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> " The exceptionally well educated workforce and national dependence on IT, particularly communications technologies, have created a virtuous cycle of ICT development in Finland."
>
> ***—Finnish software developer***

> " Rare use of authentication techniques has hurt e-commerce. The techniques exist, but are not widely used in Finland."
>
> ***—Finnish communications manager***

Finland, whose economy was traditionally based on heavy industry and forestry, has become a leader in the Networked World in recent years, ranking third overall in the Networked Readiness Index. Finland's strength in economic competitiveness (as reflected in its number one ranking in this year's Global Competitiveness Index) is deeply intertwined with the nation's success in deploying and using information and communication technologies.

Finland's strengths are evident in its extremely well developed information infrastructure, high-quality workforce, effective policy environment, and sophisticated use of ICTs. The Finnish ICT industry is so large and globally influential that Finland's high-technology exports exceed imports, a unique phenomenon for an OECD country.

Although Finland's commercial ICT success is often connected to the rise of telecommunications equipment manufacturer Nokia, it can also be traced to long-term, intense investment in national information infrastructure (Ranking in Information Infrastructure micro-index: 1), and in ICT-oriented public education programs. As a country that once was home to hundreds of telephone companies in the 1920s, Finland has a history of building out information infrastructure to connect its geographically dispersed population. The modern telecommunications industry has been progressively deregulated since 1985, and the resulting competition has spawned some of the lowest network operating costs in the world (Ranking in Effect of Telecommunications Competition: 1). There are robust broadband, mobile, and digital backbone networks throughout the country (Ranking in Availability of Broadband: 1).

In addition to a high penetration of Internet access in households and workplaces, Finland has a well developed infrastructure for public access to the Internet (PIAP) via libraries and other public places (Ranking in Public Access to the Internet: 2). Between 1995 and 1999, the government provided almost US$250,000 per year per village for rural areas to subsidize ICT equipment and personnel.[1] When considered together with regional programs such as *Tietotupa* (information huts), which provide communal access to the Internet and other technologies, an expansive system of access is evident throughout Finland.[2] The government has stressed the importance of its *Information Strategy for Education and Research 2000–2004*, created to provide ICT access and literacy training for those in need, with priority given to the poor and minority groups.[3]

All Finnish schools are connected to the Internet (Ranking in Internet Access in Schools: 1). These networked schools offer online administrative functions such as course enrollment and grading as well as online classes and tutorials at the high school and university levels. Computer facilities for games and learning are even provided in public daycare and preschool facilities.

Finland is also a leader in e-commerce (Ranking in e-Commerce micro-index: 2). The financial services industry implemented advanced payment, security, and verification internal IT systems in the early 1990s, enabling Finnish banks to be among the first in the world to offer online and mobile banking. Though Finnish consumers have been slower to adopt e-commerce for business and retail, evidence of the nation's ICT sophistication can be found in car washes and soda machines paid via mobile phone. Online services are now used widely, and banking and information transfer remain the largest segments of e-commerce for both businesses and consumers.

Finland

Key Facts

Population	5,176,000
Rural population (% of total population) 1999	33.28 %
GDP per capita (PPP)	US$24,864
Global Competitiveness Index Ranking, 2001–2002	1
UNDP Human Development Index Ranking, 2001 (adjusted to GITR sample)	10
Main telephone lines per 100 inhabitants	54.69
Telephone faults per 100 main telephone lines	8.40
Internet hosts per 10,000 inhabitants	1022.53
Personal computers per 100 inhabitants	39.61
Piracy rate	29.00 %
Percent of PCs connected to Internet	25.82 %
Internet users per host	3.64
Internet users per 100 inhabitants	37.23
Cell phone subscribers per 100 inhabitants	72.64
Average monthly cost for 20 hours of Internet access	US$7.26

	RANK
Networked Readiness Index	**3**
Network Use component index	**3**
Enabling Factors component index	**1**
Network Access	**2**
Information Infrastructure	1
Hardware, Software, and Support	3
Network Policy	**2**
Business and Economic Environment	2
ICT Policy	1
Networked Society	**1**
Networked Learning	1
ICT Opportunities	2
Social Capital	1
Networked Economy	**3**
e-Commerce	2
e-Government	2
General Infrastructure	6