Ubiquitous Information Society

Action Programme 2008–2011

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Preface

Technological development continually creates new opportunities to improve people's everyday lives and work productivity, while also offering numerous new areas of application and service opportunities for business life and the public sector. New operating practices improve the productivity, efficiency and competitiveness of companies and the public sector, and present new business opportunities. The introduction and utilisation of information and communications technology increases equality, social contacts and participation among people, and facilitates the availability of information and services. That's why it is worth promoting the utilisation of information and communications technology through social and concrete measures.

The development of the information society, however, also contains threats, such as increasing inequality among citizens, a weakening of information security and the protection of privacy, and difficulties in adapting to an increasingly technical operating environment. At their most critical, threats are directed at social and economic efficiency, because modern societies are increasingly dependent on information and communications technology and systems. An information society policy must also be able to respond to these challenges.

In the light of the most recent international comparisons, Finland is losing its position in some areas as an information society pioneer. The primary goal of the national information society policy is to increase citizens' wellbeing and economic productivity by utilising information and communications technology. At the same time, the objective is to strengthen Finland's position as a leading information society country. This work utilises Finland's traditional strengths, such as speed of reaction to changes that take place in the operating environment, as well as the long-term, close cooperation of the public and private sector.

Information society development must be promoted in all areas, both in the development of infrastructure, public electronic services, and content as well as in safeguarding fundamental requirements such as security and trust. As the information society develops, the challenges also change, so information society work is a continuous process.

The challenge for the whole of Finnish society is to take full advantage of the opportunities brought by technological development and to avoid the pitfalls. The action programme is the national roadmap of the information society policy. The programme has wide social support and with its help we will ensure that the national information society policy benefits the whole of society.

Minister of Communications Suvi Lindén
Chair of the Ubiquitous Information Society Advisory Board

Ubiquitous Information Society Action Programme

The national information society policy is formulated in the best interests of citizens and companies. The policy is dictated by jointly set objectives and the work required to achieve them. Building an efficient information society requires both public and private sector investment, mutual cooperation, and the courage to recognise and address prevailing shortcomings.

Action programme objectives

The ubiquitous information society action programme aims to secure the strong, rapid and balanced development of Finland's information society. Action programme projects and measures seek to safeguard the current service offering and to create new services for citizens and companies. The projects will also help enhance the productivity of Finnish society as well as international competitiveness.

Public administration projects at the centre

The ubiquitous information society action programme is centred on the development of public administration information society projects. The public administration's task is to promote the development of the information society by creating operating conditions for companies and by actively developing its own services and operating practices. Business life is also strongly involved in developing the information society with its own resources.

The foundation of the national information society policy

- On 21 June 2007, the Government adopted a resolution on the objectives of the national information society in the period 2007–2011. The resolution includes the Government's key objectives and priorities to accelerate information society development.
- The background to the resolution is the third national information society strategy, "A Renewing, Human-Centric and Competitive Finland". It covers the period 2007–2015 and it was prepared during 2006 as part of the implementation of the previous Government's information society programme. The strategy outlines the national vision and strategic intent for the kind of information society the Government wishes to create in Finland.
- On 21 June 2007, the Government appointed a minister-led Ubiquitous Information Society Advisory Board. The Advisory Board's task is to ensure the implementation of the national information society strategy as well as the aims outlined in the Government resolution.
- During its term of office, the Ubiquitous Information Society Advisory Board is expected to provide insight on the identification of priorities for the national information society policy as well as on the setting of ambitious but realistic goals.
- The Ubiquitous Information Society Advisory Board will report to the Government annually on the progress of key projects presented in the action programme. The action programme will be supplemented flexibly during the Government's term of office and updated according to new measures or perceived shortcomings.

Challenges of information society development

Information society development is long-term work, requiring sensitive recognition of changes taking place in the operating environment. It is of prime importance that information and communications technology is widely utilised in Finnish society. The operating practices and business models it facilitates increase productivity and efficiency in all sectors.

The private sector has a key role in developing information society services. The roles of regions, municipalities, towns and cities as well as various organisations and associations are also significant in developing the information society.

Opportunities for citizens to participate should be developed so that various perspectives on the development of the information society are obtained.

Benefits highlighted through skills and awareness raising

Developing information society skills and preparedness is a huge challenge. Moreover, developing information and communications technology skills and the expertise required in the information society affects us all: public administration, companies, individual citizens and the different sectors of society.

Information technology skills should be developed in, among other things, education, social services and health care, and in Finnish companies, particularly in small and medium-sized enterprises. Moreover, improving the professional expertise of software industry companies is an important development area.

Finland also needs awareness raising in which the everyday benefits of information and communications technology are highlighted. Currently, many traditional sectors that could most benefit from information and communications technology applications are prejudiced towards them.

Better life conditions for the elderly

Europe's population is ageing rapidly. In Finland, ageing is taking place even more quickly than elsewhere in Europe. The information and communications sector's product and service development must develop solutions that prevent the social exclusion of the elderly and create conditions for a better life.

Finland has significant, but to date unexploited, potential to create internationally competitive solutions for the needs of the elderly. By utilising information and communications technology, the elderly and the disabled can live in their own homes, and social services and health care as a whole can be developed more in the direction of non-institutional services.

Increased cooperation and dialogue

In the public administration, information society development is slowed by a lack of cooperation between different administrative sectors. This is evident in overlapping work and in the extra costs arising from this. Cooperation should be increased particularly in projects developing information technology architecture. The best practices perceived in different administrative sectors should also be exploited more effectively.

As the public administration's internal processes and operating practices are developed and their supporting infrastructure solutions created, activities should be directed towards utilising the existing opportunities granted by the information society. Alongside the more extensive development projects, it is worth expanding the implementation of concrete pilots that increase service development. Concrete electronic services – even individual ones – significantly improve the everyday lives of citizens and companies.

Public administration and companies have their own roles

In terms of information society development, it is important that the public administration and companies engage in mutual dialogue and cooperation in this work and have their own clear roles. Through its actions and solutions, the public administration should create for companies favourable operating conditions. Companies, on the other hand, should offer the best possible expertise for the development of the public administration's services.

A channel for civic participation

In Finland, utilising the means of civic participation facilitated by the internet is still in its early stages of development. Information and communications technology should be utilised more effectively so that preconditions for civic participation improve and grow. The opportunities for information and communications technology to enhance both democracy and more open and transparent administrative processes should therefore be actively developed.

Innovations through cross-sectoral cooperation

In the field of information and communications technology it is possible to create new, internationally competitive innovations. Bringing the technical and creative sectors together, for example, can give rise to significant new business opportunities. Networking, multidisciplinary cooperation as well as the wider participation of users in the creation of innovations have a key role in developing the innovative information society.

Continual attention should be paid to developing the operating environment of primary providers of content and the creative sector. Without development measures and incentives for the creative sector, the diversity and quality of domestic content and services will suffer, and it will not be possible to take full advantage of the ubiquitous information society.

Internet becomes social media

Internet services and their modes of use have diversified and for many people the internet has become an everyday communications and collaborative tool. The internet is no longer a unidirectional information distribution channel; its users are increasingly participating in the production of information and services.

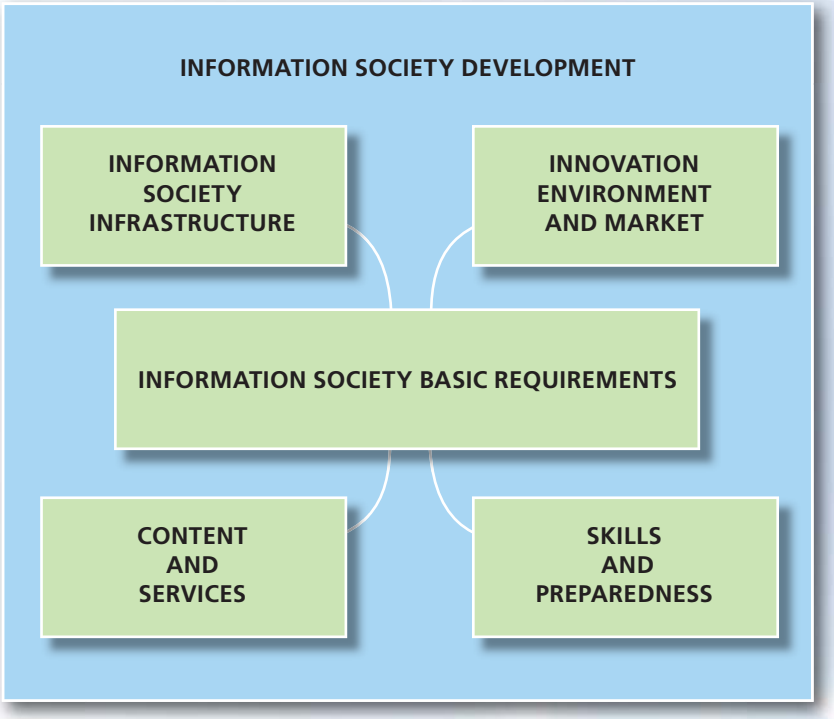
The development of these social media may have significant effects on people's everyday lives, companies' business and society as a whole. These effects should be actively explored and exploited.

Involvement in international arenas

International influence and learning from international arenas constitute one of the cornerstones of Finnish information society development. Finland must better utilise the best practices of different countries and markets and actively seek out new expertise abroad.

Developing the information society

Developing Finland's information society requires both horizontal, all-embracing measures as well as measures targeted at certain goals. Horizontal development themes are the fundamental requirements of the information society and it is necessary to have them in place in all information society development work.



In terms of information society development, the key measures of the Government's term of office will be directed towards developing the following: information society basic requirements, information society infrastructure; the innovation environment; markets, content and services; expertise and preparedness.

Basic requirements for the information society

The basic requirements of the information society include information society expertise, interoperability of various systems, equipment and services, security and reliability, and accessibility and user-friendliness. In addition, it is necessary to develop industrial-age structures and operating models to correspond with the needs of the information society.

The basis of the development of the Finnish information society is to ensure the equal involvement of all citizens as well as customer-oriented service development that addresses the full course of people's lives. Public administration and companies should therefore consider the kind of services that citizens need in different life situations or correspondingly that companies need in the different stages of their life cycles.

The planning of information society infrastructure, products and services should pay more attention to their accessibility, user-friendliness and ease-of-use. The position of special-needs groups as well as children and the elderly as independent actors and service users should also be better taken into consideration.

Maintaining trust

Trust is one of the most important information society issues. Trust in the information society requires technically efficient and secure services. Trust, broadly understood, is the user's experience or view of service quality. The goal is to maintain and strengthen this trust.

Trust is strengthened by easy-to-use services, adequate consumer protection, and confidence in content authenticity as well as protection of consumer privacy and other interests. Improving the position of consumers requires responsibility to be exercised by all parties, including consumers themselves.

Information security has a key role

Society's functions depend almost entirely on the reliability of information networks and systems. Systems are vulnerable to various information security threats and internet crime. Operating environment information security must therefore always be taken into consideration in order to safeguard the operation of critical infrastructure and ensure the integrity of data.

Compatibility through standardisation

There is still room for improvement in the interoperability and openness of information society products, systems and services. The mutual interoperability and compatibility of information and communication networks, terminal devices, information systems and services – in Finland, Europe and elsewhere in the world – is promoted by strengthening standardisation.

Interoperability as well as openness of information systems and software benefit not only consumers but also business life and the public sector. Interoperability and openness present opportunities for innovations, business models and markets, and generate cost savings for information and communications technology acquisitions.

Projects to develop basic requirements for the information society

1) National information security strategy to be updated by the end of 2008.

2) National accessibility strategy to be updated during 2008 and necessary measures to be proposed to ensure unhindered access to information society services.

3) Action programme to be prepared to improve the consumer's position in the offering of information society services.

Information society infrastructure development

The key objective of the information society policy is to promote the offering of fast and advanced communications connections and services to all households and companies.

Broadband services have key significance for the introduction of services as well as the creation of services that require fast connections. In Finland, broadband development has been rapid, and connections are available to 97 per cent of the population.

In the coming years, wireless broadband availability will be promoted by, among other things, evaluating the Wimax operating licence conditions and award process, ensuring the completion of the @450 network, which is intended for sparsely populated areas, by the beginning of 2009 and promoting the availability of 3G networks.

Electronic identification methods

The use and development of electronic services requires reliable, secure and easy-to-use electronic identification methods suitable for different purposes. Secure electronic identification is particularly required for the use of public electronic services that contain sensitive personal data as well as for services that require payment.

Citizens currently have the opportunity to identify themselves in electronic services with either bank identification codes according to the TUPAS standard or with a qualified certificate. In the private sector, use of electronic services is generally based on a user ID and password created by the users themselves.

One objective of an efficient information society is for the same user to be able to identify him/herself in all, or at least nearly all, public and private sector services using one reliable method. Nevertheless, there may be a number of methods in use side by side. A further objective is to ensure the interoperability of different identification methods in Finland and to prepare for the requirements of internationally interoperable identification.

Accelerate electronic invoicing

Electronic invoicing has not advanced sufficiently quickly in Finland. The public sector has a key role in promoting such invoicing, and it should require all invoices to be electronic and adopt electronic invoicing for its own services and products. In this way, the volume of electronic invoices could rise sharply. Electronic invoicing for consumers is also taking off.

Demand exists for electronic invoices, but to date an operating model and also, to some extent, ground rules for the whole value chain remain undefined.

Projects to develop information society infrastructure

1) Conditions for the introduction of mobile identification will be established during 2008. Reform of legislation on certification services will be initiated. A resolution on ways to implement electronic identification will be prepared by the end of 2008.
2) The national broadband strategy will be updated and a Government resolution on the strategy prepared by the end of May 2009. During 2008 the level of universal service obligation covering the whole country will be evaluated.
3) Under the Advisory Board, an Electronic Invoicing Working Group will be established with the task of assessing measures to accelerate the adoption of electronic invoicing both in the public and private sectors and particularly in the consumer segment.

Developing the innovation environment and market

In terms of Finland's information society development, information expertise and innovations are playing a more central role. International competition and challenges connected with the future of Finnish society require that the content and structures of innovation policy be proactively renewed.

The task of the national innovation strategy under preparation in the Ministry of Labour and Industry is to create conditions for a wide-ranging innovation policy, to ensure the international competitiveness of our innovation environment, and to promote the creation and introduction of innovations. The Finnish innovation environment must be world class also in the future.

As well as enhancing traditional competitiveness, the strategy will be used to adapt measures of various policy sectors to promote innovation activity. The national information society policy will help in the effective execution of the national innovation strategy, thus ensuring that the elements of the strategy promote the national information society.

Competitiveness of the Finnish communications sector

Finland's communications market is small and national. The opportunities of software, telecommunications and service companies to invest and operate profitably depend to a large extent on national regulation. Major changes taking place in the operating environment should be taken into consideration in the European Union as well as in national communications policy and regulation. The communications infrastructure is becoming internet-based and convergence is accelerating in service provision.

Regulation must take a position on openness of competition and on the consumer's position. A flexible and predictable operating licence policy will be increasingly important. Conditions for network business must be created. In a small market, the ability of communications companies to invest and receive an adequate return on their investments must be safeguarded.

Copyright system changing

The copyright system is subject to continual change. Copyright legislation will be developed to respond to such change. In addition, the effectiveness of the copyright system will be promoted by other than legislative means. The first stage will clarify whether to include in the Copyright Act an assumption that financial rights to works created in an employment or official relationship should be transferred by virtue of the Act to the employer.

The application of the Copyright Act will also be examined in the light of the communications environment, particularly in respect of multichannelling. The National Copyright Strategy will define long-term approaches as well as measures to develop copyright and industrial property rights legislation and the operating environment. In addition, publicly produced advisory and training services for sole traders and companies will be increased, as will copyright information and research services.

Projects to develop the innovation environment and market

1) Information society development opportunities and needs will be taken into consideration in the national innovation strategy, and the strategy will be executed effectively.
2) An Economic and Industrial Policy Working Group will be established under the Advisory Board. The Group will present its proposals for improving the operating conditions of the Finnish communications business and for promoting competitiveness.
3) The outcome of the Government consultation on copyright will be implemented effectively and quickly, and the work of the Ministerial Working Group on Copyright will be integrated with the work of the Information Society Advisory Board.

Developing content and services

Cultural content and services are increasingly significant in the information society. In terms of digital content and services, the most important development areas lie in their production, delivery and availability.

Digitalisation has caused and will continue to cause changes in distribution channels. On-demand services (VoD) and digitalisation of film theatres present new challenges in the dissemination of audio-visual work and programmes.

For creative sector companies, product development of content is imposing new demands on the allocation of expertise and resources. In addition, market globalisation presents particular challenges for content provider companies.

One objective of information society development is to strengthen the product development activity and related expertise of creative sector companies. There is also good reason to find for Finland suitable revenue models in the offering of audio-visual network services as well as solution models for the digitalisation of technical implementations in the theatre network. The goal is to develop an active domestic and international online distribution market for cultural content.

Television at a turning point

A significant turning point lies ahead for television in the coming years. Among other things, new distribution paths for television programmes, and their significance for operating licence policy and regulation, will have to be assessed, as will the Finnish Broadcasting Company's public service duty and funding beyond 2010.

Television programmes are to an increasing extent available via both cable and satellite. The internet and mobile channels are also becoming commonplace as distribution paths. Technology is changing and, through new compression techniques, high-definition transmissions are spreading more quickly than expected, primarily in the cable and satellite networks.

The terrestrial distribution network is unable to adapt to high-definition distribution as quickly as other distribution techniques, mainly as a result of the frequency capacity required by high-definition transmissions and the costs of distribution to operators. Television and radio legislation must be amended, taking on-demand services, for example, into consideration.

Electronic services in social services and health care

The benefits achievable from development work on health-care information technology architecture and electronic services for citizens are significant for both heath-care providers and clients. The goal is to develop electronic medical records, electronic prescriptions and an electronic clinical data repository, and to introduce them effectively.

After the reform, clinical data will be recorded electronically with a uniform structure in nearly all public and private health-care units, documents will be signed electronically and sent to a national repository service, from where they can be retrieved with the patient's consent beyond register holder boundaries.

For everyone over 18 years of age will be opened a viewing link via the internet to their own medical records and prescriptions. Prescriptions will be sent electronically to a prescription database maintained by the Social Insurance Institution of Finland, from where pharmacies can retrieve them. These measures will improve patient safety and quality of care as well as facilitate more cost-effective operating models in health care.

On top of the health-care electronic infrastructure efficient civic services will be built in cooperation with the public sector and business life. In addition, the utilisation in research, statistics and decision-making of national data stores accumulated in the repository and prescription centre will be developed. Utilisation of information and communications technology to develop social services will be accelerated in accordance with a national social sector information technology project.

Public administration services from a single location

A big challenge of the Government term is implementing a wide-ranging reform of public electronic services, and developing the associated service processes. The new approach represents a way of offering public administration services centrally from a single location, a one-stop-shop process.

A key goal of the services enhancement project is expanding and standardising the range of services offered. The aim, in addition to developing a physical citizens' services network, is a multichannel customer service concept incorporating not only the physical network but also services provided electronically and via call centres.

A further objective is to explore the new approach and new arrangements for public services. For municipalities a common basis will be created for participation and for enhancing municipal sector cooperation with central government and the Social Insurance Institution of Finland.

A one-stop-shop process for public services can help in safeguarding diverse, high-quality services both in sparsely populated areas and in population centres. Customer service and the effective utilisation of information technology can help in delivering a quality and comprehensive service network that will improve productivity and cut the cost of premises. Good customer service will increase citizens' satisfaction and improve the image of service providers.

Personal web portal – a citizen's secure connection with public administration services

An important goal of the Government term is to create a uniform, secure and reliable single gateway to public services online. The aim is to develop a common solution that will provide a centralised location where every citizen can track how their matters are being handled and can obtain public documents, such as decisions, in electronic form. In addition, the authorities can supply citizens, in terms of the services offered, with proactive notifications relating to their life situation.

Via the citizen's web portal, clients will be able to view material, and make enquiries for personal register information and to update such information. Electronic contact data as well as management of consents and authorisations will be closely integrated into the portal.

Information on changes made to the portal will be sent to the client by an agreed path, for example by text message or e-mail. The portal will promote the development of proactive services according to citizens' life situations and companies' life cycles. It will be connectable to existing electronic official communication services. A centralised solution can significantly help, within a short time frame, to promote interaction between clients and public administration.

Projects to develop content and services

1) The EU audio-visual services directive will be brought into effect to provide a clear legislative framework for the offering of on-demand services. Legislation will be brought up to date in respect of new distribution channels for television programmes, and necessary changes to operating licence policy assessed.
2) The transfer to high-definition television transmissions and other television technologies will be modestly promoted according to the market situation.
3) A domestic and international online distribution market will be developed for cultural content.
4) A large-scale multichannel one-stop-shop/customer service centre reform will be implemented by the central government and municipalities together.
5) Electronic web portals will be implemented for citizens as well as companies and organisations.
6) On top of the health-care electronic infrastructure efficient civic services will be built in cooperation with the public sector and business life. The utilisation of information and communications technology will be promoted in social services.

Developing skills and preparedness

People's habits often change slowly, and learning to use new technology can be difficult. As a result, ensuring that people have sufficient skills and preparedness to function in the information society is a great challenge.

At the same time, information and communications technology as well as the learning environments facilitated by it offer new channels and means for developing expertise, learning and study. These opportunities are still a long way from being fully exploited.

Developing information and communications sector expertise is also a great challenge. New means and openings should be found for the development of companies' expertise, particularly in the field of software production. Companies will play a key role in this work. Moreover, continuous attention must be paid to improving the quality of training.

New kinds of learning environments

A key goal of the Government term is to explore opportunities for the development of new kinds of learning environments that exploit information and communications technology. The intention is, in cooperation with business life, to complete a project in which information and communications technology opportunities are tested in the development of learning environments, teaching and study.

Based on the results of the project, further measures will be proposed and an assessment made of how the learning environments of Finnish educational establishments should be developed to correspond better with the needs of the information society.

A safe media environment for children and young people

A goal of information society development is to promote the position of children and young people in the information society and to create a safe environment for them. Today's children and young people are the information society's new generation. They are among the first to adopt new technology and put it to use.

Skills in using technology, however, are not enough to ensure a safe environment for children and young people in the ever-changing information society. For this they need media education, i.e. guidance in perceiving the information environment and responding to the endless flow of information, means to protect themselves from harmful, illegal and unwanted content, the preparedness to report disquieting or frightening content and actions, as well as the capacity to take advantage of the channels of influence and information sharing offered by technology .

The objective is to promote the development of media literacy in children and young people so that they have the ability and skills to process media content critically and from various perspectives.

Projects to develop expertise and preparedness

1) In 2008 the private sector will initiate an extensive evaluation project to develop and safeguard software and other information technology expertise in Finland.
2) In cooperation with business life, a project will be initiated to test information and communications technology opportunities in the development of learning environments, teaching and study.
3) The cooperation of various actors will be tightened in the development of a safe media and network environment. At the same time, clear opera ting practices will be defined to promote, among other things, media literacy in children and young people as well as the responsible use of the media and the internet. In addition, the self-regulation measures of various internet organisations will be examined, as will the degree to which a changing media environment corresponds with legislation.

International influence

A number of the measures of the Ubiquitous Information Society Action Programme correspond with requirements set by the international operating environment, particularly by the European Union, and are a consequence of policies outlined in the EU. Correspondingly the implementation of some measures depends partly on the development of the EU and on general objectives related to this. The effective implementation of several projects requires active influence within the EU.

In action programme projects, international influence will be exercised via each responsible party in the form of everyday international cooperation.

Active involvement in the EU

The promotion of the National Information Society Policy requires active involvement in implementing and guiding the EU's information society policy, such as the i2010 strategy. The i2010 strategy offers an excellent channel for influencing and learning from other Member States and benefiting from their best practices.

The strategy is part of the Lisbon process, the objective of which is to increase the EU's economic growth and employment through information society tools. It defines a comprehensive approach to information society policy in the European Union.

In terms of promoting the national information society policy, it is also important that Finns actively participate in international research and development cooperation, for example within the EU's Seventh Framework Programme for Research.

Development work in international organisations

Important information society development work is also done in other international organisations. The OECD is a significant organisation for the evaluation and research of, among other things, communications market and internet economy development and phenomena as well as policies to the promote them. The OECD produces quality statistical publications and country-specific research studies that describe information society development.

The two-phase World Summit of the Information Society (WSIS) 2002–2004 was held under the auspices of the UN, and its recommendations are currently being implemented around the world. Many other UN organisations such as UNESCO and the ILO also carry out information society development work. Development cooperation of sector companies and work performed by international standardisation bodies is also significant.

Looking outside Europe

Productive international cooperation and influence require close relations not only with EU countries but also with pioneering information society countries outside the EU, such as the United States, Japan and South Korea.

Simultaneously, Finnish technology and service innovations must be actively marketed abroad. Promoting information society development everywhere, in less developed countries too, is also in accord with Finland's objectives.

Compilers of the Action Programme

The Action Programme was prepared by the Ubiquitous Information Society Advisory Board and Secretariat chaired by Ms Suvi Lindén, Minister of Communications.

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