commerce and e-government 2000-2002, from March 2000, and the language engineering initiative. Several smaller projects have also been launched, such as a project about Women and the Information Society (website <http://www.simnet.is/konur>) which was geared toward encouraging more young women to work or study in the Information Technology sector.

Iceland has always been quick to introduce telecommunications technology and was the first country in the world to set up a fully digital phone network. The European integrated services digital network (ISDN) has been in operation in Iceland since 1995, giving its industries access to the most sophisticated telecommunications available. International connections are by fibre-optic sea cable and satellite. All urban communities around the country are linked by fibre-optic cable.

### **The Information Society Statistics**

The Information Society Taskforce in Iceland has commissioned five surveys of computer ownership and Internet use in Iceland over the period 1998-2000. Findings are now available from the most recent report, conducted in September 2000. The survey shows that 77.8% of Icelanders (77.9% of women and 77.7% of men) have access to a computer with an Internet connection. It also reveals that 64.7% of Icelanders have access to the Internet at home. Furthermore, 82.5% of those who have access to the Internet have an e-mail address and roughly half of those who have access to the Internet (51.7%) use it daily or almost daily. The survey indicates that 19% of Icelanders with Internet access have purchased goods or services over the Internet.

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# 1. Information Society Strategy for Iceland

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## 1.1 First Government policy

In the Government's policy declaration of 23 April 1995, objectives in the governmental political arena for the utilisation of information technology to improve public administration and stimulate the economy were set forth for the first time in Iceland.

## 1.2 The Icelandic Government's Vision of the Information Society 1996



In October 1996 the Government of Iceland published a paper titled "The Government of Iceland's Vision for the Information Society".

It presents the Government's strategy for information society issues (<http://www.stjr.is/framt/vision00.htm>). In this strategy it is considered especially necessary to capitalise on two kinds of qualities that are deeply rooted in the Icelandic national character. On one hand, the nation is strongly motivated towards progress and also open to innovation. On the other hand, Icelanders have a sincere conviction of their cultural uniqueness.

It so happens that Iceland's cultural heritage consists, for the most part, of information, i.e. it is a written and historically based heritage. Information and telecommunications technology, therefore, not only open up new possibilities for the future development of Icelandic society, but also create a turning point in the presentation and understanding of the cultural values the nation has created in past centuries.

### • Main Objectives of the Government's Strategy from 1996:

The chief objective of the Government is to ensure that Iceland shall be in the forefront of the world's nations in the utilisation of information technology in the service of enhancing the quality of life and greater prosperity. To follow up on this chief objective, five main objectives were set forth as a foundation for a vision of the future:

- Icelanders shall have easy access to the information society. Its advantages should be utilised to strengthen democracy and increase the quality of life for the benefit of the public and the Icelandic economy. Information technology should be employed in all fields, whether for innovation, public health, science, the arts or other areas of daily life.
- Complete equality shall be ensured between the public and private sectors in the field of information technology and the information industry. The Government, with the help of information technology, should facilitate access to governmental information and services to establish equitability among individuals and companies irrespective of their residence and economic resources.
- Information and telecommunications technologies shall be mobilised to improve the competitiveness of the Icelandic economy, increase productivity and proliferate the possibilities of exporting Icelandic know-how.
- The educational system shall adapt to changed social dynamics and focus general education and continuing education upon the advantages of the information society, while at the same safeguarding Iceland's language and culture.
- Legislation, rules and working methods shall be re-examined with respect to information technology to stimulate technological progress and to protect the rights of individuals and companies.

### **1.3 Development project 1997-2002 steered by The Information Society Taskforce**

Following the publication of the strategy, a channel was designed for its implementation. In May 1997 the Government decided to establish a development project for the information society in Iceland. The project will last for five years, from September 1, 1997 to September 1, 2002. A steering group, **The Information Society Taskforce**, operating under the auspices of the Office of the Prime Minister, steers the Information Society Project.

The main task of the Information Society Taskforce is to promote the implementation of the Government's strategy.

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## **2. Implementing the Information Society in Iceland - Action Plans**

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### **2.1 Policy Action Plans**

Government administration and public sector services have taken major steps into joining the Information Society. Information systems have been set up which offer greater streamlining and facilitate routine work. Increased use of IT is steadily opening up the government administration and improving access to information and services. Examples include public access to laws, regulations, Supreme Court rulings and official reports. New material is constantly being added to the Government website (<http://stjr.is>) and those of its agencies.

To an increasing extent, various services are being made available directly through public sector websites, such as downloading of forms, applications for permits and electronic handling of various official business. Examples of electronic services are customs clearance and filing of corporate and personal tax returns.

Various projects which are compatible with the strategy have been launched. Examples of these are a massive increase in supply of specialist education in the field of IT, IT development schools have been set up, distance teaching and medical teleworking have been growing, Internet broadcasting of parliamentary debates began in 1998, and a "Regional Bridge" has been set up which links regional communities via teleconferencing. Necessary preparatory work has been conducted to define new IT tasks and draw up proposals for their implementation. Among other things, this work has been undertaken by ministries, committees and working groups. Examples of the work undertaken are design of health service information strategies, a study of Icelandic law with respect to electronic commerce, a study of language engineering, publication of an IT purchasing manual, strategic planning for telecommunications, and committee work on access to archives of law via the World Wide Web.

Extensive consultation on information society issues has been established between ministries, the office of the Althingi (parliament), employers, unions and various other interested parties. A number of consultative groups and committees are in operation to secure such consultation.

The Ministry of Health and Social Security and the Ministry of Education, Science and Culture have published information policy plans.

## **2.2 Information policy in the health care system - Ministry of Health and Social Security**

In the Information policy of the health care system, the health service is seen as a large user of communication systems that will make great demands for transmission capacity, largely due to transmission of digitalised images. It is proposed to develop a health network connecting all participants in the health service in Iceland. Communications now made in writing, such as medical notes, prescriptions and medical test results shall be conducted via the network.

## **2.3 Action Plans within Ministry of Education, Science and Culture - Action Plans and Policies 1996-1999**

An initiative in the field of education was one of the priority projects in the Government Strategy from 1996. The Policy of the Ministry of Education, Science and Culture in Information Affairs 1996-1999 outlines how the Ministry, together with schools, cultural institutions and other institutions under its administration, must exploit the rapid advances which have been made in recent years in order to improve their services and increase efficiency.

The policy points out 30 key aspects concerning the use of information technology that are of primary importance for the educational system and cultural life.

MENNINGARNET  
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Among these aspects are a focus on teacher training and production of educational materials using multimedia technology, establishing ICT pilot schools, making libraries public information centres, establishing a single cultural information network that connects all cultural institutions (Menningarnet, website: <http://www.menning.is>).

While it is important for Icelanders to keep up with current international cultural developments, it is considered no less important for them to present their own culture internationally. In this new environment increased emphasis must be given to safeguarding the unique characteristics of the Icelandic language and culture.

## **2.4 Funds for Information Society Strategy Projects 1999-2000**

The Government budget for 1999 earmarked special funds for the first time for new projects which are compatible with the information society strategy. Furthermore, the budget for 1999 included a special supplementary allocation for distance teaching. A new target plan for IT research and development was also launched in 1999. It is planned to allocate special funds to IT projects over a five-year period. These new budget allocations have given added impetus to implementation of the strategy. An allocation of same amount of funding towards such projects is assumed in 2000 and the budget for 2000 also includes a special supplementary allocation for language engineering.

## **2.5 Project Plan for the Development of e-commerce and e-government 2000-2002**

The Government of Iceland's vision of the information society, which was published in October 1996, defined three priority projects which are considered to play an important role in its realisation. These are:

- an initiative in the field of education,
- adequate transmission capacity and security in the telecom system, and
- adherence to the government's tendering policy in software purchases.



In light of rapid developments in information and telecom technology, the Information Society Taskforce considered it necessary for the government to review its focuses. International cooperation is now focusing closely on the development of e-commerce which can lead to greater economic growth, job creation, increased international trade and improved social conditions. It was proposed in March 2000 that the government should make e-commerce and e-government the fourth priority project in implementation of its policy on the information society, and recommend the allocation of increased funds to this area (document available in English at <http://brunnur.stjr.is/interpro/for/for.nsf/pages/enskauppmenu.html>).

The highlights of the Project Plan concerning e-government and e-commerce are:

<b>E-government</b>	
<b>Development and pilot projects</b>	Providing funds for pilot projects in e-government/e-commerce, providing better service and usability by further development of the government website ( <a href="http://www.stjr.is">www.stjr.is</a> ), launching of a plan to develop a website that brings government closer to the people and makes government more responsive to citizens, initiation of teleconference systems in government offices and pilot projects in using electronic voting.
<b>Access</b>	An initiative will be launched regarding public access to terminals (simple touch screens and/or regular computers) in government agencies. Plans must be made for improved student and teacher access to the Internet.
<b>Government in-house document management system:</b>	The in-house document management system needs to be under constant development and review. The existence of working procedures at ministries, and compliance with them, needs to be enforced and the document management system will be taken into service in all Icelandic embassies (and permanent committees) overseas.
<b>The Internet</b>	Low telecommunication cost is therefore a precondition for enabling the public sector to transfer the bulk of various services entirely to the Internet. A concise (electronic) information brochure shall be produced for government agencies, ministries and businesses in Iceland, explaining the legal side of electronic documents, e-mail and copyright and issues concerning increasing computer and Internet use by employees.
<b>e-commerce</b>	
<b>Review of legislation</b>	A committee is at work at the Ministry of Industry and Commerce to prepare for incorporating an EU directive on electronic signatures into Icelandic law. The project plan also points out how to incorporate the EU framework directive on e-commerce into Icelandic law when it has entered into effect within the EU. The project plan suggests how to disseminate know-how and experience by educating public sector employees, technologists and the general public about e-commerce.

## **2.6 Action Plans within the Ministry of Education 2000-**

The Icelandic government has agreed an action plan in language engineering to preserve the position of the Icelandic language in the Information Society. This plan will be administered by a task force under the Ministry of Education, Science and Culture.

The Ministry of Education, Science and Culture is initiating an action for the developing an electronic education system, by the use of metadata. The Ministry will work with all producers of educational material in Iceland to encourage them to tag their material with metadata according to standards and guidelines provided by the Ministry. This material will then be made available on the Internet.

Work is under way on establishing a new electronic library system that will serve all libraries in the country: the national library, academic, specialised and public libraries as well as school libraries. The new system will not only contain a common catalogue of books for the whole country, but also provide access to various databases using the latest technology. Initiatives have been taken to provide all Icelandic citizens with online access to key resources for journals and literature. In September 2000 an agreement was signed with an international information technology company to provide institutions, libraries, companies and home users with access to various reference databases and over 5000 periodicals, journals and newspapers. All the texts are cross-searchable and users can search for abstracts and the full text/full image of articles.

## **2.7 Wireless networks and laptops in upper-secondary schools**

The Icelandic Minister of Education, Science and Culture has set the goal that every new student commencing studies in upper-secondary schools (age 16) shall have the option of owning a laptop computer or a wireless device to access educational material. The project will commence with a pilot project between the Ministry and three upper secondary schools in the school year 2000-2001. Teachers will similarly be given incentives to use laptops in their work. All laptops will be networked through wireless technology in the schools and students and teachers will be able to use the laptops to access the Internet from home.

The Ministry of Education, Science and Culture is now initiating public-private partnerships to develop means to produce educational material and make it accessible on the Internet.

By giving each student access to a laptop the vast majority of the population will be able to use modern mobile technology and have open access to dedicated educational material on the Internet.

The website in English about the information society in Iceland is at <http://www.iceland.is/it>