

INTRODUCTION

The Finnish Information Society in a Global Context

We are living in a time characterized by the rise of the information society in its diverse reality. The foundation of this society is informationalism, which means that the defining activities in all realms of human practice are based on information technology, organized (globally) in information networks, and centered around information (symbol) processing.¹ Thus, the core of the informational economy is the information-technology based global network of financial markets, where investors constantly shift their capital between securities

¹ The theory was first presented by Manuel Castells in his trilogy *The Information Age: Economy, Society, and Culture* (1st edn, 1996; 2nd edn, 2000a) and, in a more formalized version, in “Materials for an Exploratory Theory of the Network Society” (2000b). An extensive theoretical and empirical justification of the theory is given in these works. For the concept of informationalism, see also Castells’s “Informationalism and the Network Society” in Himanen (2001).

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with the help of computer models able to analyze information at high speed in real time. Companies maximize their productivity, market value, and ultimately profits by organizing themselves as networks, by applying information technology and by creating products that are increasingly based on information (symbol) processing. These networks are built around business projects, and are usually formed by components belonging to different firms. Thus, networking transforms the internal organization of the firm, its relationship to consumers and suppliers, and its partnerships with other firms. The resulting organizational form is what we conceptualize as the “network enterprise.” In this new system of production and management, the labor force operates in the network enterprise as a constantly transforming network of decision-making and task implementation. Thus, jobs require not only the capacity to use information technology and process information, but also the ability to learn: labor with self-programming capability is at the source of productivity and competitiveness. It follows from this that the production of self-programmable, high-quality labor in a given society is the most important factor of production to win a competitive advantage in the informational economy.

The rise of the “network society” (using the term under which we conceptualize what the media describe as the “information society”) is associated in the business world with the development of the “new economy”, which dominated the minds and investment portfolios of the late 1990s. Its icons are Silicon Valley and, to some extent, the emerging Asian economies, especially Singapore (largely because it is often thought to be the model that China would like to follow). But there are other processes of structural transformation toward informationalism that offer a sharp contrast in terms of institutional foundations and social consequences, while reaching similar results in terms of technological innovation, productivity growth, and economic competitiveness. Our argument is that the information society can exist, and indeed does exist, in a plurality of social and cultural models, in the same way that the industrial society developed in very different, and even antagonistic, models of modernity, for instance in the United States and the Soviet Union, as well as in Scandinavia or Japan.

As was the case with the industrial society, the information society does have some common structural features around the world: it is

based on knowledge generation and information processing, with the help of micro-electronics based information technologies; it is organized in networks; and its core activities are networked on a global scale, working as a unit in real time thanks to the infrastructure of telecommunications and transportation. This socio-technical structure develops and expands on the basis of its superior performing capacity, by phasing out through competition the organizational forms from the industrial era that are based on vertical, less flexible forms of management and implementation, less able to globalize their operating models. Thus, in a sense, all societies evolve toward adopting the features characteristic of the information society, even if in most of the world this transformation affects only the dominant functions and processes that are connected to the global networks of wealth creation and information processing.

At the same time, however, what we observe is that the paths and outcomes of this transformation are extraordinarily diverse. To be sure, countries around the world become informational at different speeds and in sharply divergent degrees, according to their level of development. But there is something else: societies and economies can reach very similar levels of techno-organizational informationalism starting from different histories and cultures, using a variety of institutions, and reaching distinct forms of social organization. In sharp contrast with the one-dimensional views of many futurologists, the world is not about to be made of Silicon Valleys, or would-be Silicon Valleys. There is a common information technology, and a global economy, but in the midst of human diversity. There is no one model of information society, ultimately represented by the United States and California, that serves as the standard of modernity for the rest of the world. The significance of the Information Age is, precisely, that it is a global, diverse, multicultural reality.

Within this framework of analysis, our interest in Finland as an information society stems from three basic concerns. The first is to investigate the process by which Finland emerged as one of the most competitive economies and most technologically developed information societies in the world, while displaying social and institutional features that stand in clear contrast to the Silicon Valley model or, for that matter, the Asian experience. Second, because of the importance

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of the welfare state in Finland, we are interested in understanding its role in the development of the information society. Since the new economy is often associated in expert circles around the world with liberalization and disengagement from the public sector in society, we would like to answer the following question: is the welfare state a contributing force to the full development of informationalism? Or, rather, are we misled by an optical illusion, as the industrial society fades away slowly with the old system still in place, and while the information society emerges, but not yet fully fledged, from the dynamics of entrepreneurial networks in a liberalized and privatized institutional context? Research, not ideology, should be able to provide tentative answers to these fundamental questions, at the roots of public policy and business strategy. Last, but not least, the relationship between globalization and national identity is complex and often contradictory. The inability of global networks of information and wealth to respect the values of historically rooted identities has created a great deal of instability in the world, as the feeling of meaninglessness triggers potentially fundamentalist reactions. Yet, Finland displays, at the same time, a dynamic integration in the global economy, fully fledged membership of the European institutions, and a strong affirmation of its culture, unique language, and national identity. Indeed, we propose the hypothesis that it is this identity, which provides a key foundation for political legitimacy, that enables the role of the state in the building of the information society.

Let us present this argument – about the socially distinct, yet technologically and economically equally dynamic, Finnish model of the information society – in more empirical terms. International studies show that Finland is, on the technological-economic dimension, as advanced as Silicon Valley or Singapore. For example, when compared using the criteria of the UN Technology Achievement Index, these three models are as shown in Fig. 1.1. (See also the larger comparative Table 1.1.)

Compared by competitiveness – a measure of economic dynamism – the United States, Singapore, and Finland rank as the three most dynamic economies in the world, according to the International Institute for Management Development (IMD), the leading competitiveness analyst (Fig. 1.2).

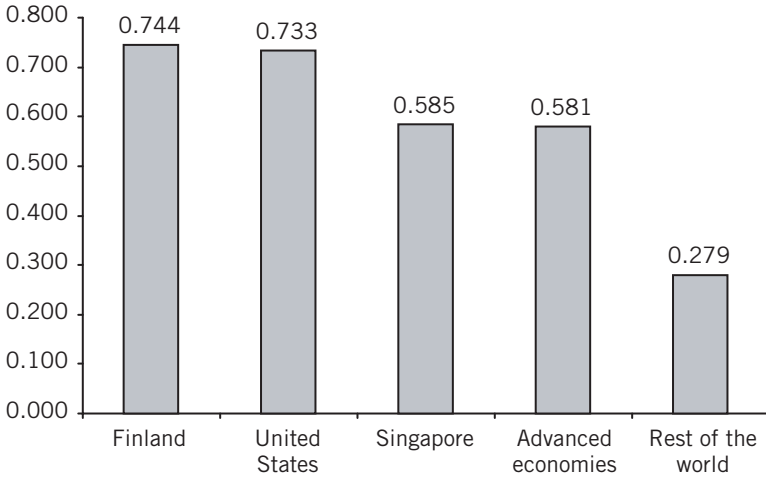


Fig. 1.1 Technological development measured by the UN technology achievement index

Notes: The index is based on four components: creation of technology (the number of patents granted per capita, the receipts of royalty and license fees from abroad per capita), diffusion of recent innovations (the diffusion of the Internet, exports of high- and medium-technology products as a share of all exports), diffusion of old innovations (telephones, electricity), and human skills (mean years of schooling, gross enrolment ratio of tertiary students enrolled in science, mathematics, and engineering).

By “advanced economies” we mean largely the same as the International Monetary Fund (IMF); that is, the Western economies (United States, Canada, Australia, New Zealand, Israel, United Kingdom, Ireland, Germany, France, Austria, Switzerland, Italy, Spain, Portugal, Greece, Norway, Denmark, Sweden, Finland) and the strongest Asian economies (Japan, Korea, Singapore – Hong Kong and Taiwan are not included here because they are not counted independently in all statistics). The aggregate figures have been calculated based on the UNDP (2001) as unweighted averages of the countries for which the technology achievement indices have been available (43 countries for the “rest of the world”). Here, as throughout the book, we have excluded from comparison countries with less than one million inhabitants, following the United Nations Population Fund statistical custom.

Source: UNDP (2001).

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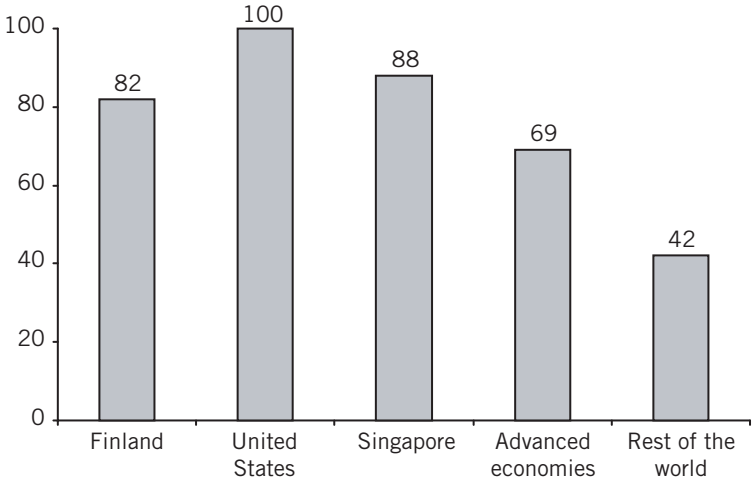


Fig. 1.2 Economic development measured by the IMD competitiveness index

Notes: The IMD's competitiveness figures are based on such economic criteria as GDP per capita, stock market capitalization, and productivity, as well as on a number of social criteria. Here the figure for the "rest of the world" represents a sample of 20 countries for which the data are available. These countries do not include any of the least developed economies in the world, so the figure represents rather the competitiveness of the most dynamic transitional/developing economies.

Source: IMD (2001).

The difference between the Finnish, Silicon Valley, and Singapore models becomes clear on the social level. The global trend is for the informational economy to connect to its network those who are valuable to it (and to add further value to them) but to disconnect those who are valueless (and thus further weaken their chance of acquiring any value). This results in increasing social injustice in the form of income inequality, polarization, and poverty. Using the ratio between the income of the richest 20 percent and the poorest 20 percent as a measure of social injustice, our areas are compared in Fig. 1.3.

In its extreme form, social injustice leads to social exclusion. Those individuals who are least valuable to the networks of informational

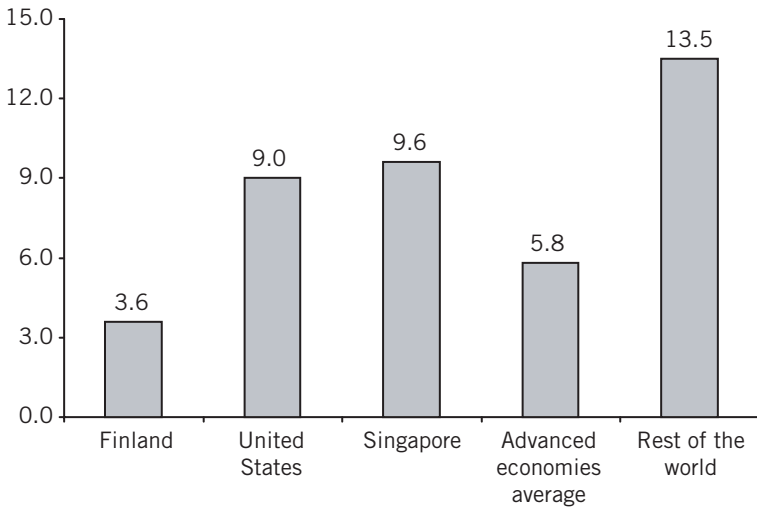


Fig. 1.3 Social injustice measured by the ratio of the richest 20 percent to the poorest 20 percent

Notes: Naturally, the higher the figure, the more unequal the country. The aggregate figures have been calculated as unweighted averages of the countries for which figures are available.

Sources: UNDP (2001), except for Singapore (UNDP, 1999) and New Zealand (UNDP, 2000).

capital – for example, because of educational, health, or social reasons – are left on their own, in a position from which it is very difficult for them to change their fate. The most violent way of survival is then to connect to the networks of global crime. Using functional illiteracy as a measure of the exclusion threat, our areas are shown in Fig. 1.4.

The difference in social injustice and exclusion between varying information society models can be seen especially well when we look at them through a longer time perspective. In the United States, the shift from an industrial to an information society, beginning in the 1970s, meant a reverse of the post-war trend. As can be seen in Fig. 1.5, until the 1970s social inequality was decreasing (measured by the Gini index) and exclusion was at a relatively low and stable level (measured by the incarceration rate). In the 1970s, both of these trends

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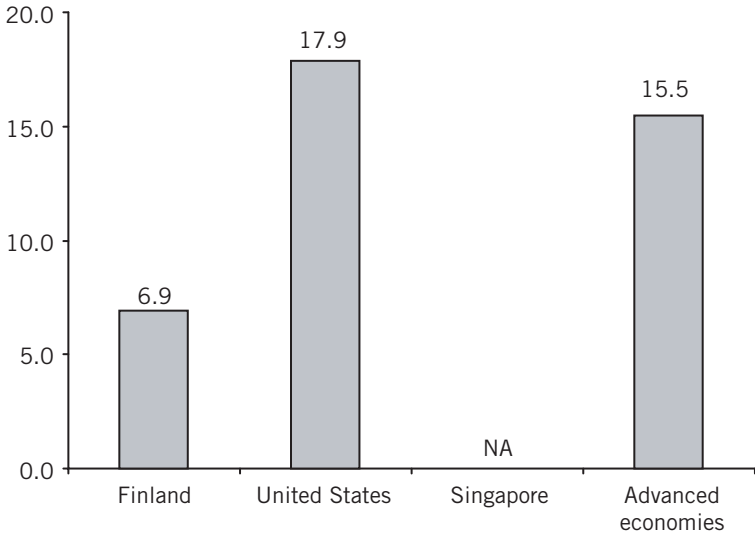


Fig. 1.4 Social exclusion measured by functional illiteracy

Notes: Functional illiteracy refers to, at most, Level 1 reading proficiency on the OECD PISA (Program for International Student Assessment) scale. The aggregate figures have been calculated as unweighted averages of the countries for which the figures are available.

Source: OECD (2001c).

turned to a rapid increase. In contrast, Finland's shift to the information society has been combined with a continued fall in, or, at least, a continued low level of social injustice and exclusion.

The rise of the network society has also generated a situation in which dominant values threaten other identities. There is a widespread feeling that the logic of the global networks of informational capitalism is not connected to cultural identity. This broken link between the predominant mode of development and specific identities questions the legitimacy of the development and creates resistance identities. At present, the information society is being challenged by social conflicts, ideological critiques, and resistance identities. By contrast, Finland is a country that stands out not only when we look at technological-economic development but especially when we

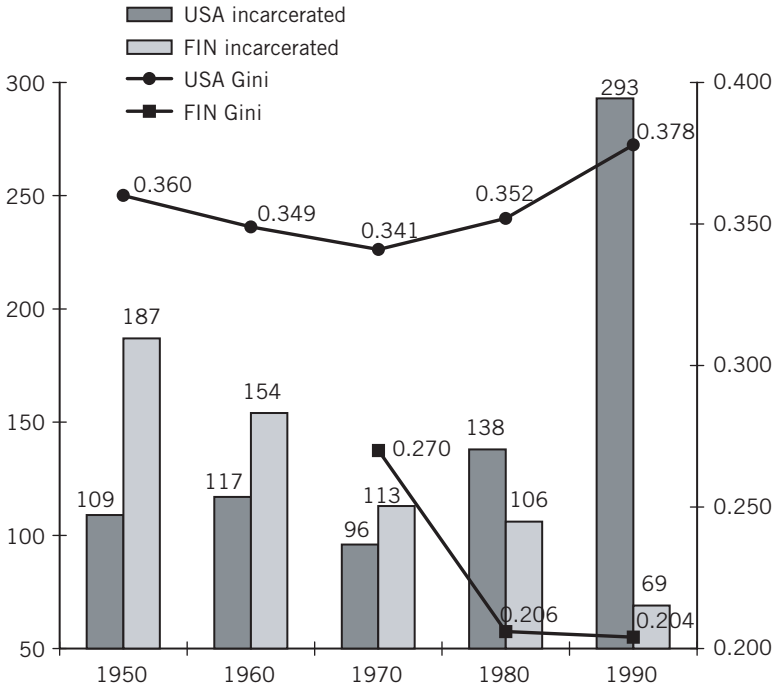


Fig. 1.5 Social injustice and exclusion in the shift from an industrial to a network society in the United States and Finland, 1950–90

Notes: In the Gini index, the value 1 means absolute inequality, in which one person gets everything and all others nothing, and the value 0 means absolute equality, in which everyone gets exactly the same. The above figure is primarily meant to show the trends of income inequality and incarceration. The figures for the United States are based on household gross income and the figures for Finland are based on per capita net income. However, because of the low level of income transfers, the United States gross and net income inequality figures are quite close to each other.

Sources: Gini figures are based on Deininger and Squire (1996). Incarceration figures for the United States are based on Cahalan (1986) and US Bureau of Justice Statistics (1992), and for Finland on von Hofer (1997).

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consider social justice and legitimizing identity. The most interesting questions about Finland – which have much wider significance than for this one country alone – are then: “How does Finland combine the information society with the welfare state?” and, “What is the relation of Finnish identity to development?” What makes Finland internationally interesting is the fact that the Finnish model shows that technological and economic dynamism may be combined with the welfare state and legitimizing identity. In other words, the network society does not necessarily destabilize social order.

The purpose of our book is analytical, not normative. So it is worth stating explicitly that, by the expression “Finnish model,” we do not wish to imply that Finland is an ideal model that others should try to imitate. Finland also has major problems, which we will discuss. In fact, what the real-life example of the Finnish model really does is precisely to reject the notion that there can be one model – earlier thought to be Silicon Valley – that information societies should follow. So, the political and policy lessons from our analytical work is not that Finland provides a better path to a more humane information society. Rather, the argument is that the model of an information society that every society builds, or that every individual or business firm contributes to, depends on the values that people, firms, and governments put forward. Within the same techno-economic paradigm (informationalism) there is considerable room for political choice based on values. And we will have to articulate sustainable values for the transformation of society and the economy, otherwise the contradictions of the social transition will trigger social explosions and violent opposition from a diversity of quarters. This is the message of our book, though we restrain ourselves from putting forward these values.

The Finnish Model

There are several studies of the Silicon Valley and Singapore models,² but the Finnish model is known much more vaguely, often only on the level, to use the expression of the *Wired* cover story of 1999, that in

² For example, cf. Saxenian (1994, 1999) and Lee *et al.* (2000) for Silicon Valley and Castells *et al.* (1990) for Singapore.

Finland “the 21st century is in beta.” It is therefore useful to briefly present some key facts about the Finnish case before moving to a more detailed analysis of its elements.

Finland’s fame for being one of the most technologically advanced countries finds support from sources other than the UN Technology Achievement Index. Finland has held one of the top spots on the International Data Corporation’s (IDC) Information Society Index since it was introduced in 1996.³ Behind this index are facts such as, since the beginning of the 1990s Finland has led the field in Internet statistics, along with the United States, by the number of hosts per capita and the number of Internet users as a share of the population. For the same time period, Finland has also had the highest penetration rate of mobile phones (in 2001 about 80 percent of Finns had their own mobile phone). The most famous names in this strong technological development are Nokia, the world’s biggest mobile telecommunications company (in 1999 Nokia became for a time the most valuable European company and the ninth most valuable in the world in terms of market capitalization), and Linux, the open-source operating system created by the Finn Linus Torvalds, which is considered to be the biggest challenger to the hegemony of Microsoft’s operating system (Linux is already the leading web-server operating system).

By all the traditional criteria, the Finnish economy was very dynamic during the years 1996–2000, which is the latest for which data is available at the time of our writing. The annual growth of the Finnish GDP of 5.1 percent in this period was faster than that of the United States (4.3 percent), Japan (1.3 percent), and the average for the European Union (EU) (2.6 percent). This growth was driven by the information-technology (IT) cluster that includes Nokia, but is not limited to it. In the 1990s, labor productivity in the Finnish business sector grew by an annual average of 3.5 percent and in the manufacturing sector the growth was 7 percent, led by the telecommunications sector, which increased its productivity by an annual 25 percent. The value of stocks on the Helsinki Stock Exchange climbed by 894 percent in the five-year period between 1996 and the end of 2000. (It was even

³ IDC (1996–2001); UNDP (2001).

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higher in the peak year of 1999 and still remains, in the downturn of the economy, many times higher than at the beginning of this period.) As has been mentioned, in 2000 the IMD ranked Finland as the third most competitive economy in the world – the World Economic Forum (WEF) ranked it the most competitive.⁴

But the most distinctive feature of Finland is its combination of an information society and the welfare state. The Finnish welfare state includes totally free, high-quality, public education from kindergarten to the university (with one of the highest combined educational enrolment rates in the world), universal public health coverage (granted as a right based on citizenship), and a generous social system with universal retirement and unemployment insurance, which has made Finland a country with one of the smallest number of poor in the world. The welfare state is financed by high taxes, but high taxation proceeds with strong public support on the basis of the benefits most people receive from the welfare state.

In contrast to the crisis of legitimacy experienced by many governments throughout the world, which impairs their action, the Finnish state has been able to make bold policy decisions that paved the way for the new technological and economic dynamism of the 1990s. This has been achieved because the Finnish state has been seen as the bearer of Finnish identity. The non-conflictive relation between Finnish identity and the state has – in addition to the security provided by the welfare state – facilitated cooperation between the social actors involved in the restructuring process from the industrial to the informational economy.

Finnish history is an additional reason why we have chosen the Finnish model as the subject of our book. Finland can be distinguished from the other Nordic countries not only because it is now technologically and economically the most dynamic (and is the only one that is a world trendsetter in key technological fields such as mobile communications and open-source software) but also because, unlike the other Nordic countries, Finland was a relatively poor country not so long ago. Both the Finnish welfare state and the information society

⁴ WEF (2000); IMD (2001).

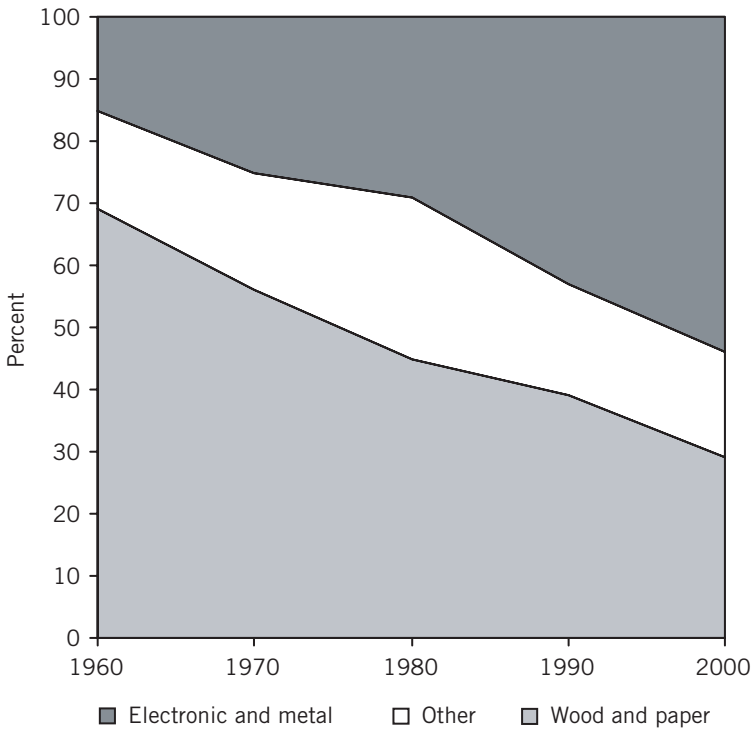


Fig. 1.6 The transformation of the Finnish economy measured by export share, 1960–2000

Source: Etna, the Research Institute of the Finnish Economy.

have been built in the past couple of decades. Figure 1.6, showing the change in the structure of Finnish exports between 1960 and 2000, reflects the transformation well.

This gives the Finnish case a development perspective that makes it interesting for less advanced economies. The last big struggles in the Finnish transformation are as recent as the economic crisis of 1990–3, which threatened both the information society and the development of the welfare state. GDP contracted by 13 percent, and the unemployment rate rose from 3.5 percent to 17 percent in 1994. But, with the help of public policies, corporate restructuring, and individual

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innovators – relying on the welfare state (including the social contract between capital and labor) and legitimizing identity – the economy was turned around. In this process, Finland joined the EU (1995) and became an informational economy fully linked to global financial markets.

This book analyzes what happened and tries to define the main features that characterize the specificity of the Finnish model – as materials for further understanding Finland and the world we live in, not as a formal analytical model. In our study, it will also become clear that the Finnish model has many problems, one of which is unemployment that has not yet come down to less than 10 percent of the labor force. However, the main conclusion of our study is that Finland has been able to combine technological innovation and economic dynamism with the welfare state and legitimizing identity. In a time of increasing stress in the model of global development, it is worthwhile for all of us to reflect on the conditions and processes underlying the emergence of a socially sustainable network society, as represented by the recent experience of Finland.

Table 1.1 A comparison of selected information society models

	Finland	United States	Singapore	Advanced economies
<i>Technology</i>				
<i>Infrastructure</i>				
1 Internet hosts (per 1000 population)	200 (1)	179 (3)	72	84
2 Mobile-phone subscriptions (per 1000 pop.)	752 (1)	401 (-3)	583	589
<i>Production</i>				
3 High-tech exports/total goods exports (%)	27	32 (4)	58 (1)	21
4 e-Commerce (secure servers per 100 000 pop.)	9.6	28.1 (1)	14.6 (5)	8.6
<i>Knowledge</i>				
5 Internet users (%)	46	49 (4)	n.a.	33
6 Science, math, and engineering tertiary students (%)	27 (1)	14	24 (3)	15
<i>Economy</i>				
<i>National</i>				
7 Competitiveness (index 0–100)	83 (3)	100 (1)	88 (2)	69
8 GDP per capita (US\$)	23 430	36 144 (3)	22 949	22 666
<i>Business</i>				
9 Productivity (manufacturing; index: 100 = USA)	99	100	n.a.	n.a.
10 Stocks valuation growth, 1996–2000 (%)	894	429	n.a.	n.a.

Innovativeness					
11 R&D investment/GDP (%)	3.1 (3)	2.6	1.9	2.0	
12 Receipts of royalties and license fees (US\$ per 1000 pop.)	126 (5)	130 (4)	26	56	
<i>Welfare</i>					
Education					
13 Primary, secondary, and tertiary enrolment (combined ratio)	103 (4)	95	75 (-1)	94	
14 Functional literacy (%)	93 (2)	82	n.a.	84	
Health					
15 Life expectancy at birth (years)	77.2	76.5 (-5)	77.1	78.0	
16 Health insurance (%)	100	82	n.a.	n.a.	
Welfare					
17 Richest 20% to poorest 20% (ratio)	3.6 (3)	9.0 (-3)	9.6 (-2)	5.8	
18 People below the poverty line (%)	3.8 (4)	14.1 (-4)	n.a.	10.6	
<i>Values</i>					
Politics					
19 Freedom of the media (index: 0-100; 0 = free)	14 (free)	15 (free)	68 (-1) (not free)	19 (free)	
20 Gender empowerment measure (0-1000, 0 = unequal)	783 (3)	738	509 (-4)	661	

Table 1.1 Continued

	Finland	United States	Singapore	Advanced economies
Civil society				
21 Association membership	1.8	1.1	n.a.	n.a.
22 Incarceration rate (per 100 000 pop.)	62 (4)	554 (-1)	255 (-2)	126
Globality				
23 Foreigners or foreign-born / population (%)	2.5	10.4	n.a.	n.a.
24 Environment: CO ₂ emissions (per capita metric tons)	10.9	20.1 (-2)	23.4 (-1)	10.4

Note: In Table 1.1, the dimensions have been chosen so that they can also be used to differentiate between various information society models. We can call a society an information society if it is strong in information technology (infrastructure, production, and knowledge). Of our selected countries, Finland, the United States, and Singapore qualify as advanced information societies. We can talk about a dynamic economy if it is internationally competitive, has productive business, and is innovative. Finland, the United States, and Singapore are all dynamic economies.

However, technology and economy are just part of the story. We can talk about an open society when it is open politically, as a civil society, and to global processes. The Western information societies differ from Singapore in being open societies, whereas Singapore's figures show it to be an authoritarian society. When we look at the welfare dimension, the United States is very much like Singapore, with sharp income inequality. The distinguishing feature of the Finnish information society, compared to both the United States and Singapore, is that it is also a generous welfare society. The difference is most clear in income distribution. In education and health, the United States and Finland have very similar aggregate figures for enrolment as an indicator of the general level of education, and for life expectancy as an indicator of the general level of health, but when the focus is on the excluded (functional illiteracy and health

insurance) the difference is clear again. Finland ranks first in the world in all of these dimensions (the figures in parentheses indicate the position within the group of the 24 advanced economies – only the top five and bottom five positions are marked).

In sum, the table shows three very different economically and technologically dynamic models of the information society:

- 1 “the Silicon Valley Model” of a market-driven, open information society;
- 2 “the Singapore Model” of an authoritarian information society; and
- 3 “the Finnish Model” of an open, welfare information society.

Of course, these terms are general labels for types that contain more than just these countries or areas, although the above areas are arguably the most representative ones for each model.

Sources: 1, 3, 6, 12, 13, 15, 18, 20, 22, 24: UNDP (2001); 2, 5, 7, 8, 11: IMD (2001); 4: Netcraft (2001), figures are for January 2001; 9: Etila (2001); 10: Nasdaq (2001) and HEX (2001); 14: OECD (2001c); 16: Health Care Financing Review (1999); 17: World Bank (2000); 19: Freedom House (2001), 21: Putnam (1995) and Siisiäinen (1999), figures are for association memberships among people with only primary education in the mid-1990s; 23: Statistics Finland (2000) and US Census Bureau (2000). Population standardizations have been calculated based on UNFPA (2000) when the original data are in absolute figures. Figures for the advanced economies are averages of those countries for which data are available.