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National Dependability Policy Environments

Finland

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Partner: RAND Europe (NL, Project Coordinator); King's College London (UK);
Cell Network (S); IABG (D); Almaweb (I); LINK (P); ELIAMEP (GR);
Ernst Basler + Partner (CH), Isdefe (E)



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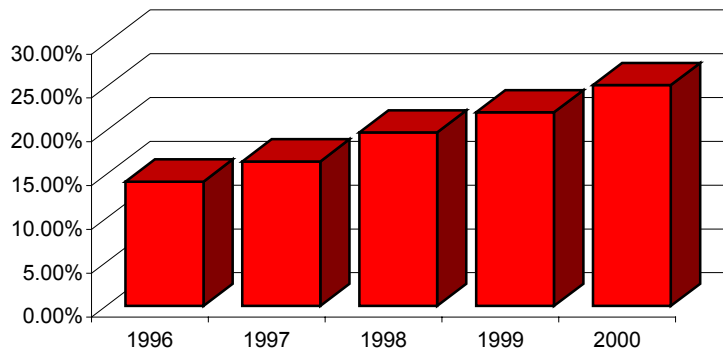
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Overview of the Country's Information Infrastructure

Finland is one of most successful ICT countries in Europe. In 1999, the information sector employed a total of 141,400 persons.¹ In terms of employment, the largest segment of the workforce was the services segment. This segment had over 56,500 employees, of whom more than 25,300 worked in data processing services and nearly 19,300 in telecommunications. More new enterprises were born in content production than in any other part of the sector, but the growth rates of personnel and turnover for this sector are modest. The biggest employers in this segment were publishing (16,700 employees), business and management consultancy activities (7,500), advertising (7,200) and radio and television activities (6,200). The number of people working in the information sector doubled between the year-ends of 1994 and 1999. The number of persons employed in the production of goods (computers, mobile phones, television receivers, electronic components, etc.) has grown particularly fast.²

Finally, the percentage of Finland's total exports that are IT products has been growing rapidly. In 2000, it exceeded 25%.³ The value of information technology exports nearly tripled in the 1996-2000 period, having grown annually by an average of 30%. Over the same time-frame, Finland's total exports grew by 12% per year, on average.

ICT% of Overall Exports



Access to ICT is also quite extended. Almost all children and young people have access to a computer as many families with children have purchased home computers and educational institutions make computers available to young people. In 2000, over 80% of people aged 15-44 had access to a computer. More women than men have access to a computer at work. The only group that has more men than women with computer access is retired persons. Meanwhile, over 70% of people aged 15-44 had access to the Internet, and approximately one third of those aged 10 to 74 had Internet access. Network and email connections were most common among the 15-19-year-olds. The majority of those aged under 20 had Internet access only at school.

¹ Statistics Finland. http://www.stat.fi/tk/yr/tietoyhteiskunta/infhenkilosto_en.html (visited on 21 March, 2002)

² Ibid.

³ Ibid. [://www.stat.fi/tk/yr/tietoyhteiskunta/ulkomaankauppa_en.html](http://www.stat.fi/tk/yr/tietoyhteiskunta/ulkomaankauppa_en.html); National Board of Customs, ULTIKA (visited on 21 March, 2002)

Similar success statistics are present in the business environment. In 2000, 77% of the smallest businesses reported that they used the Internet, 84% of all enterprises with more than five employees said that they used the Internet.⁴ All enterprises in the largest size category used the Internet. 95% of business service enterprises used the Internet, while only 75% of construction enterprises used it.

This high level of statistics is leading to a solid electronic commerce environment. 12% of all enterprises with more than five employees reported that their homepages contained a service through which products could be ordered.⁵ This facility was most frequently offered in the industry group of transport, where it is offered by one fifth of enterprises. Construction companies offer it least frequently on their homepages, with only one enterprise in a hundred doing so. The frequency in other industry groups fluctuates between 12 and 17%. The larger the enterprise, the more likely it is to offer such a service.

Those enterprises that did report sales through their homepages were also asked to estimate the proportions of their Internet sales from different customer groups and countries. The largest customer group was other enterprises, which accounted for approximately two thirds of the total value of sales via the Internet. Households accounted for 29 percent of the total sales.

Main ICT Regulatory and Legal Developments

Prime Minister Lipponen's Second Government Project Portfolio explains the Finnish strategy on Information Society. One of the chapters deals with the Information society and contains three project entities: the promotion of content production, the promotion of e-commerce, and the development of e-government (electronic communication within administration and public-sector service processes). This chapter is derived mainly from the report "Finland as an Information Society," which was published by the Ministry of Finance.⁶

Through legislation, Finland has instituted reforms that directly or indirectly affect Information Society issues. The reforms primarily concern electronic commerce and electronic communication with the authorities and service providers. Amendments of the Personal Data File Act and openness legislation also support the development of the Information Society. These are the main pieces of legislation making Norway's ICT legal framework.

- The Personal Data Act (EU Directive 95/46/EC) was implemented by the Personal Data File Act (523/99) on June 1, 1999.
- The EC Data Protection Directive was implemented by the Legislation on openness and secrecy (621-699/1999 and 1030/1999) on December 12, 1999.
- The EU directive on the electronic signature was implemented by the Act on Electronic Service in the Administration (1318/1999) on January 1, 2000.

⁴ Ibid., http://www.stat.fi/tk/yr/tietoyhteiskunta/internet_en.html, (visited on 21 March, 2002)

⁵ Ibid, http://www.stat.fi/tk/yr/tietoyhteiskunta/ikauppa_en.html, (visited on 21 March, 2002)

⁶ Finland as an Information Society, The Report of the Information Society Advisory Board to the Government, Ministry of Finance, Helsinki, 2000. http://www.vn.fi/vm/english/public_management/information_society.pdf (visited on 21 March, 2002)

- The Communications Markets Act, which harmonises the regulation of digital telecommunication networks (EU-Commission Communication- The 1999 Communications Review, COM 1999/539), will be implemented by future legislation.

Third generation mobile licenses

Finland is also leading the way in the area of third general mobile licenses. On 15 December 1998, Finland became the first country in the world to commence the application process for third generation mobile networks.⁷ During the application phase, licences were not tied to any of the competing third generation mobile network standards. By the deadline, the Ministry of Transport and Communications had received 15 licence applications. Finland granted four national licences on 18 March 1999. The licences are free of charge and the issuance is not based on the highest bid.

E-government ranks very highly on the government agenda. Through its project on electronic access to public administration implements, the government is implementing the Policy Decision of the Council of State of 5 February 1998 on electronic communication, the development of services and decrease in the collection of information. The project aims to improve the availability, quality and customer orientation of the services of public administration as well as the administration's service capabilities and efficiency. The success of these initiatives can be measured in terms of implementation.

In 1999, the government implemented the points of the Council of State Policy Decision on electronic communication dealing with infrastructure and legislation. The Act on Electronic Service in the Administration (1318/1999) entered into force at the beginning of the year 2000. The Act makes it possible to initiate, handle and serve notice on administrative issues electronically and gives an electronic signature the same legal effects in administration as those of a traditional signature. The Act contains provisions on the rights, duties and responsibilities of the authority and administration in electronic communication.

The electronic identity card for the citizen was introduced by the Identity Card Act (829/1999), which entered into force in December 1999. The introduction of the electronic identity card also involved enacting an amendment concerning certification services (Population Information Act 527/1999). The Population Register Centre started providing certification services in December 1999. The electronic identity card can be used for communication with the authorities and also for some services in private-sector electronic commerce.

E-government, nevertheless, will not have any success without increased general ICT access. Nearly all administrative fields have been and are still making preparations for measures to develop electronic communication services. According to an inquiry conducted by the Ministry of Finance, 90% of all offices and agencies use an Internet service. A total of 63 offices offer their own forms on the Internet and 26 offices have an interactive communication service on the Internet.

The Citizen Handbook and the Citizen Network Form Service are joint services making it easier to find services and forms. The TYVI system (*Tietovirrat yrityksiltä viranomaisille* [Data flows from enterprises to the authorities]) is intended to decrease the managerial costs of enterprises. Enterprises can use it to notify the authorities of their taxation information, statistical information and work pension information.

⁷ http://www.mintc.fi/www/sivut/english/tele/telecommunications/statistics/e_katsaus.htm, (visited on 21 March, 2002)

According to a Ministry of Finance inquiry published in March 2000, 36 offices are conducting or planning development projects related to electronic services. The projects are designed to improve customer service, inter-authority contacts and electronic commerce.

One of the most extensive individual development projects is the *Macro Pilot Project* of the Ministry of Social Affairs and Health. The project's objective is to develop the service system of social and health care into a seamless and efficient service entity, so that the citizen does not have to interact with multiple organisations. The Pilot Project also tests the customer card (the service card of KELA, the Social Insurance Institution) and supports the service chain of social and health care and the improvement of data security. The reference database helps locate the operating unit of social and health care.

Electronic communications development plans have been or are being drafted in the Ministry of the Interior, the Ministry of Transport and Communications, the Ministry of Agriculture and Forestry, the Ministry of Employment, the Ministry of the Environment, Foreign Affairs Administration, the National Board of Forestry, the State Treasury, the National Board of Taxes, the Vehicle Administration and the Immigration Office and the Ministry of Trade and Industry.

Fostering e-commerce is also a priority for the Finnish government. The electronic commerce project of the Ministry of Transport and Communications aims to use public sector resources to promote electronic communication business activities in the networks and the introduction of new technologies. Measures are directed at developing the communication infrastructure and increasing the trust of users and actors. The development of electronic commerce in the field of the Ministry of Transport and Communications includes the regulation of electronic commerce activities as well as research and development activities. Regulatory initiatives in the Communications Management Department promote the use of new technologies and the trust of the users as well as the regulation of physical distribution channels. The purposed of development projects and programmes is to promote electronic commerce.

The Electronic Commerce Project contains six different subprojects, three of which concern regulation and three of which concern development. In addition, a project entity supporting the regulatory and development projects (support projects) will be launched. It will focus on research and accounts to support the regulation and development projects, promoting not only electronic commerce but also the development of the Information Society and communication society. There are also several e-commerce development projects.

The NetMate Project has been functioning since 1998. Its aim is to promote electronic commerce in SMEs as well as the networking of enterprises. The project's personnel have been co-operating with the Technology Development Centre TEKES, the Chamber of Commerce organisation and the Regional Employment and Economic Development Centres. The NetMate Project will end this year, but the operating models and the networks it has produced will be utilised in new development projects. The "Improving the prerequisites of digital service production" project aims to promote electronic commerce with a multi-annual programme concentrating on extensive promotion of content and service production. One project goal is to map the bottlenecks of digital service production from the point-of-view of new media and new technologies covering all the new technologies. A separate subproject involves evaluation of the development of physical distribution in electronic commerce and logistics.

The services of the Information Society are distributed to different user groups unevenly and at different times. The goals of the "Usability of the services of the Information Society" project are to study and evaluate the readiness of different population groups to use the services of the Information Society, to identify obstacles of this usability, and to create new models to support and encourage people in the use

of network services. The project also seeks to increase demand for the services of the Information Society by increasing the trust of consumers in electronic communications and by promoting the creation of standardised and easy-to-use products.

Assessment of Phenomena Undermining Dependability

Finland has not compiled statistics on cyber-crime⁸

Government Initiatives Aimed at Tackling Cyber-Security

An agency under the Ministry of Transport and Communications, FICORA is a general administrative authority for issues concerning electronic communications and information society services. Its mission is to promote the development of the information society in Finland. It safeguards the functionality and efficiency of the communications markets to ensure that consumers have access to competitive, technically advanced, and affordable communications services.

FICORA issues technical regulations and co-ordinates standardisation work at the national level. It also supervises the technical functioning and security of communications networks. Supervision of the communications markets promotes healthy competition and compliance of operators with the statutory requirements concerning pricing and operation.

FICORA has duties concerning protection of privacy and data security in electronic communications and is involved in communications security work. The aim of the communication security work is to ensure reliable telecommunications security that promotes the supply of content and services via network communications for the benefit of the information society.

In the interest of security, FICORA issues technical regulations and guidelines on telecommunications operations and on the arrangement of telecommunications terminal equipment, networks and services.⁹ FICORA also supervises data protection and information security in the operations of telecommunications operators that provide public services. FICORA checks the operators for compliance with the national Telecommunications Market Act (396/1997), the Act on the Protection of Privacy and Data Security in Telecommunications (565/1999), and provisions and regulations issued under these Acts. It monitors the telecommunications networks for compliance with the relevant technical regulations and standards. FICORA fulfils its supervisory mission by compiling information about the operators, drawing up specific reports and carrying out inspections.

FICORA makes sure that the telecommunications operators are prepared for emergencies and that they inform telecommunications users on information security risks and prevention. FICORA also draws up guidelines on the arrangement of communications security, such as secure electronic services and reliable certification service operation. FICORA provides information on information security risks with the goal of enhancing the use of encryption methods.

In addition to the activities of FICORA, the Ministry of Finance, moreover, has established VAHTI, the government's IT-security board, 10 years ago.¹⁰ VAHTI coordinates IT-security work within the

⁸ Special Planner Mervi Hyvärinen, Finnish National Council for Crime Prevention

⁹ <http://www.ficora.fi/englanti/tietoturva/tietoliikenne.htm>, (visited on 21 March, 2002)

¹⁰ IT Co-ordination and Public Management Reform - A comparison between Finland and Norway, Pål Sorgaard, Ministry of Finance, 2000.

government. The board consists of members from ministries and agencies, and a number of permanent experts. The board produces a series of publications with recommendations and guidelines.

In terms of handling cyber-crime, the National Bureau of Investigation and the Security Police has the full mandate.¹¹ The National Bureau of Investigation combats international, organised, professional, and other serious crime. It also carries out investigations and improves crime prevention, criminal investigation methods and police information systems. The Security Police is responsible for preventing crimes that are likely to endanger the established governmental and social order or the internal and external security of the State. It also investigates these types of crimes. The Security Police provides authorities and other bodies with information essential to the maintenance of State security and carries out technical security checks.¹²

Finland is also devising a strong early warning and information sharing network. FICORA established CERT-FI, a team responsible for detecting and preventing security incidents.¹³ In its activities, it seeks to promote the overall CERT principles and to promote security in the information society. CERT-FI cooperates with national and international organisations and with business and industry within the field. FICORA also co-ordinates the national CERT working group, a joint group for organisations in the field of computer emergencies. The working group also monitors and promotes general development and knowledge in the field. CERT-FI continuously follows up the current national and international events in security, information system's security problems, security incidents and responses.

Public-Private Partnerships

The Finnish Information Society Development Centre, (TIEKE) is the meeting point for public and private information society developers in Finland.¹⁴ As a neutral and non-profit organisation, it brings members together to develop tools and expertise for use in the information society. Its constituency consists of more than one hundred organisations and companies. Members represent business enterprises that develop, manufacture, market, and support ICT products and services, as well as companies and organisations that deploy ICT in their operations. Several ministries and public agencies, some of them directly involved in the promotion of information society development, are members of TIEKE. It focuses on the development of networking and interoperability. The so-called ICT-cluster offers areas of services for the network partners. One of those areas is special services for quality and security.

Research and Development

The first Information Strategy of Education and Research, completed in 1995, created the guidelines of the information and communication policy for education and research until the turn of the millennium. The strategy contained proposals on improving the education and research through data technology, improving national competitiveness and employment, and increasing opportunities for citizens to acquire

<http://www.vn.fi/vm/julkaisut/tutkimukset/jaselvitykset/pdf/rr42000.pdf>, (visited on 21 March, 2002)

¹¹ Decision-in-principle of the Council of Ministers on Development of the Government Administration's Information Management, Ministry of Finance, Helsinki, March 2000 (visited on 21 March, 2002)

¹² <http://www.poliisi.fi/english/index.htm> (visited on 21 March, 2002)

¹³ <http://www.ficora.fi/englanti/tietoturva/certfi.htm>, (visited on 21 March, 2002)

¹⁴ <http://www.tieke.fi>, (visited on 21 March, 2002)

and use information. The strategy also called for measures to safeguard the capacity of high-capacity calculation, to improve the prerequisites of the production and use of network-based multimedia as well as to develop the data networks of education and research.

The Information Society Programme of the Ministry of Education (1995–1999) implemented this strategy, with specially earmarked funds of nearly 168 million EUROS. The majority of these funds were allocated to the acquisition of equipment and the construction of networks in different educational institutions, universities, libraries, archives and museums. Funds were also allocated for the purpose of strengthening education and research related to the information society by increasing the number of study places and the number of teachers and research workers.

The strategy document drafted in 1999 contains guidelines on the educational and research goals for developing the Information Society in the years 2000–2004.

The strategy presents the following vision:

By the year 2004 Finland will be among the top countries in the world as a knowledge-based interactive society. The success will be based on equal opportunities for citizens to study and develop their own skills and to use the data reserves and educational services extensively. The operating method of network-based education and research, which is of a high quality and ethically and economically sustainable, will be established.¹⁵

¹⁵ Ministry of Education, Education, Training and Research in the Information Society – A national strategy for 2000-2004, Helsinki, 1999 <http://www.minedu.fi/julkaisut/information/englishU/index.html>, (visited on 21 March, 2002)