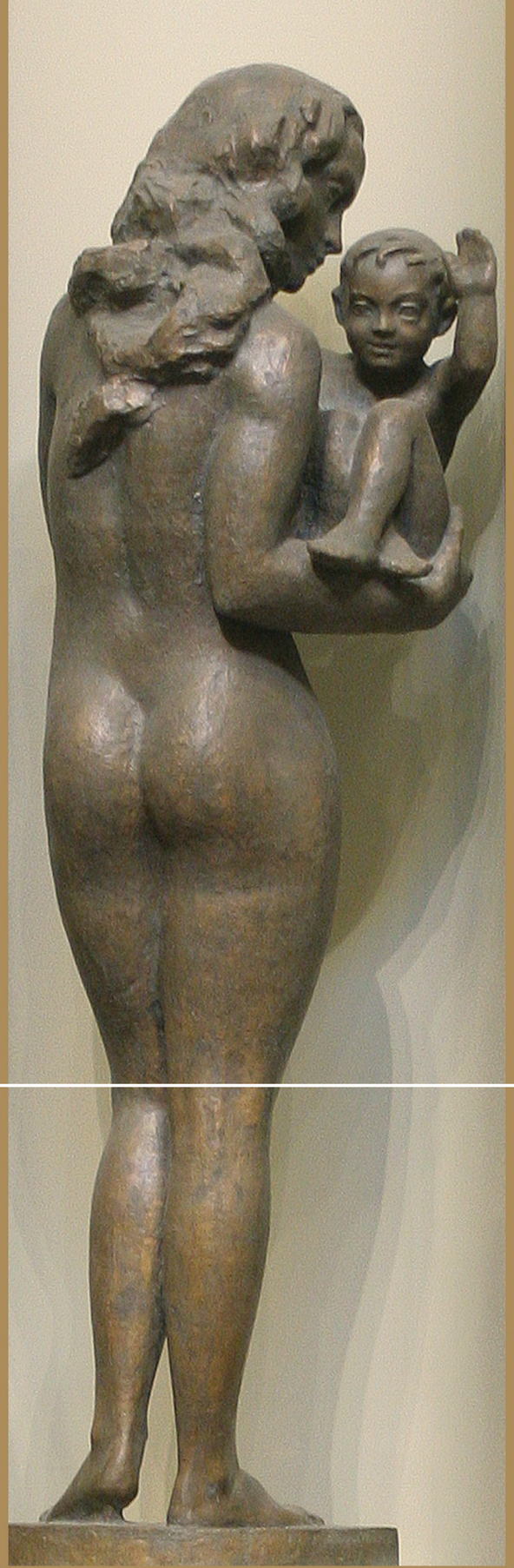
METROPOLISES, ASIA AND GENERAL CULTURE



METROPOLISES, ASIA AND GENERAL CULTURE

Publication of the Committee for the Future 6/2008

ISBN 978-951-53-3137-3 (Pbk)
ISBN 978-951-53-3138-0 (PDF)

Metropolises, Asia and General Culture

Edited by
Paula Tiihonen

Publication of the Committee for the Future 6/2008

Cover illustration: Wäinö Aaltonen, The Future, 1932/1969.
Bronze. Parliament of Finland, Assembly Chamber
Photo: Vesa Lindqvist/Parliament of Finland.

The Committee for the Future
Parliament of Finland
Phone (09) 4321
Fax (09) 432 2140
tuv@eduskunta.fi
www.eduskunta.fi

1. edition

ISBN 978-951-53-3137-3 (paperback)
ISBN 978-951-53-3138-0 (PDF)

Layout and cover: Marko Oja

Edita Prima Oy, Helsinki 2008

Foreword

The Committee for the Future is tasked with broadly monitoring indications of how the future is likely to develop. It has also tried in the course of recent parliamentary terms to make one future-related question at a time the key focus of its own work and through this hopefully also put it at the centre of the Finnish discourse on the future. During the previous term (2003-07) the Committee concentrated on the future of health. The present Committee took the view that education and learning and within this sector all-round education in particular to be a theme that needs to be addressed.

In relation to the theme, the Committee made a study and familiarisation trip to the metropolises of Tokyo, Seoul and the Pearl River Delta in October 2007. Some experiences of the trip and the thoughts that it later prompted have been compiled in this publication as background.

I personally found that one important theme that sets itself apart from the others in the ascendant metropolises of Asia and at the same time the whole world is the "ubiquitous society". The Committee's visit highlighted a belief that the next wave of innovation will be founded on the opportunities that the ubiquitous society offers. In every one of the places that we visited, some or other ubiquitous programme was ongoing, or else a related vision on which economic development is seen as being based. In Finland, we are only just becoming aware of this maturation stage of the information society. In the ubiquitous society, information and communications technology permeates the entire society. In fact, it is about time to forget the prefixes and talk only of society.

The way in which the metropolises and general education project is proceeding is that the Committee is consulting a wide range of experts and seeking illustration of the theme from at least the following perspectives:

1) What is a cultural tradition?
2) How do different parties see the changing challenge of general education?
3) What are the new demands that experts in various sectors of competence are making of culture?
4) Are the technologies that will define contacts in the future and ways of using the technologies decisively different from the present ones?

Through in-depth interviews and many forms of hearings, consultations and discussions we are trying to obtain as good as possible a knowledge base for the Committee's work going forward.

Marja Tiura
Chair of the Committee for the Future

Contents

The wealth of cities: established metropolises and emerging megapolises

Dan Steinbock

> *As it is the power of exchanging that gives occasion to the division of labour, so the extent of this division must always be limited by the extent of that power, or, in other words, by the extent of the market. When the market is very small, no person can have any encouragement to dedicate himself entirely to one employment,*
>
> Adam Smith, *The Wealth of Nations* (1776)

Historically, the great industrial cities have served as economic engines of the wealth of nations. During the past 250 years, the world economy has been dominated by the first industrializers in Western Europe, North America and Japan. The next 25 years will witness the dramatic rise of new industrial nations, especially in Asia. In both cases, large urban centers play a vital role. In the future, their scale will be of a different magnitude. It is thus instructive to explore the 'new divide' of world cities as economic and political power is shifting from the developed economies to the large emerging economies.

In the following, this shift is studied in three phases. The first section provides a brief overview of urbanization and world cities. These critical hubs of the world economy do not share single, universal and Western path of development. It also describes the leading cities of the traditional great powers (or 'G-7 economies' as they are often known), the new challengers of the large emerging economies (or 'BRIC economies'), and the late challengers of other emerging economies (or the 'Next-Eleven', N-11 economies). The section also provides a brief overview of the globalization waves, which have contributed to the rise of the large and mid-size emerging economies in the past 20-25 years. These new and large emerging cities – *megapolises* – differ from the old and established cities – *metropolises*. In the last section, the focus is on competitiveness, particularly on the role of innovation in the emerging urban regions of the large emerging economies, as well as the new urban agglomeration economies.

In the developed economies, the degree of urbanization tends to be more than 70-80%. In the large emerging economies, particularly China and India, the figure is only half that level, but the growth rates are extraordinary, even historically. The growth

engines of the world economy are large urban regions. In the past, they were in the West. In the future, the largest will be in the East.

The new divide

This section provides a brief overview of urbanization and world cities, which have multiple, local and diverse cultural paths of development.

Universal world cities?

"There are certain great cities in which a quite disproportionate part of the world's most important business is conducted," wrote Peter Hall in 1966. A half century before, these major centers of economic and political power had been christened "the world cities" (Geddes). The commanding heights were described as the logistic "urban centers of gravity" of the world-economy (Braudel). In the early 1980s, John Friedmann shifted spotlight from the leading economies to the leading world cities:

> *At the apex of this hierarchy are found a small number of massive urban regions that we shall call world cities. Tightly interconnected with each other through decision-making and finance, they constitute a worldwide system of control over production and market expansion.*[1]

In this pioneering work, examples of world-cities-in-the-making included great urban centers in Americas (New York City, Los Angeles, San Francisco, Miami, as well as Mexico City, Sao Paulo), Western Europe (London, Paris, Randstadt, Frankfurt, Zurich), North Africa (Cairo), and Asia (Bangkok, Singapore, Hong Kong). Initially, the label "global city" was used to describe the rise of headquarter economies within major urban centers located primarily in Western Europe. In the pioneering "global city" tradition, the increasing geographic dispersal of production has been associated with an equally intense impulsion toward the centralization of command and control in the major urban centers. Typically, the subtitle of Saskia Sassen's path-breaking *The Global City* was subtitled "New York, London, Tokyo."[2]

The world-city school provides a spatial perspective of an economy, which seems increasingly oblivious to national boundaries, while linking the processes of urbanization to global economic forces. The tradeoff has been the implicit assumption that all world cities will be like the current world cities, which are primarily in North America,

1 On the "world cities," see Geddes, P. (1924) A World League of Cities, Sociological Review, 26, 166-167; Hall, P.G. (1966) The World Cities (New York: McGraw-Hill); Braudel, B. (1984) The Perspective of the World (University of California Press, 1992); Friedmann, J. (1986) "The World City Hypothesis," Development and Change, 17, 69-83.

2 Sassen, S. [1991 The Global City (Princeton, NJ: Princeton University Press 2nd Edition, 2002).

Western Europe and Japan – and that these established cities provide a benchmark for the emerging cities.[3]

In reality, there is no single path of development and no single model of a world city. Globalization has not resulted in a world city system that transcends national institutions, economy, politics and culture, which, actually, generate this system of world cities. As Richard Child Hill and June Woo Kim put the matter a decade ago:

> *.. the economic base, spatial organization and social structure of the world's major cities are strongly influenced by the national development model and regional context in which each city is embedded.*[4]

It is thus vital to take a closer look at the old and new, established and emerging world cities in the context of the economies that they represent, reflect and shape.

Urbanization

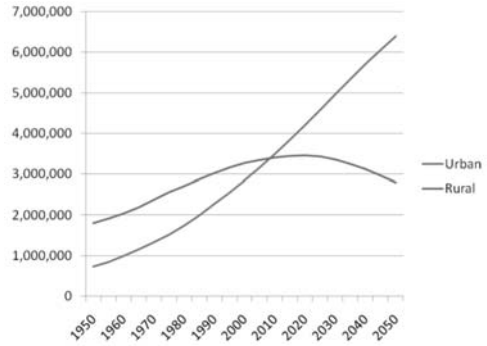
From the first cities in human history – located along the Tigris and Euphrates rivers in Mesopotamia about 4000 B.C. – to the European-created city-states after 1500 A.D., the relative number of city-dwellers was relatively low, in comparison to rural areas. Agricultural surplus gave rise to the first cities, but it was urbanization, unleashed by industrial capitalism, that prompted the dramatic expansion of cities by providing jobs in the new manufacturing centers. It was only after the Industrial Revolution around the mid-18th century that significant urbanization really took off. Only 3% of the world's population was urban in 1800, but the rate of urbanization was relatively fast. As peasants left the land to live in the new cities – first in the north of England, then in Western Europe and North America – a new urban era evolved.

It was not until the 20th century that cities emerged as dominant places of population concentration. In 1900, some 13% of the world population was urban. During the 20th century, the pace of urbanization increased dramatically. In the United States, the majority of inhabitants lived in cities by 1920. Recently – for the first time in history – the proportion of the population living in urban areas exceeded 50%. The world urban population is expected nearly to double by 2050, increasing from 3.3 billion in 2007 to 6.4 billion in 2050. Virtually all of the world's population growth will be

3 On the impact of the new divide on Finnish competitiveness, innovation and urban regions, see recent studies (released by Finland's Ministry of Interior): Steinbock, D. (2006) Finland's Innovative Capacity; (2006) The Competitiveness of Finland's Large Urban Regions; (2008) Finland's Metropolitan Advantage. Forthcoming.

4 Hill, K.C. and Kim, J.W. (2000), "Global Cities and Developmental States: New York, Tokyo and Seoul," Urban Studies, 37, pp. 2167-2195. On the world-city debate, see also Friedmann, J. (2001), "World Cities revisited: A Comment," Urban Studies, 38, 13, 2535-2536; Sassen, S. (2001), "Global Cities and Developmental States: How to Derail What Could Be an Interesting Debate," Urban Studies, 38, 13, 2537-2540; Hill, R.C. and Kim, J.W. (2001) Response to Friedmann and Sassen, Urban Studies, 38, 13, 2541-2542.

(a) Urban and rural population (mn)



(b) Urban/rural populations, by group (mn)

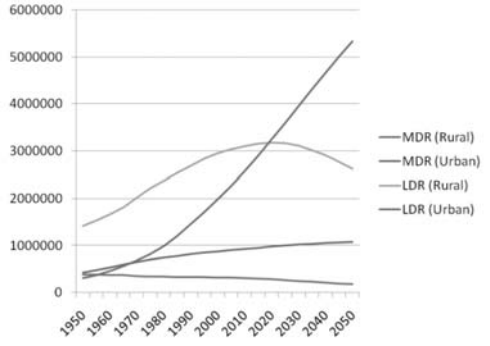


Figure 1. World urbanization (1950-2030). Source: Author (data: UN).

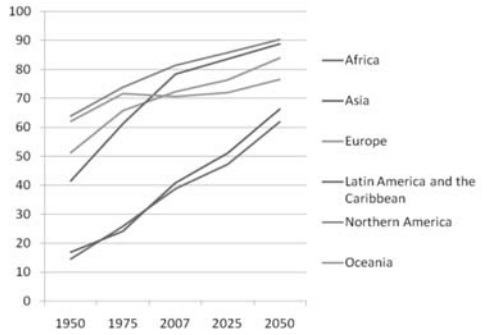


Figure 2. World urban population by major area (1950-2050). Source: Author (data: UN).

absorbed by the urban areas of the less developed regions, whose population is projected to increase from 2.4 billion in 2007 to 5.3 billion in 2050 (Figure 1). Over the coming decades, the level of urbanization is expected to increase in all major areas of the developing world, with Africa and Asia urbanizing more rapidly than the rest (Figure 2).

Advanced economies

In the aftermath of the 1973 energy crisis, Japan emerged as an industrial power. At the time, the combined gross national product (GNP) of Japan, the United States and the four key countries of the European Community (UK, West Germany, France, Italy) accounted for some 45% of the global GNP. By the mid-1980s, global competition was increasingly driven by these "Triad" powers (Figure 3):

> *This Triad is where the major markets are; it is where the competitive threat comes from; it is where new technologies will originate... To take advantage of the Triad's*

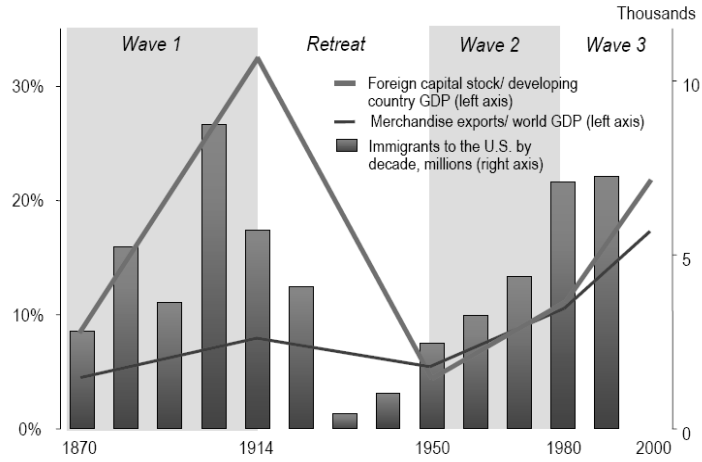


Figure 3. Three waves of globalization. Source: Author (data: World Bank).

> *markets and forthcoming technologies and to prepare for new competitors, the prime objective of every corporation must be to become a true insider in all three regions.*[5]

These half a dozen leading economies – the U.S., Japan and the key EU countries – made up the so-called G-6, the Group of Six. Augmented with Canada, they were the G-7 economies; the seven leading industrial economies.

Waves of globalization

Since the 1980s, global economic integration has drastically accelerated. Economic integration occurs through trade, migration, and capital flows. World trade can be measured relative to world income. Capital flows are proxied by the stock of foreign capital in developing countries relative to their GDP. Migration is proxied by the number of immigrants to the United States. Before 1870s none of these flows was sufficiently large to warrant the term globalization (Figure 3).[6]

For about 45 years, starting around 1870, all these flows rapidly became substantial, driven by falling transport costs. What had been many separate national economies started to integrate: the world's economies globalized. However, globalization is not an inevitable process. The first wave was reversed by a retreat into nationalism. Between 1914 and 1945 transport costs continued to fall, but trade barriers rose as countries followed beggar-thy-neighbor policies. By the end of that period, trade had collapsed back to around its 1870 level.

5 Ohmae, K. (1985) Triad Power: The Coming Shape of Global Competition, The Free Press, New York, pp. 27, and 121, respectively.

6 The depiction of globalization waves draws from Collier, P. and Dollar, D. (2002) Globalization, Growth, and Poverty (New York: World Bank).

After 1945 governments cooperated to rein in protectionism. As trade barriers came down, and transport costs continued to fall, trade revived. This second wave of globalization, which lasted until around 1980, was a return to the patterns of the first wave. Low-income countries were competing head-on with high-income countries while previously they specialized in primary commodities. During this new wave of global market integration, world trade has grown massively. The second wave of globalization was thus spectacularly successful in reducing poverty within the OECD countries. For the industrial world it is often referred to as the "golden age." That was not the case for developing countries. Although per capita income growth recovered from the inter-war slowdown, it was substantially slower than in the rich economies.

Since 1980 many developing countries – the "new globalizers"– have broken into world markets for manufactured goods and services. There has been a dramatic rise in the share of manufactures in the exports of developing countries: from about 25% in 1980 to more than 80% today. Now low-income countries were competing head-on with high-income countries while previously they specialized in primary commodities. During this new wave of global market integration, world trade has grown massively. During the third wave of globalization the share of services in rich country exports increased slightly-to 20%-but for developing countries the share almost doubled to 17%. Concurrently, the FDI flows have increased substantially.

During the past three decades, the world economy has changed substantially, due to the growth generated by the large developing countries and the collapse of the Soviet Union. In 1980, the global workforce consisted of workers in the advanced countries, parts of Africa and most of Latin America. Some 960 million persons worked in these economies. In the 1980s and 1990s, workers from China, India and the former Soviet bloc entered the global labor pool. In 2000, those countries contributed 1.47 billion workers to the global labor pool, effectively doubling the size of the world's now connected workforce (Table 1).[7]

How has the 3rd wave of globalization shaped the emerging world cities?

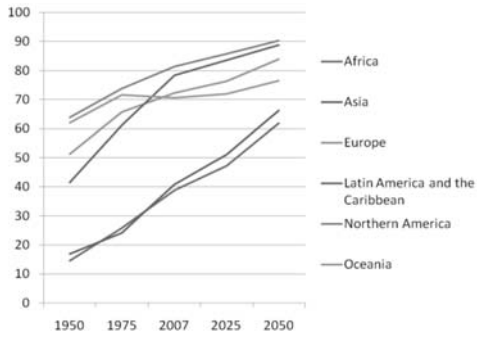
Table 1 The doubling of global workforce – economically active people (million). Source: ILO, laborsta.ilo.org/.

	World	Developed	Underdeveloped	New
In 1980	960	370	590	-
Before 2000	1,460	460	1,000	-
After 2000	2,930	460	1,000	1,470*

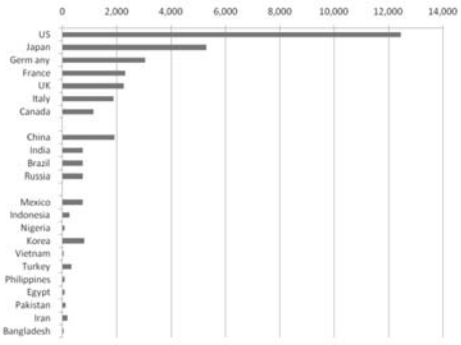
*China, 760; India, 440; former Soviet Union, 260

7 See Freeman, R. (2005) . The Great Doubling: America in the New Global Economy. Usery Lecture, April 8, 2005.

G7, BRICs, N-11, by group (2005-2050)



G7, BRICs, N-11, by countries (2005)



G7, BRICs, N-11, by countries (2050)

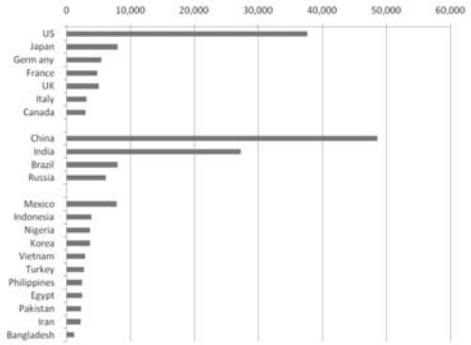


Figure 4. Leading and challenger economies: G7, BRICs and N-11 ($ GDP, Bn). Source: Author (data: Goldman Sach estimates).

New challengers

Over the next few decades, the growth generated by the large developing countries, particularly the large emerging economies or the BRICs (Brazil, Russia, India and China) is expected to become a much larger force in the world economy than it is now. By 2025 they could account for over half the size of the G6. Currently they are worth less than 15%. In less than 40 years, the BRICs economies together could be larger than the G6 in U.S. dollar terms. Only the U.S. and Japan are expected to remain among the six largest economies in U.S. dollar terms in 2050 (Figure 4).[8]

The world urban population is highly concentrated in a few countries. In 2007, three quarters of the 3.3 billion urban dwellers worldwide lived in 25 countries, whose urban populations ranged from 29 million in South Africa to 561 million in China. Only three nations – China, India and the U.S. – accounted for 35% of the world urban population.

8 Wilson, D. and Purushothaman, R. (2003), Dreaming with BRICs: The Path to 2050, Goldman Sachs, Oct 1, 2003.

In addition to the established and large emerging economies, a new generation of midsize emerging urban economies reflects the rise of late challengers.

Late challengers

Most of the 25 countries with the largest urban populations are highly urbanized, but seven have levels of urbanization ranging from 27% to just over 50% and they include some of the most populous countries in the world. Unsurprisingly, many of these new emerging economies are also giving rise to a new generation of world-city challengers. The Next Eleven (or N-11) comprise 11 countries -Bangladesh, Egypt, Indonesia, Iran, Mexico, Nigeria, Pakistan, Philippines, South Korea, Turkey, and Vietnam- which have been identified as having a high potential of becoming the world's largest economies along with the BRICs.

These three groups of countries – G7, BRICs and N-11 – play a vital role in the world economy and global growth. Together, they account for 76% of the world GDP and 72% of the world population, although much of their potential remains unrealized. Take, for instance, Indonesia. With its population of 238 million, the country generated $432.8 billion in GDP. That is $10 billion less than Sweden, whose population is barely 9 million. Similarly, Bangladesh has a population of 154 million, but its GDP per capita (PPP) is barely $1,340 – as compared to the U.S. level of $45,850. Today, most of these nations have promising outlooks for investment and future growth (Table 2).

Maturing metropolises, emerging megapolises

The 30 OECD nations are the world's most prosperous economies. These nations also account for some 80 metropolitan regions. The list is dominated by U.S. metropolitan regions, which account for the 25 most prosperous metropolitan regions, except for London, Paris and Dublin.[9] If these rankings were based on population size rather than average prosperity, half of the top-12 largest metropolitan regions would represent the great Asian urban centers – in addition to the Japanese and Korean capitals, Osaka, Aichi and Busan. Only Rhine-Ruhr and Paris of the European metropolises would remain in the list. The list of OECD metropolises does not include the BRIC and N-11 economies.

Today, the large emerging economies – particularly their rapidly-growing urban regions – are vital in the world economy (Figure 5). In 1950, there were only two cities worldwide with more than 10 million people; these two accounted for almost 24 million people. Typically, both – the metropolitan areas of New York City in the United States and Tokyo in Japan – were located in the G7 nations. By 2025, there will be 27

9 Measured in U.S. dollars (PPP), GDP per capita is relatively high, or about $34,000. Labor productivity was relatively highest in the U.S., or about $120,000-$157,000, especially in metropolises which are also known for their relatively high innovative capacity, including Boston, San Francisco and New York City. See OECD.

Table 2. Economic snapshot: G-7, BRIC and N-11 economies. Sources: GDP (World Bank, 2007); GNI per capita, PPP (2007); population (CIA, 2008 est).

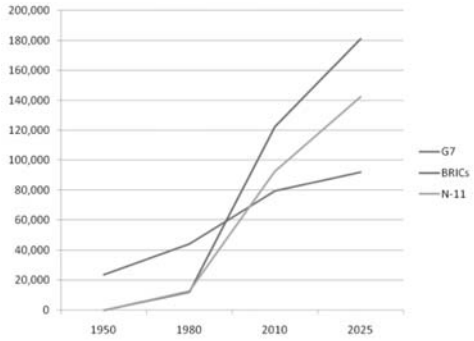
	GDP (US$bn)	GDP pc (US$)	Population (mn)	Urbanization (% Total)
G-7				
Canada	1,326.4	35,310	33.2	80.1
France	2,562.3	33,470	64.1	76.7
Germany	3,397.2	33,820	82.4	73.4
Italy	2,107.5	29,900	58.1	67.6
Japan	4,376.7	34,600	127.3	66.0
UK	2,727.8	34,370	60.9	89.7
USA	13,811.2	45,850	303.8	80.8
BRICs				
China	3,280.1	5,370	1,333.0	40.5
India	1,171.0	2,740	1,148.0	28.7
Brazil	1,314.2	9,370	191.9	84.2
Russia	1,291.0	14,400	140.7	73.3
Next 11				
Bangladesh	67.7	1,340	153.5	25
Egypt	128.1	5,400	81.7	42.3
Indonesia	432.8	3,580	237.5	47.9
Iran	270.9	10,800	65.9	68.1
Korea	969.8	24,750	49.2	80.8
Mexico	893.4	12,580	110.0	76
Nigeria	165.7	1,770	138.3	48.3
Pakistan	143.6	2,570	167.8	34.8
Philippines	144.1	3,370	92.7	62.6
Turkey	657.1	12,090	71.9	67.3
Vietnam	71.2	2,550	86.1	26.7

cities with more than 10 million people. Together, these will account for some 447 million people. Only 5 will be in G7 nations and 11 in the BRICs. The former will have over 92 million inhabitants; the latter, twice as many, or 181 million. In the case of cities with less than 10 million people, the BRIC economies have been dominant since the 1950s and 1960s. In the case of cities with more than 10 million people, the BRICs have been more populous since the 1980s and 1990s. The story of cities with 5-10 million is not that different.

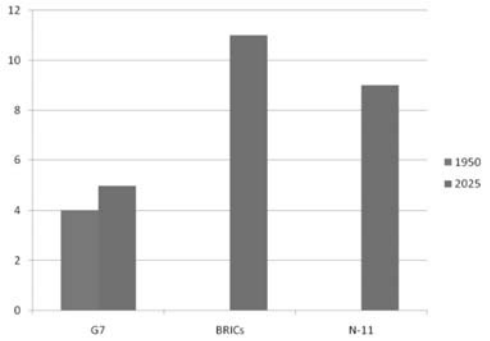
A growing divide is separating these two groups of emerging cities from the more established cities in advanced economies. Many among the former are developing into gigantic megapolises, whereas many among the latter have grown into prosperous metropolises. This dramatic transformation has many implications, including the rapidly-growing demand for commodities. The construction of cities entails ever rising demand for steel, copper, cement, plastics and a host of other metals. For example, as America's urban population expanded from 30 million in 1900 to 154 million by 1970, America's per capita steel consumption rose six fold. Between 1950 and 1970, Japan's per capita steel consumption soared eightfold off the 70% rise in Japan's urban population over the same period. In just the past few years, it has been voracious

More than 10 million

Population of cities (000s), 1950-2025

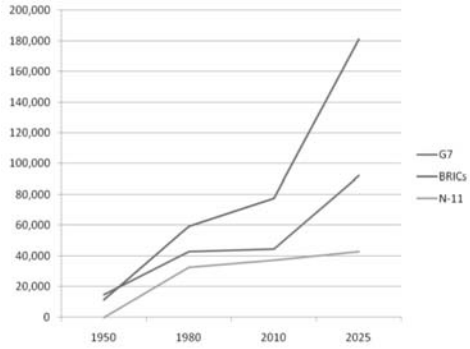


Number of cities, 1950 and 2025



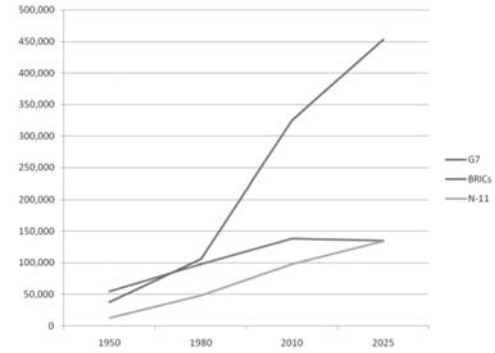
5-10 million

Population of cities (000s), 1950-2025



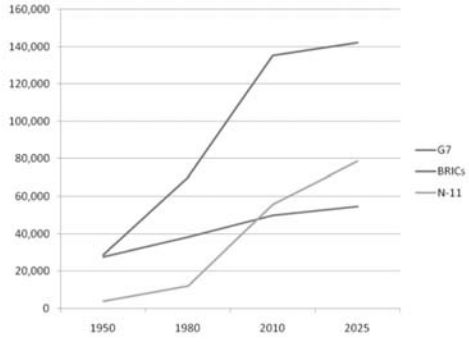
1-5 million

Population of cities (000s), 1950-2025



0.5-1 million

Population of cities (000s), 1950-2025



Less than 0.5 million

Population of cities (000s), 1950-2025

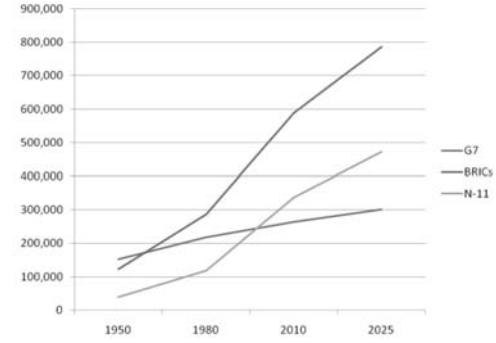


Figure 5. Growth of cities (1950-2025). Source: Author (data: UN).

demand for raw materials from China, and to a lesser extent, India, that has triggered the global rally in commodity prices. Asia's twin giants now play a pivotal role in dictating world commodity prices, and their role will only increase exponentially considering that the process of urbanization is just taking hold in both nations.

Wealthy metropolises

In 2005, the wealthiest metropolises were led by Tokyo, New York City, Los Angeles, Chicago, Paris and London. The scale economies of these metropolises are as significant as those of many national economies. For instance, the estimated GDP of Tokyo and New York City is comparable to that of Canada or Spain, whereas London's estimated GDP is higher than that of Sweden or Switzerland (Figure 5). In 2005, the top-100 wealthiest cities were in the G-7 economies (50), as against the BRIC (28) and N-11 economies (22). In 2020, the roles will reverse and most of these cities will be in the BRIC (48) and N-11 economies (22) rather than G-7 nations (48) (Table 3).

Due to the strong growth of business and financial services, London is expected to grow faster than Tokyo, New York City, Chicago and Paris. It will occupy the fourth position in 2020. At the same time, the positions of other "old Europe" metropolises – including Rome, Milan and Berlin – will deteriorate, whereas those of the rapidly-growing megapolises in Asia and Latin America will expand.

Typically, none of the advanced economies are included among the fastest growing large cities in 2020. These positions belong to large emerging economies, which are improving their positions in global rankings. Even today, the world's 30 most prosperous metropolises include five major cities, which represent emerging economies, including Mexico City, Buenos Aires, Sao Paolo, Moscow and Rio de Janeiro. With the exception of the last one, all these cities will improve their positions in the 2020 projections, when the top cities will also include Shanghai, Mumbai, Istanbul and Beijing. Between 2005 and 2020, three Indian cities will enter the ranks of the 100 most prosperous metropolises, whereas both China and Brazil will account for two new large cities in the same list, respectively. During this time period, 10 of the 30 most rapidly-growing metropolises will come from China and 8 from India.

The most advanced cities tend to be the most expensive ones as well. Today, Oslo, London and Copenhagen remain the most expensive cities for visitors. In the US, prices have fallen relative to the other cities. The US dollar's sharp depreciation – down almost 18% against the euro since the last survey – has made New York City a much more affordable place for European shoppers. London is now 26% more expensive. On the other hand, Eurozone cities are even more expensive. In 2006, Barcelona and Hong Kong were similarly costly. Most metropolises of the emerging economies fall below the index value 90.0, including Seoul (88.2), Singapore (85.9), Moscow (82.2), Taipei (67.9), Shanghai (55.2) and Delhi (51.2). The cheapest cities are in South Asia and South America. Buenos Aires is nearly as expensive as Mumbai.[10]

10 UBS (2008), "Prices and Earnings", March.

Table 3. Top-10 wealthiest cities: G-7, BRICs, N-11 (2005, 2020). Source: Author (data: PWC)

2005		
Urban area	**Country**	**GDP in US$bn**
Tokyo	Japan	1191
New York	USA	1133
Los Angeles	USA	639
Chicago	USA	460
Paris	France	460
London	UK	452
Osaka/Kobe	Japan	341
Philadelphia	USA	312
Washington DC	USA	299
Boston	USA	290
Sao Paulo	Brazil	225
Moscow	Russia	181
Rio de Janeiro	Brazil	141
Shanghai	China	139
Mumbai	India	126
Beijing	China	99
Kolkata	India	94
Delhi	India	93
St Petersburg	Russia	85
Guangzhou	China	84
Mexico City	Mexico	**315**
Seoul	South Korea	**218**
Istanbul	Turkey	**133**
Metro Manila	Philippines	**108**
Cairo	Egypt	**98**
Jakarta	Indonesia	**98**
Pusan	South Korea	**95**
Tehran	Iran	**88**
Belo Horizonte	Brazil	**65**
Guadalajara	Mexico	**60**

2020		
Urban area	**Country**	**Est GDP in US$bn**
Tokyo	Japan	1602
New York	USA	1561
Los Angeles	USA	886
London	UK	708
Chicago	USA	645
Paris	France	611
Philadelphia	USA	440
Osaka/Kobe	Japan	430
Washington DC	USA	426
Boston	USA	413
Sao Paulo	Brazil	411
Hong Kong	China	407
Shanghai	China	360
Moscow	Russia	325
Mumbai	India	300
Beijing	China	259
Rio de Janeiro	Brazil	256
Guangzhou	China	227
Kolkata	India	224
St Petersburg	Russia	151
Mexico City	Mexico	608
Seoul	South Korea	349
Istanbul	Turkey	287
Metro Manila	Philippines	257
Jakarta	Indonesia	253
Cairo	Egypt	212
Tehran	Iran	172
Pusan	South Korea	165
Monterrey	Mexico	157
Karachi	Pakistan	127

G-7 BRIC N-11

Emerging megapolises

In the early days of the Industrial Revolution, urbanization still meant a competitive advantage; not so anymore. In 1950s, the world population amounted to 2.52 billion; the majority (71%) lived in the countryside. In 2005, the world population had risen to 6.46 billion; almost every second inhabitant lived in cities. During the last half a century, the growth rate of the urban population has been almost 2.7% – twice as fast as in the countryside. The scale and pace of the current urban expansion is extraordinary in

urban history. It is mainly about poor people migrating to urban regions in unprecedented numbers, coupled with relatively high levels of birth and extended life expectancy. According to the UN, today's urban population of 3.2 billion will rise to nearly 5 billion by 2030, when three out of five people will live in cities. The increase will be most dramatic in the poorest and least-urbanized continents, Asia and Africa. Already over 90% of the urban population of Ethiopia, Malawi and Uganda, three of the world's most rural countries, live in slums.

Within ten years the world will have nearly 500 cities of more than 1 million people. Most of the newcomers will be absorbed in a metropolis of up to 5 million people. But some will live in a megacity, defined as home to 10 million or more inhabitants. In 1950 only New York and Tokyo could claim to be as big, but by 2025 almost 30 cities will have more than 10 million inhabitants – and some 10 will have more than 20 million people, including Tokyo, Mumbai, Delhi, Dhaka, Sao Paulo, Mexico City, New York-Newark, Kolkata, Shanghai and Karachi. At the same time, the role of the emerging metropolises in the BRIC and N-11 economies is growing significantly faster than that of the established urban centers in the G-7 economies (Figure 7).

It is especially cities in emerging economies that have posted above-average growth: of the ten cities with the largest increase in population over the last 30 years, five are in China, one is in India and one in South Korea. The Chinese city of Shenzhen illustrates this phenomenon: from 1975 to 2005 the number of its inhabitants rose by a factor of 23. Globalization and industrialization were the key catalysts. This is demonstrated by the statistics for the container trade: In the last ten years alone container traffic in Shenzhen has surged by more than 2,650%, and at worst this trend should continue over the next few years at a slightly slower rate (Box 1).

In the future, the pace of urbanization will decelerate. The poorer the country, the faster its cities will grow. There is a close, negative correlation between the current level of a country's per-capita income and the expected population growth of its major cities in the next 10 years. Most major cities in rich countries have not yet reached breaking point. Nor will all big cities be magnets. Over the next decade, some 5% of all the cities with more than 1 million inhabitants will decline, primarily in Europe and the U.S. Twice as many big cities as in the past are undergoing contraction.

Global competitiveness and innovation

According to the annual global competitiveness report by the World Economic Forum, competitiveness is defined as the set of institutions, policies, and factors that determine the level of productivity of a country. The level of productivity, in turn, sets the sustainable level of prosperity that can be earned by an economy. In other words, more competitive economies tend to be able to produce higher levels of income for their citizens. Competitiveness is measured by two indicators. The Global Competitiveness Index (GCI) seeks to take into account the microeconomic and macroeconomic foundations of national competitiveness. Currently, the largest economies tend to be relatively competitive, but the most competitive economies tend to be small and open economies in Europe (Nordic and continental countries), and Asia (the newly-

Box 1. Two cities, two systems: Hong Kong and Shenzhen

In 1997, Hong Kong reverted to Chinese sovereignty as a Special Administrative Region (SAR). China promised Hong Kong a 50-year autonomy; "one-country, two systems", as Deng Xiaoping put it. Measured by purchasing power parity, Hong Kong's GDP per capita today is $44,050. With its seven million people, it is almost as prosperous as Switzerland. This success is linked to China's soaring economic growth, Hong Kong's tax incentives and role in global trade. Despite Asia's 1997 financial crisis, the technology sector slowdown, and SARS, Hong Kong's economic engine has been humming. Today, it remains a globally important trade entrepot and the financial hub for the Pearl River Delta (including Shenzhen, Zhuhai and neighboring parts of Guangdong province) with its population of 65 million. This huge economic engine has enjoyed an annual growth rate of 17 percent for the past quarter-century. But that may not be enough.

In the past, Hong Kong was the gateway to mainland China. Now the mainland is giving rise to challengers of its own. Since the opening of the Baiyun airport in Guangzhou, just one hour away from Hong Kong via a high-speed ferry, the region has been growing as an air transportation hub for the region. Despite 25 million tourists in Hong Kong last year, the growth levels are highest in nearby Macau, China's Las Vegas. It was shipping that initially made Hong Kong, which is still the world's second-biggest container port by output and third-biggest air-cargo hub. Ever since Yangshan, a massive deepwater port off the southern coast off Pudong, opened its first phase in 2004, Shanghai's role has risen rapidly.

Since Shenzhen was established as China's first economic zone in 1979, the former fishing village has exploded into a prosperous city of 9 million. Its GDP per capita is almost $10,000- a figure that Hong Kong first surpassed in 1987. Now the Hong Kong government is considering plans that could eventually lead to merging the adjacent cities into a single economic powerhouse. Shenzhen and its neighbors lack Hong Kong's financial sophistication and global mindset, whereas the SAR could take advantage of Shenzhen's integration with the rest of China and its role as a technology hub (Figure 6).

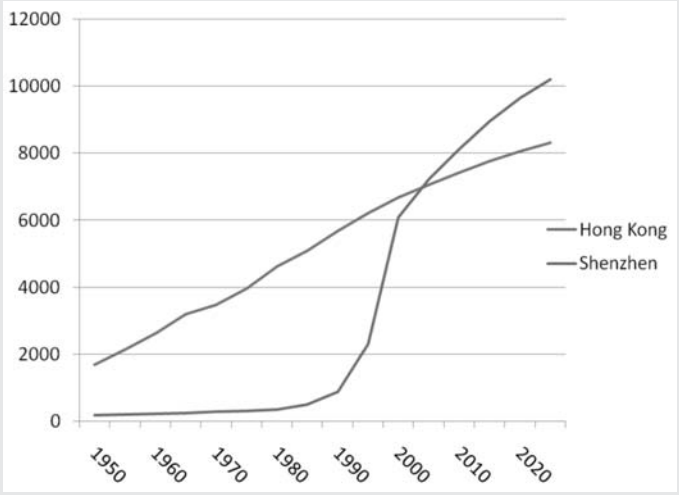
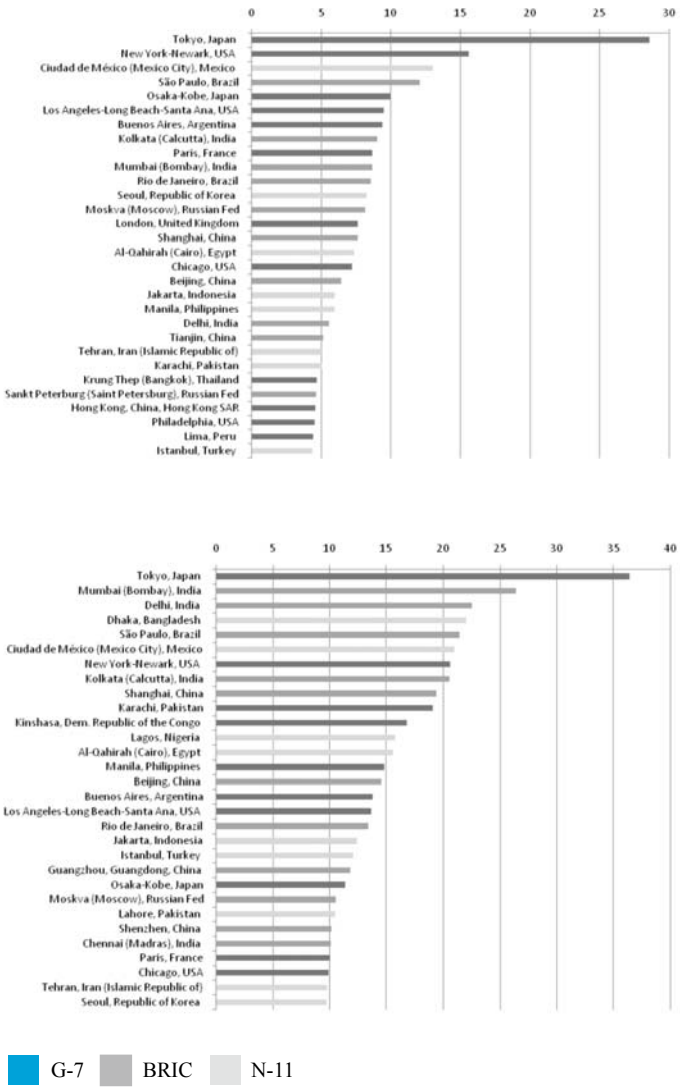


Figure 6. Urban population (in thousands), 1950-2025. Source: Author (data: UN).



1980 (million)

2025 (million)

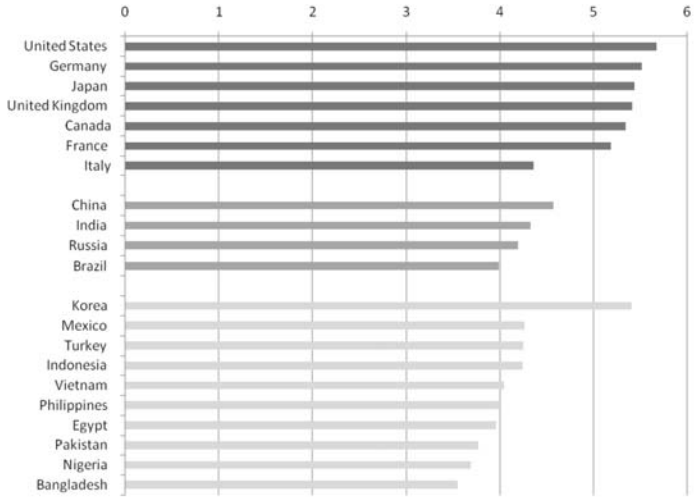
Figure 7. World's largest metropolises (1980-2025)Source: Author (data: UN)

industrializing countries).The advanced economies and the BRICs are followed by the N-11 economies (Figure 8).[11]

The other WEF competitiveness indicator is the Business Competitiveness Index (BCI), which focuses on the microeconomic foundations of competitiveness, rooted in the sophistication of companies (both local and subsidiaries of multinationals), the quality of the national business environment, and the externalities arising from the presence of clusters of related and supporting industries. It explores the underpinnings

11 Porter,M.E., Schwab, K. and Sala-i-Martin,X. (eds) Global Competitiveness Report 2007-2008 (London: Palgrave Macmillan).

(a) Global competitiveness index



(b) Business competitiveness: quality of business environment

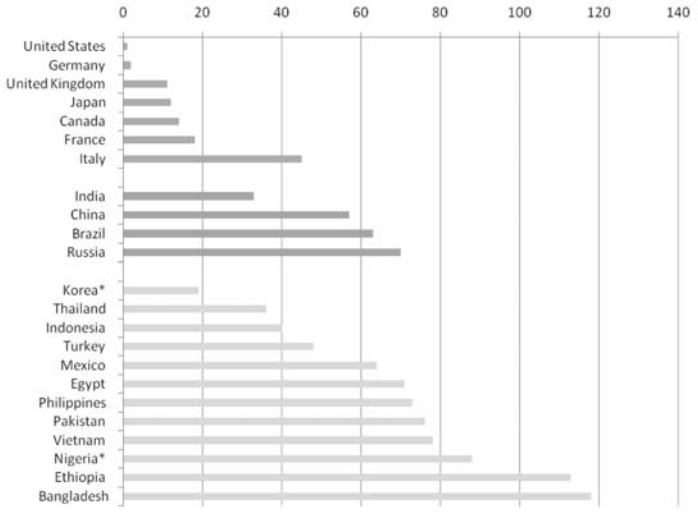


Figure 8. Global competitiveness (2007-2008). Source: Author (data: Global Competitiveness Report, 2007-2008; WEF)

of sustainable national prosperity over the medium term, measured by the level of GDP per capita adjusted for purchasing power. The rapid growth rate of large emerging economies is accelerating not only the globalization of competition among companies but also the globalization of national business environments. Currently, the G7 nations are among the top-20 most competitive economies worldwide in terms of the quality of their national business environments. They are followed by the BRICs.

Often, innovation is measured by input indicators, such as research and development (which reflect the willingness to invest but do not guarantee the ability to excel). Output indicators, such as patents, provide another measure for innovation. Throughout the 1950s and 1960s, the United States set the standards for prosperity, productivity and innovation. America enjoyed superior leadership in science and technology, R&D and the emerging sector of information and communication technology (ICT) goods and services. After World War II, the economies of Europe's leading nations and Japan were too devastated to pose a competitive threat to U.S. multinationals, which were barely exposed to international competition. Since the late 1970s and 1980s, the innovative capacities of OECD countries have converged substantially. Like the UK, Germany and France in the postwar era, China and India are now accelerating catch-up efforts and seeking to move higher in the value-added chain.

Despite the gains made by China and India, the list of the top ten innovator countries has changed relatively slowly, as measured by the U.S. Patent and Trade Office (USPTO). A small number of geographic locations tend to dominate the process of global innovation in specific sectors and technological areas.[12] Since the introduction of reforms, first in China and later in India, these nations have steadily improved their rankings. In 2005, the top four innovator countries – the U.S. (51.9%), Japan (21.1%), Germany (6.3%) and the UK (2.2%) – accounted for more than 81% of patents. China and India were far behind the top ten innovator countries in absolute terms. Despite their absolute superiority, the leading innovator nations have fallen behind in the relative growth rates. Further, recent growth rates conceal a rapid decrease among the leaders (G-7) and a rapid increase among the challengers (BRICs, N-11).[13] According to the World Intellectual Property Organization (WIPO), these trends are even more prominent. In 2000, China's share of total patent filings worldwide was 1.9%, according to WIPO; by 2006, it had more than tripled to 7.3% – well behind Japan (29.1%) and the U.S. (22.1%) but only 0.1% behind the leading European nation, Germany (Figure 9).[14]

The effects of economic and educational competition can also be evaluated via global competitiveness indicators, particularly in higher education (Box 2).

National averages, however, tell only part of the story. Take, for instance, the U.S. and China. In the U.S., different states played a different role in the national innovative capacity. According to the available data, only 10 states account for 66% of all 2.5 million patents granted and distributed in the U.S. states between 1963 and 2007. Innovative activities have been concentrated heavily in California, the home state of Silicon Valley, followed by the tri-state area (New York, New Jersey, Connecticut),

12 In the 1980s these locations included the United States and Canada, the leading European nations and, of the Asian nations, only Japan. Toward the late 1990s, Taiwan and South Korea made the list. Meanwhile the relative share of large EU countries, including France, Germany and UK, has decreased.

13 Steinbock, D. (2007), "New Innovation Challengers," The National Interest, January-February.

14 Worldwide patent activity increased by 4.9% between 2005 and 2006, mostly due to increased filings by applicants from China, Korea and the U.S.

Box 2. Higher education, innovation and competitive advantage

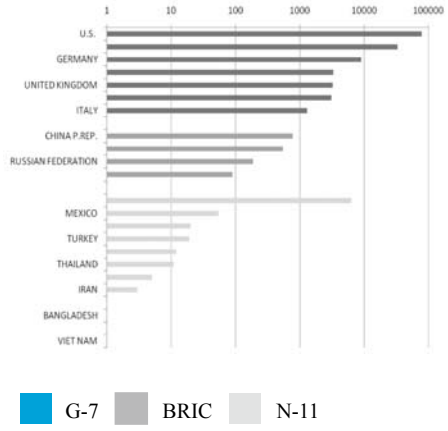
In primary enrolment the rankings are led by Japan and Nordic countries. The most competitive nations of Europe are relatively strong in primary, secondary and tertiary enrolment, whereas the US is strong primarily in the tertiary enrolment. In China and India, the relative strength declines from the primary to the tertiary enrolment. In terms of quality indicators, the U.S. is regarded as relatively strong only in terms of its management schools and specialized research and training services. India's educational system and math and science education is considered cutting-edge, but this system remains relatively thin. China's ranks are more even throughout the sub-index.

The innovation sub-index indicators emulate those of higher education and training. In most cases - quality of scientific research institutions, company spending on R&D, university/industry research collaboration, government procurement of advanced technology products, and particularly utility patents - the U.S. is the leader or among the leaders worldwide. The U.S. is particularly strong in those areas of innovation that matter for national competitive advantage. India's strengths in science and engineering are substantial. China's strengths are increasing through government procurement of high-technology, university/industry research collaboration and even in firm-level R&D.

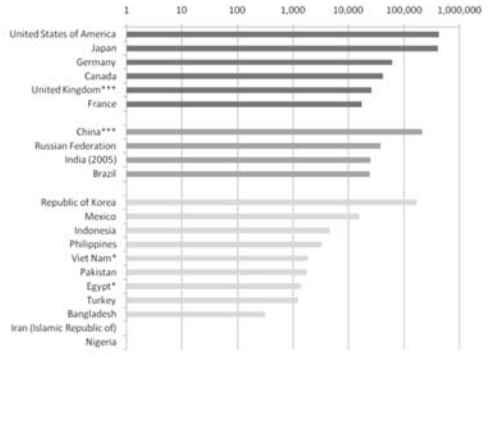
In many industries, innovation is migrating from high-income nations to emerging economies.

Source: Steinbock, D. (2007), "Higher Education and Innovation as Competitive Advantages" in Robert L. DeHaan and K.M. Venkat Narayan (eds.) Education for Innovation: Implications for India, China and America (New York: Sense 2008).

G7, BRICs, N-11 (Log scale, 2007)



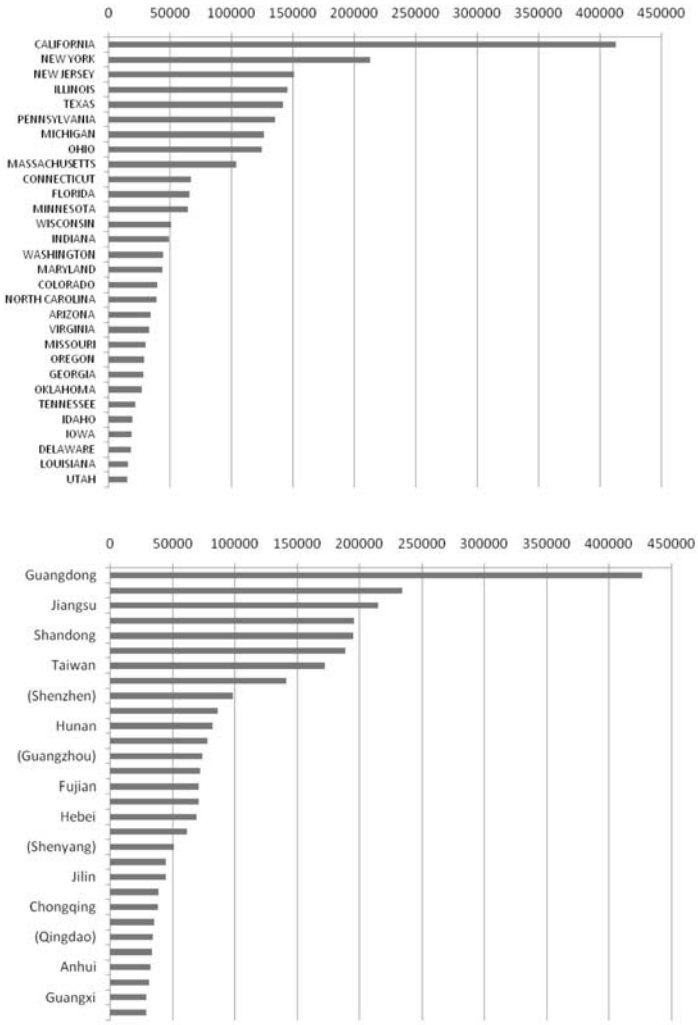
G7, BRICs, N-11 (Log scale, 2006)



G-7 BRIC N-11

Figure 9. Leading innovators. Source: Author (data: USPTO; WIPO)

Boston's research region (Massachusetts), as well as Illinois and Texas. Typically, the largest urban regions of these states – particularly those with heavy emphasis on higher education, specialized research activities, thriving industry clusters and vital base for growth and entrepreneurialism – tend to serve as regional innovation centers as well (Figure 10).



U.S. States
(data: USPTO)

Chinese provinces
(data: SIPO)

Figure 10. Innovative capacity and urban agglomerations. Source: Author.

Conversely, in China different provinces play a different role in the national innovative capacity. According to the available data, only 10 provinces accounted for 66% of all 2.7 million domestic applications for patents between 1985 and 2006. Innovative activities have been concentrated heavily in Guangdong, the trade engine of China where the economic reforms were first initiated first in the early 1980s, as well as the home of the great growth cities of Guangzhou (Canton), Shenzhen and the like. It is followed by Zhejiang and its capital Hangzhou and its neighboring Jiangsu and its capital Nanjing, close to Shanghai municipality. These are followed by Beijing, Shandong and its capital Qingdao, Shanghai, Taiwan, asl Liaoning and its capital Shenyang, the center of China's industrial northeast. In these provinces, too, the largest urban regions – particularly those with heavy emphasis on higher education, specialized research activities, thriving industry clusters and vital base for growth and entrepreneurialism – tend to serve as regional innovation centers.

Despite these generic parallels, U.S. states and Chinese provinces differ substantially in terms of geography, economic development and, in particular, scale. In the U.S., innovative activities are concentrated in California, New York, New Jersey, Illinois, Texas, Pennsylvania, Michigan and Ohio. These tend to be the most populous states as well with population levels ranging from 24 million to 37 million (Texas and California, respectively) to 11 million (Michigan). In China, the innovative activities are concentrated in Guangdong, Zhejiang, Jiangsu, Beijing, Shandong, Shanghai and Taiwan. Some are also the most populous provinces of China with population levels ranging from 83 million to 92 million (Guangdong and Shandong, respectively) to 17 million (Shanghai).

Scale matters.

Urban agglomeration economies

During the past few decades, the urbanization trend has accelerated, due to two key drivers. Industrialization has made possible the exploitation of the economies of scale, which requires masses of industrial workers. On the other hand, an increasing number of countries have opened up to international trade and capital flows. These two drivers – openness to foreign trade and investment, rising scale economies – have been especially typical to the large and midsize emerging economies. In 1950, there were only eight urban agglomerations with more than 5 million people. Typically, most were in G-7 nations, including the US (New York, Chicago), Western Europe (Paris, London) and Japan (Tokyo). In contrast, there were only three such urban centers in the BRIC economies of China (Shanghai), India (Kolkata) and Soviet Union (Moscow). By 2025, the number of these cities will grow almost eightfold to 70. The BRICs (33) and N-11 economies (21) will account for 54 such urban agglomerations. In contrast, there will be just 16 such cities in the G-7 economies (Table 4).

Over the last two decades, cluster research has witnessed a lot of theory development and empirical analysis.[15] The clusters, however, were made possible by the second wave of globalization that introduced a new type of trade, when rich country specialization in manufacturing niches gained productivity from agglomerated clusters. Most trade between developed countries became determined not by comparative advantage based on differences in factor endowments but by cost savings from agglomeration and scale. Because such cost savings are quite specific to each activity, although each individual industry became more and more concentrated geographically, industry as a whole remained very widely dispersed to avoid costs of congestion (think of the spread of Hollywood to Bollywood, or the expansion of Detroit's car producers into their massive facilities in China).[16]

15 Compare Ketels, C.H.M. (2003), "The Development of the Cluster Concept - Present Experiences and Further Developments," NRW Conference on Cclustsers, Duisburg, Germany, Dec 5.

16 Firms cluster together, some producing the same thing and others connected by vertical linkages. Clustering enables greater specialization and thus raises productivity. It depends upon the ability to trade internationally at low cost, greater differentiation or innovation.

Table 4. Megapolises and urban agglomerations: G-7, BRICs, N-11.

G-7		BRICs		N-11		1950	
USA		**China**					
New York-Newark	12338	Shanghai	6066			G-7:	5
Chicago	4999	**India**				BRICs:	3
Paris	6522	Kolkata (Calcutta)	4513			N-11:	0
Japan		**Soviet Union**					
Tokyo	11275	Moskva (Moscow)	5356			Total	8
UK							
London	8361						
						2025	
Canada		**Brazil**		**Bangladesh**			
Toronto	5946	São Paulo	21428	Dhaka	22015		
France		Rio de Janeiro	13413	Chittagong	7639	G-7:	16
Paris	10036	Belo Horizonte	6748	**Egypt**		BRICs:	33
Japan		Pôrto Alegre	4633	Cairo	15561	N-11:	21
Tokyo	36400	Brasília	4578	Alexandria	5652		
Osaka-Kobe	11368	**China**		**Indonesia**		Total	70
UK		Shanghai	19412	Jakarta	12363		
London	8618	Beijing	14545	**Iran**			
USA		Guangzhou	11835	Tehran	9814		
New York-Newark	20628	Shenzhen	10196	**Mexico**			
Los Angeles-Long Beach-Santa Ana	13672	Wuhan	9339	Mexico City	21009		
Chicago	9932	Tianjin	9243	Guadalajara	4973		
Miami	6272	Chongqing	8275	**Nigeria**			
Philadelphia	6133	Dongguan	6157	Lagos	15796		
Dallas-Fort Worth	5419	Shenyang	6156	Kano	5056		
Atlanta	5151	Chengdu	5320	**Korea**			
Houston	5049	Xi'an, Shaanxi	5233	Seoul	9738		
Boston	5032	Guiyang	5114	**Pakistan**			
Washington, D.C.	4889	Nanjing, Jiangsu	4771	Karachi	19095		
Detroit	4606	**India**		Lahore	10512		
		Mumbai	26385	**Philippines**			
		Delhi	22498	Manila	14808		
		Kolkata	20560	**Viet Nam**			
		Chennai	10129	Ho Chi Minh City	8149		
		Bangalore	9719	Hà Noi	6754		
		Hyderabad	9092	**Turkey**			
		Ahmadabad	7735	Istanbul	12102		
		Pune	6797	Ankara	4589		
		Surat	5703				
		Kanpur	4601				
		Russia					
		Moskva	10526				
		Saint Petersburg	4476				
		Novosibirsk	1366				
		Yekaterinburg	1324				
		Nizhniy Novgorod	1262				

In the pre-1945 era, international competition was still driven heavily by input costs. As a result, locations with some important endowment – a natural harbor, or a supply of cheap labor – often enjoyed a comparative advantage that was persistent over time. In the past, Michael Porter has characterized clusters as "critical masses of unusual competitive success in particular business areas." Today, the very notion of "critical mass" is undergoing a change. Take, for instance, the globalizing mobile communications. In the early 1990s, Finnish mobile success took place in a small country of just 5 million people. During the past half a decade, first Chinese mobile operators and now their Indian counterparts are creating more than 5 million new mobile subscribers per month.[17]

Except for certain Chinese cities, the scale economies of the historical cities were relatively small, in comparison to their present-day counterparts. Things began to change only after the Industrial Revolution around 1750s, which triggered significant urbanization. By 1900, only a single nation, Great Britain, had become urbanized in the sense that more than half of its inhabitants resided in urban places. Today, every second person worldwide lives in a city. At the same time, global competition has grown more dynamic. Today, companies can mitigate many input-cost disadvantages throuh global sourcing, which has rendered the importance of comparative advantage less relevant. Concurrently, thriving clusters are diffusing from established metropolises in advanced economies to emerging megalopolises in emerging economies.

Firms will not shift to a new location until the gap in production costs becomes wide enough to compensate for the loss of agglomeration economies. Yet once firms start to relocate, the movement becomes a cascade: as firms re-base to the new location, it starts to benefit from agglomeration economies. During the second globalization wave most developing countries did not participate in the growth of global manufacturing and services trade. Cascades of relocation did occur during the second wave, but they were to low-wage areas within developed countries. The initial advantage provided by cheap labor has sometimes triggered a virtuous circle of other benefits from trade. For example, when Bangalore initially broke into the world software market, it did so by harnessing its comparative advantage in cheap, educated labor. As more firms gravitated to the city it began to reap economies of agglomeration. The increased export earnings financed more imports, thereby both intensifying competition and widening choice.

In China, the process of urbanization has now moved to a new stage. Instead of the coastal provinces and their prosperous 1st tier cities, the pace of growth and real estate investment is now relatively higher in the 2nd and 3rd tier cities (Table 5).

17 Porter, M.E. (1998), "Clusters and Competition," in Porter (1998) On Competition (Boston, Harvard Business School Press). On mobile communications and critical mass from Nordic countries to China and India, see Steinbock, D "Assessing Finland's wireless valley: can the pioneering continue?" Telecommunications Policy, January 2001; "The Mobile Revolution and China", China Communications, Vol 3, No 2, Apr 2006; "India and Mobile Revolution", Strategic Innovators (IIPM/India), June 2006.

Table 5. China's tiers of cities: a sample

1st Tier	2nd Tier	3rd Tier
Beijing	Chengdu	Ningbo
Shanghai	Tianjin	Wuxi
Guangzhou	Chongqing	Fuzhou
Shenzhen	Wuhan	Harbin
	Dalian	Zhengzhou
	Qingdao	Kunming
- Maturation	*- Strong growth*	*- Rising growth*
- Services	*- Industry*	*- Industry*
- International	*- Internationalizing*	*- Domestic*
- Innovation	*- Efficiencies*	*- Increasing efficiencies*

Until recently, the leading world cities were primarily in the leading economies of North America, Western Europe and Japan. Since the 1980s, the developing countries have played an increasingly vital role in the world economy and among the leading world cities. However, there is no single path of development. There is no single model of world city. Globalization has not resulted in a world city system that transcends national institutions, economy, politics and culture, which, in fact, have generated this system of world cities. Most importantly, the emerging world cities are not bound to imitate the established world cities, which are primarily in North America, Western Europe and Japan. The emerging world cities have their own path of development.

Since 2007, China and India – not the United States or Europe any longer – have been the most critical contributors of global growth. The 'new divide' of world cities reflects the differences of the established world powers (G7) and the large emerging economies (BRICs) and their midsize counterparts (N-11), while economic and political power is shifting from the developed economies to the large emerging economies.

It is the third wave of globalization that has given a powerful growth boost to the emerging world cities during the past quarter of a century. Unlike the established and prosperous metropolises in the advanced economies, these new challengers are far, far more populous. Over time, they will seek to replicate the cluster benefits of the leading world cities. Due to their critical mass, their potential for efficiencies, differentiation and innovation is extraordinary.

In the developed economies, the degree of urbanization tends to be more than 70-80%. In the large emerging economies, particularly China and India, the figure is only half that level. On the other hand, the rate of growth in these economies is extraordinary, even historically. The growth engines of the world economy are the large urban regions. In the past, they were in the West. In the future, the largest will be in the East.

Finland renewing herself through learning - the challenge of metropolises and new general culture

Osmo Rauhala

Introduction

> *Creativity cannot be given, but it can be taken away.*
> Adapting the idea of the French painter George Braque.

There is no recipe by which a national economy, a community or an individual can be taught to be creative. Not even the most successful artiste-professor can with certainty impart creative talent to his students. But there are success stories in which decision making has helped the culture of their region to grow and significantly improve the community's wellbeing.

Even more numerous, unfortunately, are examples of catastrophes in which the system has stifled people's free creativity. The most recent examples are the Nazism and Communism that the 20th century produced.

Education designed to make creativity flourish differs significantly from a traditional learning system that serves the needs of goods and services production and public administration. Understanding this is one of the key challenges of the project. The international art market also works in a different way than in goods production. The more artistic a product's outward aspect and significance, the more powerfully the mental images of the international art community influence its desirability. These trends that are born and circulate in groups of people significantly influence sales of many other products in the world as well. The so-called creative class, the members of which derive their livelihood from culture, is an important consumer group whose tastes and likings for things easily spread more widely.

It is interesting how in nearly all regional economic success stories in recent decades the role of culture and art has been considerable. Mental and material wellbeing has increased substantially in places where the creative class's share of the population has grown rapidly. A few places of this kind in Europe and North America are presented in this report. Additionally examined are: our national situation, cultural devel-

opment as a part of societal change as well as associated administrative measures relating to both training in the field and general development. The perspective adopted is how we relate to the international situation in the sector, how we find our success factors, and what examples from the world tell us. The objective is to help decision makers in their efforts to improve the prerequisites for creativity in Finland in general, but especially as a part of our international immaterial and material competitiveness.

What is creativity founded on?

Creativity and culture can not be dealt with as a part of learning, the economy and wellbeing without our understanding from where in our lives the phenomenon ultimately springs. It can not be a coincidence that makers of art have been among us for tens of thousands of years.

In order to succeed in engendering a creative atmosphere, decision makers must understand what human creativity is founded on.

Art is an older part of our life than bread

Agriculture is regarded as the beginning of culture. The word "culture" comes from cultivation, turning the soil. Yet for tens of thousands of years before grain was first grown in the lands that are today Iraq and Iran, artists, sculptors, musicians, dancers and storytellers were creating their works everywhere. Examples of the handiwork of cave painters and bone carvers over 50,000 years old have been found. Agriculture began a little over 10,000 years ago.

What made cave-dwellers creative?

The phenomenon has been looked at in hundreds of studies. According to the nourishment theory, the most important prey animals were depicted on rock surfaces to ensure hunting success. Some of the rituals were religious, some intended to enthuse the community. The theories certainly answer some of the questions, but not the most fundamental one, why? What got a species that was struggling for its conditions of life to devote a single precious calorie to sketching a deer or carving a horse from mammoth ivory? The growth of art has generally been understood as a part of the growth of the economy and prosperity. When basic needs have been provided for, the community can afford to practise culture. Thus one might suppose that cave-dwellers would have better things to do than carve patterns into hard ivory with primitive stone tools. Obtaining food took time, predators were a threat and every now and then a battle had to be fought with a neighbouring tribe. Why spend even an instant of time on something that cannot be eaten or used as a tool or weapon?

In those circumstances, making art feels almost like a self-destructive activity. The more sceptical easily doubt that the artefacts found and the rock paintings represent a

significant part of activity in that era. Even in the Stone Age the community could afford to support a few drifters munching fly agaric mushrooms.

But art calls also this assumption into question. Large works of environmental art, such as the

Uffington White Horse, Maiden Castle and Long John of Wilmington in England reveal that more than a few shamans were at work. Hundreds of thousands of cubic metres of soil, sand and stone were excavated and carried away long distances in leather sacks. This required the efforts of the entire community for decades and maybe centuries. Stonehenge and other cult sites belong in the same category. But not all works of environmental art have been temples and they were created by means of astonishingly sophisticated planning and an ability to transpose designs onto the terrain. What induced a Stone Age person to toil needlessly where no direct benefit was concerned?

According to Charles Darwin's Theory of Evolution, which has been judged one of the greatest scientific advances in his world, species and individuals evolve according to the principle that the fittest survive. Adaptation to different conditions moulds a species and the winners are those who adapt best. In the 20th century, Maslov's hierarchy of needs explained that people strive first to satisfy their basic needs like nourishment, shelter, warmth, security and procreation. Only after that come other social needs and last of all, after the standard of living has risen, a desire for self-actualisation. Art and culture have been understood as belonging to the highest narrow section of this pyramid.

However, early art tells something more by its existence than has been described in the foregoing. If cave-dwellers struggling for their basic needs have significant amounts of time and resources to devote to making art, the phenomenon represents something other than the highest standard-of-living needs.

Evolution would certainly have swept art into the rubbish bin of futile vanities over the millennia if it had been able to do so. Art is a part of our basic needs in one way or another. But what need does it answer? There is a clear reason for obtaining nourishment, likewise for procreation, making tools and building shelters.

The following is my own definition, although several similar explanations have been developed in various scientific communities in recent times.

Art is a part of our self-preservation instinct

Art is like a pioneer plant species that establishes itself in a seemingly impossible growth substrate and gradually makes it suitable for life. Art answers our questions about the meaning of our life, its possible origin and its future purpose. Art, religion and philosophy share the same basic task. Besides being a builder, art functions as a decomposing bacterium. From time to time, ossified structures must be removed and their component materials rearranged.

All in all, art at its best acts as an antenna, warning and guiding

It is essentially relevant that an art community can itself plunge into the same pitfalls as all other communities. Prejudices, intolerance and many creativity-stifling features are found also within cultural circles. Strong support for art in the former and present communist countries did not increase these communities' creativity, competitiveness or prosperity.

The tasks of art in a community:

- creating the new through experimentation, reshaping the old or calling it into question
- making people's senses more acute and developing them
- mediating information, passing on tradition
- improving the social wellbeing of and entertaining the community
- to be a part of freedom of expression and opinion and through that a part of striving for democracy (unfortunately, art has also been used to a significant extent against democracy and justice, but so have the media, and yet hardly anyone calls the influence that the media have had on the openness of society into question)
- to be a part of the learning system, to foster creativity
- to be a part of economic competitiveness
- all of this helps our species in its coping strategy, just as art has been doing for tens of thousands of years.

Culture, creativity and the learning system

A lot of attention has been paid to creativity in our administration in recent years. The 2002 State Policy Programme on Art and Artists and the 2003 Future in Education 2015 report as well as the Culture in the Information Society Strategy, to mention a few examples.

One reason is probably the importance of creativity for economic growth, something that has become increasingly obvious. The Finns' wellbeing depends more on the country's competitiveness than it used to. Our competitiveness, in turn, depends on how we use our immaterial and material capital, including natural resources. The most important sub-factor in competitiveness is a capacity for renewal (Wilenius). In this task, art and creativity have had a key role throughout history.

Culture improves a society's wellbeing also in other ways besides helping us to prosper in international markets. It is said that culture creates meanings that give rise to a good life. Creativity has an important significance in our educational system. Although the Finnish comprehensive school has earned a reputation for itself through the good results that it has achieved in literacy, mathematics and the natural sciences, art subjects' share of what children learn at a young age has declined. Vocational studies in the art sector are also in something of a knot. Plenty of study places have

been available at polytechnics and the higher universities have likewise increased their student intakes. Fairly few have found work corresponding to their qualifications; most have gone into teaching or other sectors.

The comprehensive school

In my view, sporadically teaching art subjects in a few intensive periods is not a good solution in the comprehensive school stage. Creative subjects are sensitive to young people's different development phases.

It should be possible to spread them evenly over different age phases as many things change in a young person's life. Art also has a therapeutic function, but what matters most is to give creativity a chance every year throughout the period of the comprehensive school and the senior secondary school. Intensive courses are argued for on the ground that they provide an opportunity to go deeper into some question or technique all at once. There is something to that, but with good administration and teaching, it would certainly be possible to get a solid grounding in the fundamentals of art even if the teaching were spread over a longer time than just one intensive course in the 7th class of the upper-level comprehensive school, after which young people do not necessarily study any art subjects at all.

Vocational studies

Intermediate-level study places in especially visual and media subjects were significantly increased two decades ago. There had already traditionally been an extensive, multi-level system of music institutes and the aim was to create equivalent systems for other sectors in conjunction with the establishment of polytechnics.

The thrust of the idea is in itself correct, but in practice only few have found work in the sector. The field of free art is especially challenging and the lack of private education in Finland makes it quite narrow as well. All that has been on offer in the applied fields is mainly teaching jobs, and many have had to undergo re-training or change to a different field. Together with highest-level university art teaching, the problem would seem to be the smallness of the market in the sector and, on the other hand, the quality of teaching and the methods by which students are chosen. The amount of teaching has been substantially increased, but it has not led to any considerable growth in, for example, the art sector's export market. Most of our internationally known creators of visual art received their training under the old system in the 1980s or are self-taught. Sales of Finnish design products have grown thanks especially to Nokia mobile phones, but the company in question has also used a lot of design bought from other countries. It can be said that, with the exception of music, creativity and increasing art subjects have not, at least yet, produced a direct result in international forums. Of course, the development seems to be leading to a broader interaction, but there is room for improvement in the quality of teaching on all levels.

New university of art - new opportunity

I am not aware of any significant rationalisation projects in the field of art education in Europe. Partly because the most important institutions in the field around the world appear to be producing talents well, but perhaps also in part because the opportunity inherent to this has not been more widely understood.

Most of the art schools in North America are private and competition for results keeps their developers on their feet. In Europe, most art schools are publicly funded and it may be that their quality criteria are evaluated more rarely. By renewing and explicating the highest-level teaching in the field, Finland could have an opportunity to develop an art institution that would attract even international attention. At the moment, Finland's world-leading comprehensive education would seem to be draining away to somewhere else, because on the highest academic level only one Finnish institution, the University of Helsinki, makes it onto the list of the top hundred, and even then is in the bottom place. Its ranking has been falling for several years.

Cultural competence

Especially in the Western countries, we can see that production is becoming more immaterial in character. Cultural production is growing and with it the need for cultural competence. The development in the sector has followed general changes in society.

Development of cultures

Agricultural society	**Industrial society**	**Networked society**
Cultural differentiation, major fluctuations Local communities, world powers	Culture becomes more uniform Nation-states and nationalism Universalism, efficiency	Cultural diversity Internationalisation Human capital Creativity
Village	**Unitary state**	**Global community**

(Diagram adapted from Wilenius)

Most of the countries that are the destinations for our exports to Western Europe and North America are in the culturally networked society stage shown in the diagram. In the cultural sense, Finland is still only waking up to the change and the vast majority are still living in the industrial culture stage. For a large proportion of Finns, our country is still conceived of as an industrial agrarian society. The large age cohorts have been born into and grown up with this thinking, which has brought uniformity also to culture and its structures. The younger networked age cohorts, especially those born in the 1970s, are small.

In many of the growth centres in the world, such as the United States, the number of immigrants is large, the age pyramid is even and the community's capacity for self-renewal perhaps more flexible. This disparity between development stages in the sector of culture can not but influence our possibilities of expanding into world markets. Where cultural competence is concerned, attention must be focused first and foremost on quality and whether we have the right information about international demands. For example, with respect to cultural exports it has been typical for us to offer the rest of the world mainly things that we ourselves consider excellent and we have not bothered to find out what the international art field wants and what it appreciates. That is why most public projects have yielded results that are modest relative to the investment in them, and especially in the visual arts internationalisation has succeeded on the basis of individual artists' independent efforts. Indeed, what must be regarded as the main rule here is to work directly in target countries with the help of professionals in the field. Finland-based administrative organisations for art exports are not particularly efficient relative to their costs in this sector. As long as we have no more than a handful of professionals who operate or have operated internationally, some foreign professionals with international experience must be used for these tasks.

The feature common to all of the places proposed in the report is that they are engaged in an above-average amount of international interaction. In most cases its origin can be attributed to tolerance and acceptance of different cultures. Once it has developed, art and its makers are mobile and the cities that are able to attract them also succeed economically.

On the basic level, exchanges of teachers and students are good ways of learning to understand different demands. Finnish cultural professionals should be trained and placed in job tasks in key centres of each respective discipline around the world - preferably for periods of several years. Residency visits of a few months' duration will hardly engender anything concrete. Correspondingly, we should be able to attract talented students and teachers in the field to our country. Likewise, it would be good if talented professionals could seek positions in art institutions. For some reason, and despite our beautiful natural environment, we have had difficulties in getting top artists to want to stay here for any longer than a guest lecture.

Cultural competence is:

a) the ability to develop cultural products and services
b) the ability to read other cultures and international quality demands
c) the ability to foster creativity-promoting organisations both in the public sector and in the private.

The rise of the creative class

Alongside the traditional agricultural population, industrial workers, salaried employees and people employed in basic services, a new group, the so-called creative class, came into being in the end of the last century. In some areas it is calculated that over

30% of all employees in a city or country already belong to this group. In the United States, for example, this class is estimated to include nearly a third of the entire employed workforce. Its share exceeded that of the agricultural population as long ago as the 1950s and that of industrial workers in the 1990s. (Florida)

This group contains, broadly defined (group B)

- art professionals
- art sales organisations
- the media and entertainment sector
- research and science
- part of the teaching sector
- designers
- cultural institutions and administration
- some services

The so-called supercreative class (group A) is considered to consist mainly only of cultural professionals as well as those who work in art and teaching institutions, cultural administration, entertainment and media. In the United States 12% of employees belong to this class and in Finland 5%.

One of the best-known researchers in the field, the economic geographer Richard Florida, published his book "The Rise of the Creative Class" at the beginning of the millennium. The book prompted an awareness of the phenomenon, partly because the group in question has been scattered both in its tasks and where it lives. Compared with earlier divisions according to livelihood, the group comprises representatives of many occupations, some of which overlap the earlier ones. However, recent history contains examples of the group's influence on its environment, as the description of our example cities demonstrates. According to Florida, the greater the proportion of the population the creative class represents, the better the area succeeds also economically and the better is the quality of people's lives.

People who belong to the creative class give their interest and esteem to:

- creativity
- individuality
- societal activity
- concern about ethical issues
- concern for the environment
- health
- self-development
- success

Representatives of the creative class are not mainly radicals or Bohemians, but because they are tolerant also those grassroots groups who fit these criteria enjoy

living in their midst. It is precisely interdisciplinary art/science that interests members of this class and they seek varying and experimental work in which they get to know representatives of other fields. Otherwise they are mainly middle-class professionals who often accept the principles of the market economy. They shun totalitarian structures and prefer flexible mosaic-like models.

Members of the creative class gravitate towards places where:

- a tolerant and pluralistic atmosphere prevails
- there is a varied environment, a suitable scale, nature and tradition
- there are already creative people, a critical mass
- there are good cultural, educational and similar services

According to Florida, a growing creative class improves an area's economy, because:

- more innovations are created there
- there are more entrepreneurs
- a critical mass causes a snowball effect; the bigger it is, the more creative workers it attracts, and tourism and other services often follow from this

One of the latest surveys, Jena Economics Research 2007, indicated that in northern Europe the creative class's share of the population is greatest in the Netherlands and England. The highest proportions in the Nordic countries were in Sweden and Iceland. Finland came second last before Norway, where the creative class's share is fairly small even by European standards.

Biggest and smallest percentages of population represented by the creative class in northern European cities:

LONDON INNER (UK) 33.36	NORD-TROMS (N) 2.85
GOOI EN VECHTSTREEK (NL)	26.85 GRONG (N) 2.91
AGGL. HAARLEM (NL) 26.84	SETESDAL (N) 3.00
UTRECHT (NL) 25.95	HØYANGER (N) 3.33
AGGL. LEIDEN/BOLLESTREEK (NL) 25.43	NORD-GUDBRANDSDALEN (N) 3.37
SURREY (UK) 24.87	OPPDAL (N) 3.55
GROOT-AMSTERDAM (NL) 24.86	MIDT-GUDBRANDSDALEN (N) 3.55
BUCKINGHAMSHIRE (UK) 24.60	BREKSTAD (N) 3.56
DELFT EN WESTLAND (NL) 24.54	FRØYA/HITRA (N) 3.60
BERKSHIRE (UK) 24.31	SURNADAL (N) 3.69

Finland is internationalising - whether or not we want it

A capacity to adapt has been essential throughout the development of humankind. In the 21st century, a European people can remain afloat in international waters by adapting in a managed fashion. To be able to navigate correctly, we must know our environment and how it is changing. Creativity and innovations have been pointed out in several contexts to be key means of preserving and improving our society's wellbeing. How has creativity functioned in Finland and the Western countries?

Two significant stages in the recent history of culture are influential in our present situation. In the period preceding independence art was broadly accepted in Finland as a part of our national identity and achievement of national freedom. A community spirit engendered a golden age, especially in the visual arts and music. It also opened windows on Europe and gave us an important jump start for the development of our culture. This phenomenon has been typical of agrarian societies. The Second World War altered the direction of development. Art became a part of our societal policy, there was little international interaction and even what there was mainly had Eastern Europe as its focus. Growing cultural uniformity, in turn, is a typical feature of a rapidly industrialising society.

At the same time, changes were taking place in the Western countries as well. In the early half of the 20th century France, and especially Paris, was the art centre of Europe and the world. The Second World War drove many European artists and scientists to the United States and most of them settled in New York. The centre of gravity of international art shifted to the other side of the Atlantic, something that also changed the character of art and creativity. In the United States, the transition was already being made to the final phase of the networked society. By the 1950s more people in that country were working in cultural services than in agriculture. (Florida)

New York developed into the leading metropolis of culture, a place where all forms of art flourished in the same environment. The situation remains mainly the same in the 21st century, although several strong art cities like London and Berlin have grown in Europe, along with a number of smaller cultural centres like Dublin, Prague, Milan, Bilbao, Amsterdam, and so on. The East also has new strong centres like Shanghai in China.

Finnish cultural life reacted slowly to the latest changes in the world. With the exception of music and design, our art continued to cling to the ideals and operational methods of the industrial society until the end of the century. International achievements by individuals were seen in various segments, but the truth is that strong names like Jean Sibelius and Alvar Aalto dominated the international picture of Finnish culture for nearly a hundred years. The bulk of our art curled up in the domestic market, which was strongly publicly funded and directed. This seems to be the main reason why it has only been since the turn of the millennium that our art products, especially visual ones, have approached international forums. Light music and cinema were likewise late to make it onto world markets compared with, say, our neighbouring country Sweden.

Only our classical music has been able to appear widely on international stages. According to various estimates, several hundred musicians, conductors, singers and composers nowadays earn a livelihood out in the world. In the visual arts, for example, the corresponding figure is only a tenth as many, if even that. The difference is so significant that the development of these two sectors should be examined. Pictures and sound can be compared because both of them are universal languages. Our literature and the theatre based on it face a must greater challenge as they try to penetrate world markets, where languages other than Finnish are dominant. Besides being a universal language, pictures and sound are united by the international market. Muse-

ums, galleries, concert halls and record companies create services everywhere. There are also national talents to be found for both modes of expression and especially in recent decades basic education in both has been widely available in Finland. Of course, studying music was more common in this country than studying the visual arts throughout the first half of the century. Given that both of them received a good push out into the world during the golden age, the question of why only music was able to continue its impetus prompts attention. .

The solution must be found in operational methods in the visual arts sector. Strong and constricting public control and State funding make the sector and its intellectual atmosphere more uniform at the same time as music comes into being in a more diverse and pluralistic environment. Various organisers and producers of music, record companies, and so on created a more mosaic-like structure and also international influences were able, through the media, to influence music more than the visual arts. As already pointed out, it is difficult to give creativity to a community, but it is fairly easy to eradicate it. These two sectors in Finland serve as good examples of how the operating environment affects international success.

Design adapts by its very nature, the Nokia miracle

Industrial design is already adapting as a sector to the demands of business. Works are applications meeting various needs and makers understand the various parties in the life curve of the works. Finland has been able to create glimpses of the world's product family in the sector of good design: Alvar Aalto, Kaj Franck, Tapio Wirkkala, Marimekko, Fiskars, and so on. It was only with Nokia mobile phones that the first Finnish globally known product and economic success story in which also design has an important role made its debut.

Naturally, the company's infrastructure, management and technical solutions created a competitive product, but many experts believe that good design also had a key role in the development that began in the late 1990s. A temporary slump in the company's growth in the beginning of the 21st century has been interpreted as resulting to a significant degree from the visual format of the range of models on offer in that period. However, creativity has not been in Nokia's case only design, but also part of the company's management culture. The foundations of success in this company offer good lessons also when we ponder more broadly how Finland must react to the 21st century's cultural challenges in the world.

New York and new art centres

Conditions were better in New York than in many other corners of the world after the Second World War. The city had gained a diverse and talented group of new residents, its economic situation was good under the circumstances and its atmosphere more tolerant than in most of the United States. Soon, in the 1950s, smokestack industry began moving out of the centre and artists took over the emptying residential areas

and industrial districts. The first groups of the creative class acted like pioneer plant species. Bad blocks got new residents and gradually the artistic atmosphere generated growing interest in the area. Prices rose, the area was cleaned up and various service producers, restaurants, galleries, bookstores, theatres, and so on moved in.

In a couple of decades the area gentrified remarkably and some of the artists had to move to the next place as the old area became too expensive. This development has repeated itself several times. First the art people moved to Greenwich Village in the 1940-50s. They began moving into Soho in the 1970s and soon afterwards to East Village as well. Their destination in the 1980s was Tribeca, and in the 1990s Chelsea and part of Brooklyn. The latest wave of migration had the Lower East Side as its destination, and after that nearly all parts of Manhattan have been completely gentrified. The wave of migration can only advance into Harlem or else across the rivers into other boroughs.

The presence of the creative class and the cultural sector's growth have been reflected in a significant rise in the city's prosperity. Cultural services and products, including tourism and media services, generate the biggest individual sectors in terms of turnover and effect on employment. Although the banking sector, for example, generates a bigger turnover, it provides less employment than cultural production.

New York is one of the world's most densely populated areas. In the city's central area, Manhattan, there are 26,000 inhabitants per sq. kilometre. (The figure for Helsinki is 3,012) This density once gave rise to a considerably high crime rate, which continued to rise until the 1980s. The situation has changed dramatically in the past couple of decades. The number of homicides has fallen by over 80%, to its present level of 421 a year in the city area, compared with an annual average of 2,500 cases as recently as the 1980s. Relative to the population of 12 million, the difference compared with, for example, Finland, is no longer remarkable. Pacifying the city has attracted more families with children and the number of children there has grown by over 30% every year in the 21st century. Children have attracted also good school services and opportunities for higher studies. New York has nearly 600,000 third-level study places.

Several years ago, the National Geographic magazine did a survey of the best residential areas in the United States measured in terms of schools and health services, cultural services, air quality and safety. The list included several well-run small cities close to clean natural environments, but Manhattan, as the only large city, came first. In the case of New York there is no coincidence involved; the situation there is the result of building the kind of atmosphere and environment in which those who do creative work are interested.

According to Richard Florida, these factors are:

- a tolerant and pluralistic atmosphere
- a mosaic-like economic structure
- good cultural services
- good educational opportunities
- a richly diverse range of leisure amenities and opportunities

New York has been famous for its ethnic diversity. Some 36% of the city's residents were born outside the USA. Since immigrants represent 11% of the US population on average, ethnic groups are three times as numerous in New York as in the rest of the country. The diversity of nationalities is also reflected in an exceptional tolerance with respect to race, religion and gender.

New York is a cultural giant in many sectors. Its development has been accelerated by the consequences of the world wars, but the city itself has also been cognisant of the needs of creativity and cherished them, all the time eliminating factors that disturb members of the creative class in their environment.

Dublin, Bilbao and Santa Fe

If the 20th century was the era of great metropolises (like Paris and New York), the 21st has seen small, but strong centres arrive, sometimes surprisingly, on the cultural map. After the fall of the Berlin Wall, it was believed that the German capital would become the world's new New York, but that did not happen. The energies released in Eastern Europe dissipated also to other places like Prague, London and New York. Of course, new creative potential came into being in all of the above-mentioned cities, but the pattern was more fragmented than might perhaps have been expected.

Something new was the powerful development of smallish and remote places (like Santa Fe in the United States, Dublin in Ireland and Bilbao in Spain) in the cultural services sector. They did not emerge from a vacuum, either; as a rule, there were generally a group of historical cultural influences, artists and patrons in the background or, as in the case of Bilbao, the city's desire to use architecture to raise its profile among centres of culture.

Santa Fe is a small city in the state of New Mexico in the United States. The area was long one of the country's poorest, a territory in the middle of the desert that seemed to interest no one. Native tribes sustained small-scale agriculture and tourism for decades until the city began developing powerfully a few decades ago. The reason was the well-educated researchers and artists who moved their work and places of residence to small centres close to nature. Why did they choose precisely Santa Fe? In the background was an artist by the name of Georgia O´Keefe, who in the beginning of the 20th century moved to the New Mexican desert near Santa Fe. She did a long lifework and pictured the landscapes of the region in a way that went down in the art history of the United States. She was followed after the war by another painter, Agnes Martin, and gradually the group grew and expanded into other areas of the visual arts.

A second line of development was the science centres Los Alamos and the Santa Fe Institute. They employed well-educated people who bought art. Galleries began to open in the city and the flow of tourists grew. Now with a population of slightly over 70,000, the city has more than 100 art galleries and 22 museums (Helsinki is six times bigger and has 25 galleries and about 20 museums). Cultural services employ 12,900 people in Santa Fe, which is 18% of the total employed workforce. Some 8 million tourists visit the city each year. Various sales receipts cover 78% of the city's expendi-

ture on culture. The city's tax revenues per resident have risen to the top of the country's average range from close to the bottom of the table. Property values have risen to 53% above the national average.

Bilbao in Spain is to some degree a corresponding case. It too has its history complete with artists and patrons, but in the beginning of the 1990s the city of waning industry made a decision that led to European success. The population had been declining for several decades up to the 1970-80s. The reason was industrial decline and the greater attraction of nearby smaller satellite cities. The educated population was moving out to them. The city, slightly bigger than Tampere with 200,000 inhabitants, decided to regain its place on the map of Spain and managed to make the rest of the world aware of it as well. The means chose was the architectural and visual arts mega-brand the Guggenheim Museum of New York. .

The architect Frank Gehry designed a unique modern art museum for the city and in addition to him two other mega-names of architecture, Santiago Calatrava Cesar Pelli, were invited to design their own monuments beside the river that bisects the city. Public transport was also rationalised and Sir Norman Foster designed a new metro system for the city. Together, these measures boosted the city's attraction and cultural services in combination with tourism now account for 76% of the total turnover generated by sectors of the city's economy. The annual income of city residents has risen above the Spanish national average for the first time in decades and new residents have begun flowing in from other cultures. In the 1990s people born outside Spain represented slightly over 1% of the city's population, but the proportion had increased to 6.7% by 2006. Thus the city has gained a reputation as not only a producer of cultural services, but also as a tolerant place to live. The aim is to increase production of immaterial services even further. The city already had an art museum and now there are two of them, in addition to three other museums. There are a score of galleries and the number is growing. Several new hotels have been built in the area each year and a variety of cultural festivals have been created.

Dublin is an Irish metropolis with about the same population as Greater Helsinki. In 2003 the British television broadcaster BBC conducted an extensive survey, involving interviews with tens of thousands of people to find the best place to live in Europe. The survey revealed that Dublin was the best European capital in which to live. Ireland's standard of living in general has risen rapidly in the past decade and Dublin is in a class all its own in this development. In terms of GDP per capita, Ireland is close to the head of the world table and economic growth has been one of the fastest rates in the OECD for many years. The city is renowned for its multiculturalism, in which respect it does not quite reach New York's level, but nevertheless persons born outside Ireland account for over 10% of the population. Especially members of the intelligentsia from Eastern Europe have gone there. There have been many immigrants from Poland, Lithuania and Russia, but also from China, Australia and New Zealand. Where culture is concerned, Dublin has been exceptionally successful as a producer of writers and poets. No fewer than three natives of the city have won the Nobel Prize for Literature. Dublin's literary talents have included William Butler Yeats, George Bernard Shaw, Samuel Beckett, Oscar Wilde, James Joyce and Bram Stoker.

The cultural heritage is reflected in a variety of events, institutions and museums in the city.

Summary of the properties of international cultural centres

Big metropolises have developed with volume and as a result of the changes that events like wars have caused. Berlin lost its position for decades after the Second World War and has been slower than anticipated to rise again after the collapse of the Eastern European systems. The capitals of the victor countries, like Paris and London, likewise suffered from the war, although the latter has in the 21st century become Europe's leading culture producer in many sectors. New York benefited from European out-migration as people fled the war and went there, and succeeded with its stable conditions in building a strong foundation on which the creative class has been growing for the past 40 years. The city has also determinedly maintained circumstances that encourage members of the creative class to move and remain there. For example, restrictions on the sale of property are in force in the main artistic districts, like Soho, Tribeca, Greenwich Village, and so on to prevent the confirmation of sales to persons other than those who make a livelihood from art. Alterations to old buildings are tightly regulated and facades protected. Unlike the situation in Europe, tax regulations also favour private donors and companies who support art institutions. Ireland is an interesting country in that since the 1960s tax exemption has been granted to those who make their main livelihood from art. This created an art-loving image for the country and encouraged international names to move there. And artists' small taxes did not reduce the budget funds of the strongly growing country.

New York's cultural services are in a class all their own in the world in every sector of art, but also education and health services are excellent. The historical urban villages with services that attract families with children have made the city quite enticing to creative people living in all kinds of social situations. What all of the cities mentioned have in common is multiculturalism and tolerance. Persons born elsewhere represent a considerably higher proportion of the population than they do on average in the country in question. Economic growth has likewise been faster than average in all of them in recent times. The development must be seen as a result of culture-promoting solutions, not necessarily as their cause. Population and tax revenues have grown in all of the cities faster than in their countries on average. New York and Dublin have been named in several surveys as the best cities in their respective continents in which to live.

Smaller cities have chosen their cultural strategies in a different way than the big ones. They have specialised and a so-called Lake Tuusula phenomenon is in operation in some of them. The popularity of Santa Fe, for example, is founded on the choices that two early artists made and their careers, which others later emulated. Just as some of our greatest artists in the golden age wanted to live in Tuusula close to the cabin where our national author Aleksis Kivi died. Dublin created its reputation with its major writers and specialised in institutions in the sector. Bilbao devised its concrete

coping strategy with the aid of architecture, acquired a ready cultural brand and succeeded beyond expectations. It seems, indeed, that New York-type metropolises of all disciplines of art will no longer easily come into being; instead, centres specialising in a certain discipline will develop and attract educated people and creators of immaterial products to even fairly remote areas. Another interesting feature is the fact that in all of the centres prosperity has increased and poverty declined faster than in the rest of the country, but income gaps have widened at the same time. General tolerance does not apply only to race, religion or gender, but also to wealth. Income gaps are not seen as negative in and of themselves as long as the incomes of the lower-earning section of the population and the services with which they are provided also grow faster than in the rest of the country. Cultural values typical of the creative class, concern for ethical issues, equality and the state of the environment are accentuated in these city communities in the same way as success and self-realisation. These aspirations, which are to some degree contradictory, are not stifled; on the contrary, there is an understanding of how beneficial diversity is for the community as a whole.

How we can use public measures to improve creativity as a part of our international competitiveness

1. Changing the economic structure and taking growth of the creative class into account.

- The material amount of production is declining, but its value is increasing. Design and immaterial factors are increasing their share as a factor of production. The share of exports in the national economy is emphasised at the same time as the numbers of pensioners and others requiring care are increasing.
- Art is a highly processed product, in which the material costs are small relative to the final price. The economic structure must support entrepreneurship, because the vast majority of actors in the creative class are entrepreneurs or freelancers.
- The private sector's consumption of culture, which is far too meagre in this country, must be supported through taxation. The public sector must support public-private partnership and encourage companies and private patrons to support culture and also invest in it. Tax benefits for supporters must be brought to the same level as in the English-speaking countries; whether tax relief for artists could be granted must likewise be considered. Tax obstacles to selling art (such as the 22% VAT on sales commissions), should be brought down to a sensible level and comparability with what applies in other sectors of culture.
- To promote cultural exports, experts in the sector must be found in the countries at which exports are targeted. Organisations operating from Finland are not cost-effective.

- The needs of the new culture-consuming class must be taken into account in urban planning. With respect to internationalisation, it would be very useful if we were able to attract foreign professionals who have succeeded in various fields of culture to Finland to work, teach and live if only for a few years. However, that presupposes a special concentration on international needs by residential areas in their cultural, educational and other comparable services. At the same time, a multicultural interaction would be engendered, something that has been seen to have been one decisive factor in successful creativity projects elsewhere.

2. Education

Education in creative subjects must be oriented on all levels so that it better supports quality and a deeper understanding of content. In comprehensive schools creative subjects must be studied every year for all of the 12 years. New resources must be allocated for in-depth courses so that the totality functions throughout the study period.

The concentration in vocational training must shift from quantity to quality. The criteria for choosing students and starting places must be applied in such a way that there are more resources and time for concentration and in-depth studies than in other subjects. Also in university-level studies, more attention must be paid to student selection, in addition to which teachers' salaries and conditions of employment must be made such that teaching work interests more top professionals from Finland and abroad.

It would be advisable to provide artists in various fields who are trying to gain access to international arenas with their own "Art Institute", a masters-level programme in which the main backbone of teaching would consist of relating our own art to whatever the demands of the international arena are at any given time. The institute's teaching staff must be experienced professionals who have distinguished themselves internationally. The institute must also impart other abilities: a command of foreign languages, communication skills, contract techniques and other things that are needed to operate abroad.

.

3. Public support for culture

Public support for art is substantial in Finland by international standards. Yet our cultural sector's overall share of GDP fell from 4.1% in 1995 to 3.8% in 2002. The reason is a reduction in the private sector's share. Public support should be able to bind also private money to projects and support projects that refine cooperation on the level of artists and institutions.

It would be desirable in public administration to make on the whole a clearer distinction in the respect that subsidy decisions with a bearing on an artist's social status should be made by the social welfare authorities, leaving the Ministry of Education to concentrate only on supporting professional competence and training in the field of

art. For example, the Finnish system of grants for artists needs to be developed in such a way that it really supports the unfolding of the very best talents. Many experts have argued that public grants in their present form are more binding than private funding, because distribution of public grants is based more on school-of-art thinking than on real evaluation of competence (Wilenius).

4. Include creativity evaluation in decision making

In the same way as the environmental impacts of decisions are assessed in various situations, creativity evaluations of the impacts of decisions should also be made in key areas such as education, taxation, business, housing, and so on.

Public measures and creativity

Every euro earned abroad through exports of goods and services will be more important for our national economy in future decades. The age structure of our society corresponds to that of the other EU countries, but we lack a flow of well-educated migrants into our country. The situation will not change significantly in the years of the near future, especially if we do nothing about it. The prices of labour, energy and capital are almost standard in Europe. The only remaining factors of production are mainly efficiency and quality - both of which depend on human resources. We can preserve our standard of living only by producing better products more efficiently. Success in that, in turn, will be achieved when those who do the work are competent, motivated and creative. The best margin for both companies and the national economy will come from products in which design accounts for a high proportion of inputs. The share of wages in total costs is also maximal in the sectors that make those products. Art is high-value-added production. Creativity is a factor of production, but the wellbeing of the entire community also belongs to its sphere.

Human resources determine the development of children and adolescents, the quality of work communities and services all the way to the care needs of the elderly. These factors function well when an atmosphere supportive of creativity dominates in the community. Its key components, in turn, are tolerance, plurality, fresh-mindedness, curiosity, encouragement, and so on.

The Finnish community is not especially tolerant and/or pluralistic. We adopt a reserved attitude to other cultures, but we are especially destructive towards those of our own citizens whose behaviour deviates from that of the majority population. They are often talented and successful, and soon try to work abroad either permanently or at least for part of the time. As stated in earlier parts of the report, the regions and cities in both Europe and the USA that have been successful in recent times are quite different in atmosphere from Finland.

The first and most important foundation for new growth in Finland is to succeed in developing an atmosphere supportive of creativity. This presupposes a change in many of the thinking habits that established themselves in the 20th century. Our administra-

tion guides from above and for party-political purposes. The media and the labour-market organisations act like a state within a state. The country is directed by a monopoly in almost every sector. Our consensus could be called corruption in some other country. People should be trusted by encouraging them to accept responsibility. The same should be demanded of officialdom. Better salaries than at present should be safeguarded for officials, but those chosen for various posts should be the most professionally competent applicants and they must bear responsibility for their work in the same way as in the private sector. This will eliminate one obstacle to creativity, the sense of political corruption that alienates especially young people from participating in the development of their community.

Tax funds must be spent openly and in a professionally effective way. A trilateral or whatever other contractual system must be founded on voluntariness. If some or other involved party begins dictating solutions by threatening with strikes or lockouts in key sectors, the State must have the right to dismantle the monopoly by increasing competition and plurality in the sector. From the perspective of creativity, it is better that the structure of society resembles a mosaic rather than a pyramid. Freedom of enterprise and to disagree also in practice is founded on a healthy state of the market. Corruption can be born of excessive direction by the public authorities just as much as it can spring from the market's greed.

The need for change in thinking is great in this respect, but a change in direction is essential for the growth of a creative community. It is the foundation on which all other measures are effective. Without development of views, public measures can easily remain no more than cosmetic gestures. Human resources do not grow by developing only one group of muscles; the prerequisites for creativity support each other in the same way as mycelia.

.

In 2003 the Government defined seven areas of emphasis:

- art education
- accessibility of cultural services
- cultural diversity
- relations between art and the economic sector
- improving artists' livelihoods
- art administration
- supporting internationalisation

As requested, I shall deal especially with education and touch on other sub-areas mainly from the perspective of promoting internationalism and creativity.

Education

The comprehensive school

Especially in music, early specialisation significantly improves technical ability, and the same applies in dance, where an artiste's top-level career can begin already at an early age. The visual arts, literature and theatre naturally benefit from early practice as well, but in their cases the development curve can be longer. Art history knows cases where a top artist may have begun training only at the age of 30-40.

By contrast, a successful dancer, pianist or violinist rarely begins training in middle age. Art subjects are different even from each other and studying them differs considerably in general from other school subjects. A comprehensive school that increases uniformity and revision of third-level qualifications do not appear to have increased creativity-promoting diversity in our educational system; on the contrary, the methods and administration used for knowledge-based subjects are being applied to art subjects. Art subjects had their own department, in the Ministry of Education among other places, but it has now been subsumed and all education is handled on the same basis. That is not good for learning creativity. At the same time as the importance of art subjects for society is recognised, the administration for and methods of teaching them must be reformed, put on an independent basis and freed from methods that suit only general education.

Art subjects improve the prerequisites for learning as a whole irrespective of whether the pupil goes into the art sector. The basic properties of creativity are applicable in all tasks in life. Imagination, an ability to outline things and a capacity for expression are all necessary the more immaterial the structure of our production becomes. Art subjects act as instruments of learning in the early stage of school and have a clear therapeutic effect throughout the comprehensive school. The present periodic teaching may lead to a situation in which a pupil does not practise visual arts at all after the autumn of the first year in the upper level of the comprehensive school. Yet adolescence is precisely the time when interest in things wakens and dies very quickly, so art subjects are needed every year. It is good for a young person to examine the world through creative expression in different stages of life, in different seasons of the year, and so on. Rarely are 13-year-olds mature enough to decide what they want and what to exclude. Steady practice can spark interest at a time that can not be predicted. The supportive effect that creative subjects have on others also remains weak under the present programmes. .

Assessment and competitions

The main idea of the comprehensive school has been equality, uniform education, combating inequality and marginalisation. These are all ethically noble objectives and the average standard of learning is important for the whole of society. Inequality has been countered by beginning numerical assessment later, often only in the fifth or sixth class, avoiding personal sports competitions and also many performance events

favour group performances. For example, exhibitions of products of manual skills (handicrafts and drawings) are hardly ever arranged any longer. This is certainly due in part to teachers' time use and other resources, but the final result is very grey in the individual sense.

Christmas parties, Mother's Days, Independence Day parties and end-of-term celebrations have changed so that a solo performance by an artistically gifted pupil is hardly ever seen. Since also sports events are mainly collective games and assessment of study subjects is written without a clear numerical scale of values, the school does not give children structures with the aid of which they could find their place in the community. It often happens that children themselves determine what is important and what is not. What can be emphasised in such cases is appearance, physical strength, aggression, verbal impudence, the amount of money the child has, and so on. If the community does not provide a structure for relations between children, they will make their own value scales. A framework like that can be a breeding ground for arbitrary behaviour and stark inequality, which are reflected in such phenomena as school bullying and mental health problems.

My own experience is that for fear of inequality we have gone to the other extreme, which may especially weaken the development opportunities of creative and talented children. Because basic education has been taken care of well and even-handedly in Finland, we can afford from now on to develop also children's special properties. International competitiveness, whether what is meant by that is direct cultural exports or exports of goods and services based on innovation and design, requires people with top-level competence. Bringing talents into being and growing them demand a framework of their own. The differences that exist within age cohorts with regard to ability to learn and master various things must be accepted. Different varieties of talent work differently in people of different ages.

Examples of public but differentiated school systems

Basic education in New York City is divided into four parts, as in Finland: kindergarten, primary, middle school and high school. The division is not directly comparable to the Finnish one: kindergarten begins a year earlier and high school two years before our senior secondary level. High school is narrower than our senior secondary and there is usually a two-year college or institute-level study period between it and university.

What is of essential relevance, however, is how New York has reconciled equitable basic education with fostering talented children. All of the schools maintained by the city are free. But some of the schools are specialised already at an early stage, catering for such matters as expressive skills, literature, mathematics or the natural sciences. One middle school and a high school collaborate with New York University's faculty of medicine. NYU is a private university. These specialised institutions of learning are free in the same way as the city's other schools, but the requirements for admission are that the pupil lives permanently in the city and has passed the entrance exams. Thus

the system selects, on the basis of exams, children for special schools already at middle school age.

Schoolchildren in Finland can apply for admission to, e.g., a music class in the upper level of the comprehensive school and themselves choose some of their study subjects, but centralised institution thinking in Finland keeps all within the same framework until the senior secondary school. Only there is selection accepted, for example on the basis of the average grade with which the pupil has graduated from the upper level of the comprehensive school.

In addition to publicly funded schools, and in common with the rest of the USA, New York has a network of private institutions of learning. A significant part of the country's top universities are private. Also in other levels of education, the leading schools are as a general rule private, but in New York, as in other places, some of the publicly-maintained schools are also among the best in the region and even the country. The city-maintained and therefore free Stuyvesant High School in South Manhattan has been named the USA's high school of the year on several occasions.

The challenges facing the US public education system are considerably greater than those with which Finland has to contend. Each year, over half a million under-18s, who hardly speak the language and need a school place, arrive in the country. The children of many first-generation immigrants likewise have problems with the language and there is a great diversity of cultures. Indeed, it is amazing how the system can constantly absorb millions of new arrivals and prepare them for working life and educational services. Despite extensive immigration, there is an almost constant shortage of labour in the New York region.

The societal structure there is more diverse and multicultural than in Finland. Income differences are likewise greater, but I do not believe that relative to population New York with its 12 million inhabitants has more poor and homeless people than Finland. A mosaic-like culture and acceptance of diversity smoothes the way to different kinds of educational places as well. New York is one of the world's innovation concentrations. One central reason for this is the city's enormous educational capacity in all sectors and taking diversity into consideration.

What should be done to the comprehensive school to improve creativity?

First of all, the need and justification for special schools must be recognised, regardless of whether they are public or private. This must be implemented in such a way that the present good comprehensive school for all is retained, but in addition to it there is recognition of need for a considerably broader opportunity than currently exists to create separate schools for talented pupils, places where instruction corresponds better to the pupils' ability to embrace things. Since the State's funds are limited, the establishment of private and fee-paying schools in Finland on a significantly broader scale than at present must be accepted. With them taking care of a part of our children's compulsory education, the public comprehensive school will have more resources and art subjects can rise to the role in which they were when they were at their best. Correspondingly, schools where the pupils are able to embrace things faster

than average, will have more time also for art subjects. Likewise, those who have shown clear signs of talent at a young age can receive additional instruction in their field of talent.

I personally attended the senior secondary school in the 1970s. I completed the long course in mathematics, physics, chemistry and humanities and natural science subjects. My teaching programme included about 10 hours of drawing each month. This came about because the programme included two hours per week of either music or drawing. In addition, a pupil could optionally take two hours of creative subjects, which included also philosophy and psychology, each month. I chose drawing from these as well, and thus had a total of 10-11 hours of drawing lessons each month even thought I was doing the extended mathematics course in the senior secondary school. What was most important was that I had drawing lessons steadily throughout the time that I was studying. It acted not only as a breathing space from natural sciences and languages, but also as part of expression in changing life situations. The present system is periodic, which is detrimental for creative subjects. They must be made a constant part of learning throughout the year on all levels from kindergarten to senior secondary school.

Special schools would also have the effect that they would attract competent foreigners to Finland. A good reputation is already creating interest, which should be seized. A clean natural environment and food need to be complemented by good schools and health and cultural services in order for the creative class to be at all interested in a region. Of course, those things are, as already pointed out, not enough on their own, but without them no innovation concentration will come into being.

Universities and other third-level institutions

There is some structural problem associated with why Finland's success in comprehensive education dissipates in higher-level studies. Only one Finnish university, the University of Helsinki, is on the list of the world's hundred best. Even it is in the last place on the list and its ranking has been slipping every year. If this trend continues, there will be no Finnish university among the top hundred when the next survey is conducted. We do not know whether we are under-achieving at the top level or whether the Programme for International Student Assessment (PISA), in which our comprehensive school performs so well, somehow favours our system and gives a false picture of our actual level compared with our competitors.

Unfortunately, the skills that the comprehensive school imparts are not enough to get by with in the markets of the world, for which reason special attention must be paid to third-level education of competent persons. The present comprehensive school has produced nearly thirty age cohorts, about two million graduates. How this group will be able to develop the country is partly a mystery. The present situation is founded on two main factors: the age cohorts that experienced the war and took care of reconstruction as well as their children, the so-called large age cohorts. Those born before the war built our country's basic infrastructure, roads, means of communications, hos-

pitals and schools. They also created the foundation for the 1970s school reforms, which made their children more collective and more political, especially in the 1970s. The reform of the qualifications structure was to the highest degree part of a division of political power; the school councils in comprehensive schools and the third-level administrative reform shaped the teaching framework considerably. The share of administration and planning in the work of universities was accentuated. The earlier academic freedom disappeared and was replaced by a straitjacket of exams in which students' choices were reduced.

This change suited art subjects especially badly. The school belonging to the Art Academy of Finland, was the last private art school in Finland and came under the State administrative system in 1986, but continued to produce the vast majority of our country's prize-winning artists until the early 1990s. Since the age cohorts that graduated entirely from the Academy of Fine Arts did not enter our art life until later in the 1990s, its share of our country's top names has declined. This can be seen on especially the international art scene. Among the ten of our artists who have enjoyed the greatest international success, only a few received their basic education in the highest institution in this country.

It can be clearly seen in the visual arts sector how the status of third-level institutions has decline in recent decades at the same time as music and its higher teaching at the Sibelius Academy have succeeded well in producing international names. Measuring the importance of art is often difficult for contemporaries, but where a small culture is concerned a test of international standard may give a better assessment of what is currently valuable and what is perhaps not. Naturally, not everything can be measures by success abroad alone, but the fairly inbred situation that has persisted for decades often demands external calibration in order to reveal national mannerisms.

Instead of the present quantity-based thinking, attention must be paid to quality in vocational and university-level art teaching. Of most essential relevance is the relationship between student and teacher. Selection of persons for inclusion in both groups is decisive, as is ensuring that teaching groups are not too big. The ratio in successful art schools abroad may be 60 master's students for every 10-12 teachers and visiting lecturers. Teachers have flexible tasks and are well paid, and top names in the sector seek those jobs. Contracts are generally made for at most a year, leaving teachers free to continue their work as artists and not feel shackled by their teaching work. The idea of long-term professorial tenure is avoided in the best art schools, although in some of them also top-level teachers may remain for a long time.

The schools tailor their programmes to make them suitable for top-level teachers and flexible. In Finland it is the highest official bodies that decide on exam contents and the qualifications required of teachers. Teachers are moulded to suit the system rather than the other way round. When an international school has acquired good teachers and a reputation, it can choose its pupils according to strict criteria. This creates a positive treadmill, where the results attract better applicants to both teach and study, and this in turn improves results even further.

University of Innovation

In conjunction with this project, a 2-3-year master's-level art institute specifically specialising in internationalism should be established. This institution would teach the same subjects as the Fine Arts Academy of Finland as well as some being taught by the University of Art and Design Helsinki (cinema, video, computer art), but the main emphasis in teaching would be on relating the student's work to the international art scene. The institution could benefit where marketing and technique are concerned from the other universities linked to the totality, but its exam should be as flexible as possible.

The art institute should be as administratively independent as possible, students should be able to have a significant input into the areas of emphasis in teaching, choices of teachers and principals and so on. Responsibility for one's own learning should not be based only on exam requirements handed down from above. Higher-level teaching of art works when students are motivated. This requires that special resources be put into choosing students. Mistakes made in the selection process are difficult to correct during study. Special attention must likewise be paid to choosing teachers. Engaging them must be made easy and flexible so that also a talent in the middle of a significant artistic career can do teaching work. Multi-year tenures with their formal features are not always a guarantee that the best material will apply for teaching posts. Many foreign teachers are excluded from institutions by the formal requirements of the State administrative system.

In several important art schools in various parts of the world there is a direct linkage between the students' choice of subjects and the engagement of art teachers. Motivated students want the best. Most have had to work hard to collect funds for their studies, others have a valuable scholarship, and no one wants to throw money away to listen to the lessons of some mediocre teacher in sheltered employment. Postgraduate students know better what they want and a school of a good standard engages the teachers that the students want. An art school's success depends on how well it succeeds in its choices of students and teachers. The rest of the framework clicks into place only after this.

In Finnish universities, exam standards have traditionally been set by high authorities, teachers' competence criteria are likewise stipulated from above following the same principles and their salaries are set in accordance with official regulations. This system does not produce the best result in art schools. What is needed in them is to be able to create an atmosphere that is founded on trust and in which teacher and student motivatedly do the same work, only with different perspectives and experience. This presupposes that the school enjoys an independence that has not existed in Finland since the reforms of exams and the school administrative system.

From the shelter of a foundation, the University of Innovation could offer an international special unit sufficient independence if it wanted to seize this opportunity. However, this would presuppose a revision of some of the basic ideas that currently apply to certain universities.

Summary of measures to improve education and support creativity

- Creative subjects must be made a part of annual teaching throughout the comprehensive school, from the lower level to senior secondary.
- Assessment of creative subjects, exhibition and performance opportunities must be considerably increased, likewise competitions; the individual must be able to be seen and succeed.
- Special schools for the talented must be established by society as a whole or else by permitting considerably more private schools.
- The above will support also efforts to attract more talents to Finland.
- More attention must be paid in art institutes to the quality and quantity of teaching as well as to the selection of students and teachers. This presupposes the flexibility in their administration that earlier existed. The teacher-student relationship must be made a central part of the institutions' activities rather than administration and other framework considerations.
- An art institute that is as independent as possible and specialises in international art should be established in linkage with the University of Innovation. The special concentration in its teaching should be on relating our art to world art and preparing students for international arenas.
- International culture curators must finally be trained and posted abroad.

Other measures

Funding for Finnish culture is too narrowly based. Artists' opportunities to live from their work depend almost entirely on public money with perhaps the exception of design, architecture and light music. The visual arts, dance, literature, theatre and cinema are mainly dependent on national subsidies.

The State must support in every possible way:

- consumer demand for culture
- private-public partnership in funding culture

The impediments that taxation puts in the way of private demand for art must be removed. For example, the 22% VAT on brokering art is far too high. Young families should be encouraged to consume art by granting State loans at subsidised interest rates to help them acquire works of art when they establish a household. Art producers and brokers should be given their own corporate subsidies and tax breaks to help mediation in all sectors. The tax deductibility granted to companies that acquire art and purchase cultural services should be broadened and made easier to obtain.

Private-public partnership in the production of cultural services must be supported in every way. Support for events must be fully tax-deductible, likewise donations to cultural institutions and the foundations that support them. Full tax-deductibility without an upper limit must be granted to both companies and foundations and private indi-

viduals. It should encompass donations of both money and property, such as art collections. Naturally, a prerequisite for deductibility would be that an art institution/ museum has accepted the items for inclusion in its collection.

It must also be possible to make the use of public funds in culture more efficient within the State administration. The practice that has long prevailed has channelled a significant part of grants and targeted allocations on social grounds. The division of labour between the Ministry of Social Affairs and Health and the Ministry of Education in this matter must be clarified. The role of also other ministries in relation to cultural services, for example in matters of corporate subsidies and internationalisation, likewise needs clarification. The main rule should be that the Ministry of Social Affairs and Health takes care of artists' social security, pension matters, occupational health and comparable things. .

The Ministry of Education concentrates on support that is significant purely in the artistic and professional sense, from education to internationalisation. The present practice comprises grants, public procurements and teaching jobs as agreed at the annual cultural bargaining table, where support is shared out in a socially correct manner to all as evenly as possible, often at the expense of professionally important projects.

Because a considerable share of artists are entrepreneurs, it should be possible to take care of their pensions, start-up capital, investment grants, export subsidies and similar matters through the parts of the State administration that support entrepreneurship. Since creative fields are labour-intensive and in many ways different from goods production, a system of business supports that would help especially entrepreneurs seeking to internationalise should be created for the sector.

Internationalisation

Internationalisation affects the entire sector in many ways:

- Export income will continue to be vitally important for the economy.
- Increasing and broadening the base of funding for culture.
- Increasing the so-called critical mass, exchanges of thoughts and ideas.
- Tolerance and multiculturalism increase.
- "Calibration" of cultural meters to reveal internal mannerisms.
- Improving skill in the sector; international competition refines.
- Attracting competent foreigners to Finland.

So far, a considerable part of what our culture and art have achieved internationally has come about as a result of the career of the artist in question and without the public sector having had a significant role in the matter. Especially in the Western cultural metropolises, export operations that are strongly national and public can easily prove ineffectual. In these, openly public measures are regarded as lessening artistic value, as subsidies for culture that would otherwise not be good enough for a metropolis.

Success is not at all directly comparable to the number of Finland projects and Finland Houses in these cities. In many ways, a lack of knowledge about the bodies within which decisions that determine an artist's fate in the world are made prevails in the public sector.

Administration becomes enthusiastic about methods that make sense from its own perspective, such as creating various art export organisations within the apparatus of officialdom in Finland or Finland institutes abroad. These could be important if we had a considerable number of experienced international producers, managers, curators, and so on in Finland.

However, we have nobody permanently performing export tasks who would have spent 5-10 years working in some or other important art centre other than as a part of some or other Finnish public organisation. This amount of time working with an international institute usually develops someone into a person with competence relating to the culture in question. Some things have certainly been achieved with institutes, but with respect to the top talents that give the Finnish identity visibility, the way to the metropolises of art has followed another route. Institutes have an important task in relation to such things as interaction in the fields of literature and science, but the performing and visual arts need something else.

As long ago as the early 1990s, I was asked to draft a memorandum for both the Foreign Ministry person in charge of cultural affairs in New York and the Ministry of Education's art department. In it, I stressed the importance of creating international posts primarily in destination countries and launching our own training programmes for curators. As long as we do not have any more than a handful of people of our own with expertise in relation to the international scene, we must seek to use expertise from the target countries. Unfortunately, the emphasis in activities has continued to be on either establishing various kinds of Finland centres or creating Finnish administrative bodies for export work. There have been a gratifying number of projects through both the Ministry of Education and the Foreign Ministry, and some of them have achieved good results, but the overall effectiveness of the efforts relative to the resources devoted to them can be called into question. Especially given that direct efforts by artists have achieved good results at the same time.

Here are some examples of how a public export organisation for the visual arts could be built in the 21st century:

- To replace the present Frame (Finnish Fund for Art Exchange) and the Ministry of Education's export-promotion organisation, a small Art Export Centre would be established. It could work under the auspices of, for example, the Finnish National Gallery.
- An office with 2-3 staff in Helsinki would coordinate the curators working abroad, channel public funds to them and maintain a materials centre.
- In addition to Helsinki, small permanent offices could be opened in Berlin and New York to assist the curators working in Europe and America. In every other major European art country there would be one main curator and, depending on the amount of activities, temporary assistants. They would be mobile agents without any "Finland House".

- A curator's task would be to establish contacts between Finnish artists and local galleries, museums, collections and critics. Curators would not themselves arrange exhibitions, but instead assist institutions in the target country with respect to Finns.

The curators would be stationed as follows:

1) The Nordic countries, the Baltic States, St. Petersburg: 1 curator
2) Berlin 1 curator, Germany, Belgium and the Netherlands 1 curator and Eastern Europe: 1 curator
3) London 1 curator
4) Paris 1 curator
5) Madrid 1 curator
6) Milan, Austria, Switzerland, Greece, 1 curator
7) New York 1 curator + 1 assistant
8) Los Angeles, South America, 1 curator
9) Shanghai 1 curator
10) Tokyo 1 curator

These 12 independent agents abroad plus 2-3 staff in central administration in Finland would be funded in part by eliminating tasks in Finland's present equivalent central administration and cultural institutes in various countries / Foreign Ministry posts and reassigning them directly to the target countries. The persons engaged as curators must be professionals in their field, Finnish or foreign nationals, who would invoice the Art Export Centre directly for their expenses as per contract. That way, heavy overheads in the target countries would be avoided. The offices in Berlin and New York would be kept as small as possible.

Public administration must seek new ways of funding cultural services

Directing taxation of foundations and companies to support art is one way, but it would be advisable for the State to consider also an active policy to increase private fundraising. In Britain, for example, there is the State-supported Art and Business project. A projec t. A foundation collects funds in collaboration with art and business and the project is able to pay out over •100 million each year in grants. The State contributes •6 million towards administrative costs. Thus a benefit of over •90 million a year is achieved.

A policy that refreshes general entrepreneurship and small-scale business can also support creative sectors. The present concentrated and ponderous art administration is expensive with its institutions. A considerable part of it could be dismantled and outsourced to producers, from which the public administration would order the necessary services. That would also broaden the funding base and diversify the sector.

An understanding of the sector's special character is vital in export projects. The same methods as in exporting goods do not work. Out in the world, professional credibility has to be achieved, and this presupposes long experience of the target country

and its cultural life. Political public administration is rarely able to familiarise itself sufficiently with the sector. That is why export projects must be entrusted to professionals and directly supervised by art institutions rather than a ministry.

Foreign professionals must be used in export projects if none from the sector in question can be found at home. Relying on incompetent foreign consultants has caused failure in some of these projects in the past. In the future, the Art Export Centre should check the status of the representative in the target country with persons from the sector in question who have gained international prominence, until we have ourselves trained and obtained experienced personnel for the sector. We have the expertise in music, but in many other sectors our contact with the world top level is tenuous. Until our own training work produces results, we must avail ourselves of every fragment of knowledge and experience that is available.

Include creativity evaluation in decision making

In the same way as the environmental impacts of decisions are assessed in various situations, the effects that decisions have on creativity should be evaluated in key sectors.

One key sector is education, with respect to which new models have been outlined earlier in this report. But matters that are of essential relevance from the perspective of creativity are associated also with housing and physical planning of communities. The structure of the economy, taxation and many other economic decisions influence the development of creative sectors. Public administration has had a central role with respect to creative jobs, and its operational principles should be especially rationalised to make them more flexible and open. All in all, it would be justified to require that several public-sector measures include an assessment of their effects on the creation and preservation of creative jobs.

Sources

Markku Wilenius: Luovaan talouteen, Edita, 2004
Richard Florida: The Rise of the Creative Class, Basic books, 2002
Jena Economics Research: The share of creative class of population in North Europe, 2007
Aku Alanen: Tieto ja trendit, 7/06
Risto Ruohonen: Taiteen keskustoimikunta julkaisuja 2004

The development of cities in the network society: is general culture the smart city's foundation?

Markku Sotarauta & Juha Kostiainen

1 Introduction

This report is one of the preliminary studies included in the Committee for the Future's project to examine the development of metropolises and general culture. The way in which we have interpreted the nature of a preliminary study is that it permits us to ponder and develop a variety of ideas on the basis of relatively scattered material. Thus we do not present precise answers to well-formulated questions, but instead rake out new questions from the configuration that metropolitan development and general culture form; the kinds of string ends that, if we followed them, might lead us to something genuinely new. As the basis for our deliberations we use both Finnish and international regional research seasoned with our own views and openings. We try in any event to separate as clearly as possible our own views, which are still incipient, from those matters for which evidence and research results already exist.

The general frame of reference for the examination comprises the knowledge economy and the network society. The view that came vigorously to the fore in the 1990s that the developing and the development of urban regions are based on knowledge, competence and innovativeness as well as on good local cooperation and global networks is still of topical relevance. The key role of innovativeness and innovation in the global economy has been generally acknowledged and innovation policy has assumed a place high on the societal development agenda. Creative, innovative and intelligent cities, whatever that may mean in each individual case, are being developed in every part of the world. Although the bases and dynamics of the knowledge society are still in many respects controversial and some degree of innovation inflation is raising its head, researchers are more or less unanimous about the importance of knowledge as a producer of economic value added. According to Benneworth (2004), what researchers disagree on is mainly how the creation and application of new knowledge produce value added and a competitive advantage in regional development (Temple 1998; Armstrong 2001).

The special focus of our deliberation in this article is the role that general culture plays in the long-term development of city regions. First we present a brief recap of the nature and dominant features of the network society. Then we seek the content of that difficult-to-define concept general culture, after which we proceed to examining the development of cities and especially metropolises. With the aid of a few selected comparative studies and reports, we create a review of how cities succeed, as measured by various criteria, on the global level. Because different ranking lists create quite a pale picture of cities' development, we highlight the significance of operational culture by presenting a condensed picture of the cultural dimensions of the competence cluster that has become the model for all others, namely Silicon Valley. In addition, we remind our readers that the development of cities is a long process and that changes do not happen quickly on the city level. A good example of this is another star of our times, Boston, which has not always been in the good shape that it is now.

In Chapter 8 we put forward the assumption that cities capable of strategic adaptation will be the success stories of the future and that precisely for this reason strengthening a capacity for self-renewal is of accentuated importance in development activities. A second general assumption of ours is that cities' capacity for self-renewal quite credibly explains their development over the long term. We condense our view of self-renewing cities with the concept of the smart city. Smart cities are competitive and competitive cities are capable of putting in place good prerequisites for their citizens' wellbeing. The concept "smart city" itself should not be taken too seriously. There are already creative, learning and intelligent cities in the world and we thought there would be room in the group for a few smart ones as well.

When we use the word "city" in this report, what we mean in practice is an urban region. The practice in Finland is to examine cities as defined by their administrative borders, but we see a city as being a functional rather than an administrative totality. Viewed from this perspective, Finnish cities consist of several self-governing units, which are called municipalities. By "metropolis" we mean in general large, multi-constituent urban regions.

2 Quick recap of the nature of the network society

The way people relate to their time and place is a culture-bound and dynamic phenomenon. It has changed and is changing all the time. Different societies contain conceptions of time and space that differ from each other and feature centrally in building social order and in the development of societies. (Paasi 1993, 39.) A globalising and networking economy has challenged different conceptions of time and space. Our perception of development, the way we adjust our own actions to change, time and place, are altering. One of the most central forces altering our perception of development is the emergence of the "phantom state", which international capital has created. (Thrift 1995.)

The phantom state is not located in any particular place and bounded by geographical borders, but is nomadic in character. It has no regular place that it can call its

"own". There are several places in global cities where the phantom state can spend a temporary sojourn. Constant mobility has its advantages. The phantom state rapidly gravitates to wherever the maximum benefit is to be gained. States that control their territories and may regulate what happens within their borders are a threat to the phantom state. (Thrift 1995.) In practice, however, this threat is diminishing, because states and regions are increasingly dependent on the international economy and therefore they must adjust with greater and greater sensitivity to the currents of the global economy. It lies in their interests to entice the phantom state inside their borders, not keep it out. The belief is that it brings capital and prosperity with it.

The phantom state is made up of international capital and it is technological development that has made it possible. It lives and moves in information networks. Technological infrastructure defines a new conception of place in quite the same way as railways and national markets determined the significance of space for actors in the industrial society. In this society, borders were important. Borders between states, municipalities, regions, institutions, sectors and organisations defined the actors' place and status. Now many borders that were earlier considered certain have been obscured and activities are increasingly often organised around social, economic and technological networks or, as Castells points out, what is nowadays at the core of societal development is a variety of flows of capital, information and technology. In addition, images, symbols and interactions between organisations flow through spaces and communities. By "flows" Castells means purposeful, repeated and programmable exchange and interaction between different actors who wield influence in economic, political and symbolic structures and are spatially dispersed. Flows are not just the constituent parts and elements used to build society. They are something more. They dominate our economic, political and symbolic lives. (Castells 1996, 411-413.)

A globalising economy and the flows of which it is made up not only blur borders, but also substantially alter the rhythm of events; the globalised world has become hyperactive. (Thrift 1995). The relationship between time and place has shrunk. We cannot understand the development of Finnish cities without understanding what nodes of global and national flows and networks they are (or aren't). With the importance of cities being founded on global flows, human capital and general culture (as we assume in this report), networks no longer feature a permanent hierarchy, but rather a constantly changing evolution of relative importances. In some cases, a city's relative status can dwindle if a role that is useful to a network can not be found for it. This can lead to a relatively rapid structural change.

Message I – Although the importance of global flows is accentuated and companies operate in an increasingly global environment, also the regional and local perspective is strengthening at the same time. With the logic of the global economy being based on flows, internal interaction and communication are accentuated in the creation of the kind of milieu in which it is possible to divert the flows through one's own area. Social relationships, the region's internal communicative and strategic capacity as well as socio-political cooperation are more important than they earlier were. Thus what is involved in practice is how local and regional actors and the networks they form can

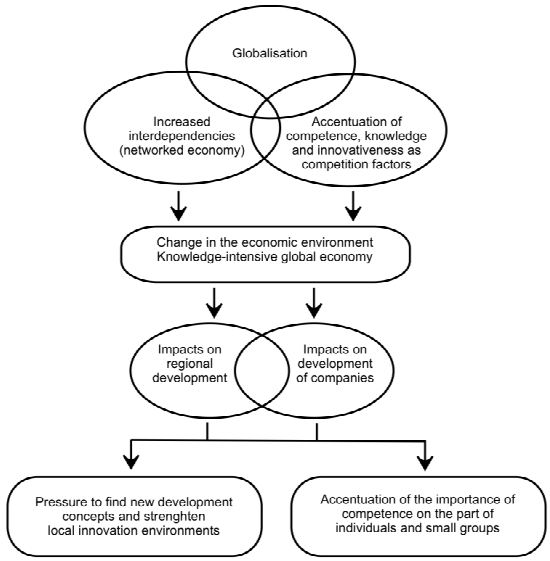


Figure 1. Development of urban regions and relationships between general changes in society and corporate development (adapting Kolehmainen 2001; see also Sotarauta et al. 2007).

link into global innovation and production networks without destroying their own characteristic features and nature.

We crystallise the nature of the network society's economic activity in the concept knowledge economy and rely on especially Phil Cooke's definition. In the knowledge economy, according to him, a) knowledge quickly becomes out of date and new knowledge is constantly challenging the old, b) scientific knowledge is respected and permeates society faster than ever before, and c) what is of central importance in the knowledge economy is to use existing knowledge so that new knowledge can be created. (Cooke 2002.)

Thus we continue to believe that economic activity is organised as networks, that cities should be seen as nodal points in global (and also national) networks and flows and that knowledge and competence have assumed a place at the core of competitiveness. The essence of the network society, its good and bad aspects, can be summed up in the following courses of development:

- Mobility of capital and money markets has globalised (deregulation of financial markets, international capital movements, corporate takeovers).
- Markets and competition strategies have globalised (global integration of business activities, global corporate networks, strategic alliances).
- Technological development, research and development as well as knowledge acquisition have globalised (development of information technology and global information networks have united people and organisations).

- Lifestyles and consumption habits have globalised and become more diversified (media influences, the "culture industry" and "cultural commodities", regulation of international trade in cultural commodities, building individual identities through consumption).
- New instruments for regulation and international management of the economy have developed (changing tasks of national parliaments and governments; emergence and development of new instruments of global and regional governance; new forms of political integration and exercise of influence).
- People's ways of thinking are becoming more uniform and at the same time a global consciousness is coming into being (social and cultural processes, "one shared world"; global sub-cultures and movements; world citizenship).
- Environmental problems and awareness of them have globalised (climate change, thinning of the stratospheric ozone layer, dwindling biodiversity).

(Väyrynen 1998; Schienstock 1999; Mannermaa 1998; Kolehmainen 2001; Sotarauta et al. 2003; Sotarauta et al. 2007).

Our point of departure is that the network society presupposes the following abilities, that urban regions should have following capabilities and that an urban region should support the emergence and development of capabilities like these:

- Speed – the ability to react swiftly and anticipate events.
- Conceptualisation and significances – the ability to conceptualise new phenomena, find their significances in one's own actions as well as the ability to interpret abstract trends of development.
- Links – the ability to network and take care of partnership relations.
- Immateriality – the ability to create economic value added from services and experiences.
- Mental images – the ability to understand reality in a field of many kinds of interpretations.
- Technology – the ability to apply new technology in one's own operations.
- Ambiguity – the ability to put complicated and open situations to use as a source of new creative tensions.

What is essential about the above-listed capabilities is that they accentuate clearly more strongly than earlier also the ability of individuals and communities to act strategically. Local learning processes and a strong link to global networks culminate in the individual's own motivation to get rich, develop himself, become involved in interesting processes, solve social and ecological problems, and so on, whatever is important to someone. Thus the urban region must offer many kinds of opportunities to many kinds of people and companies. Our assumption is that propitious development of urban regions presupposes the existence, systematic analysis and development of the above-mentioned generic and collective abilities. Generic abilities should not be examined as administrative and structural questions; instead, what is essential is to

recognise that they are built and manifest themselves in cooperation and interaction between individuals. Looked at from the perspective of the individual, general abilities show themselves as, on the one hand, general culture and, on the other, knowledge and skill in working life. In the network society, coping presupposes the development of both collective and individual-level capabilities.

Message II – The network society is founded more strongly than the welfare society on the capabilities of individuals and various communities. General culture both collectively and on the level of individuals is the soil on which the network society transforms itself into a competence-based welfare society.

The welfare society's symmetry and the network society's asymmetry

The dominant aim in building the welfare state was to achieve symmetricity. This was reflected in an ideology of expanding and developing the public sector's welfare tasks on the strength of economic growth. Also associated with the welfare task was an ideology of balanced social and economic development that aspired to symmetricity between regions. In the background to the management of systems, in turn, was an ideology of developing representative and participatory democracy. The common denominator for these ideologies was a kind of state rationality of objectives. (Heiskanen 1977, 46.) The journey towards the welfare state was equipped with a relatively congruent goal.

The economic recession in the 1990s demonstrated very concretely how dependent on economic growth the welfare state is. The ideology of expanding and developing the public sector's welfare tasks as well as the ideology of regionally balanced social and economic development have become foci of reassessment. At the same time, the State's goal-centred rationality is disintegrating and in its place an actor-centred rationality has emerged, as is seen in a decentralisation of power and accentuation of unit- and individual-specific result thinking. At the same time, symmetricity has begun breaking down. If the intention is to play on the terms of global flows (as a small country should) and link into them, the ideal of symmetricity crumbles, because one single global flow that the totality called Finland could join as one totality does not exist. By contrast, there are several global flows that overlap and dovetail with each other. In Finland, the many interests and goals of many actors are linked to many different flows.

When symmetricity was being created, the machinery of administration that was built was centrally coordinated and sectorised. Objectives were assumed to be clear or else it was believed that they could be demarcated and clarified in the preparatory process preceding decision making. In planning, attention was focused on the process in which the decision maker, using consultation, mathematical models, reports, studies and so on, chose the best possible means so that a precisely defined problem could be solved in the best possible way.

The belief was that resources would grow continuously, for which reason political attention was focused mainly on the distribution of new resources. Existing structures

and functions were hardly called into question at all. The principal instruments of influence were guidance, control and regulation. By contrast, the basic thinking in networks emphasises interaction and self-renewability and thus the network society transforms the character of hierarchies and adjusts established power relations to a new environment (although hierarchies do exist in networks).

Networks are not *a priori* based on equality. The aim of symmetricity is not intrinsic to them. Networks have their own formal and informal rules, which are defined, on the one hand, by the network's members and, on the other, by those remaining outside it. For example, the character and composition of networks can be defined by channelling the flow of information. At the same time, relations between the network members can be re-created and resources that are important for the games conducted within the networks can be assigned in accordance with the interests that hold power in the networks. Thus many games, on the one hand, are in a constant search of a new equilibrium and, on the other, preserve the old one between such key resources as power, status, legality, knowledge, information and money. The sharing of resources, in turn, determines the framework and configurations for coming games and configurations and thus determines the composition of networks. (Klijn et al.1995, 439.) Compared with representative democracy, the problem of networks is that with their aid it is easier to draw a line between who is in games or excluded from them, without a party outside the network even being able to form a proper picture of the basis on which the line is drawn. Compared with a hierarchic system, a typical feature of networks is that operational methods, relations of power and the rules of the game are constantly changing. Various networks provide an opportunity to add flexibility to the functions of local administration, but at the same time new forms of democracy become the focus of a search.

Networks create asymmetricity. Using asymmetricity as a force for development, balancing its advantages and disadvantages, becomes one of the culmination points of cities' future development. If Finnish cities want to divert global flows through their own areas, also local networks have to function well. If they do not, if various borders and/or old disputes between organisations and regions continually bog down progress, what will happen time after time is that nothing more than petty internal games are being played. It then becomes more difficult to grasp various flows and networks, and functions become frozen in past development and local bottlenecks. What is involved in the competitiveness of cities is also new ways of organising and acting.

3 Thoughts on the concept of general culture

General culture has traditionally been difficult to define as a concept and its content has changed over time. It is a value concept in nature, which means that the definitions, interpretations and contents associated with it at any given time reflect the currently dominant values. To serve as a background to our examination of urban development, we shall seek a general view of general culture that suits the network society.

The Finnish philosopher and academician Georg Henrik von Wright approaches culture through a humanistic ideal of perfection, in which those who recognise that truth as an absolute value takes precedence over all authority are regarded as cultured. In his view, culture is above all a search for truth:

> *Seeking truth – both in expressions of art and in the information of science and insights of philosophy – means development of our humanity, an endeavour led by the greatest of our family that each and every one of us should follow to the best of our ability. (von Wright,2007, 17.)*

In von Wright's thinking, culture is a totality, undivided. Knowledge and skills become culture only when they foster in all of a person's thinking and actions the broadness of view, objectivity and sense of right and wrong that spring from the demand of truth.(von Wright 2007, 16-17.) He sees education as being a person's intellectual growth and search for truth, as a process that transcends different individual sectors of knowledge and skill. In fact, the idea of growth and becoming something has traditionally been associated with the concept of education. This is reflected also in the German word for education, Bildung, and the Swedish word bildning. The idea has been represented in the Finnish intellectual tradition by the philosophers Sven Krohn (1981, 1989) when he spoke of people developing towards their real selves, i.e. the core person, and Erik Ahlman (1982) with his thoughts about people's real selves. The philosopher Eero Ojanen (2008), in turn, says that we are at the core of culture when we speak of a culture of the heart. For him, culture of the heart is an attitude. It is a quiet, dignified, life-sustaining attitude that is humble, but aware of its own worth.

According to von Wright, the concentration in education should be on creating the strongest possible learned foundation, on which more specific skills and knowledge are built. In his view, most inputs in education should be into key (formal) subjects, such as mathematics and mother tongue, rather than constantly expanding curricula. On the basis of these key subjects it is possible to learn the necessary additional knowledge in a context of specialisation. (von Wright 2007, 103.) What this requires of an individual is a strong ability to learn to learn, i.e. the ability to relate new matters to what has already been learned and thereby form rational totalities. General culture is associated with learning, a sense of community, people's relationship with nature, cultural understanding, values and society.

The challenge that the network society poses to individuals is associated in an essential way with an early 21st-century trend that emphasised individuality and the uniqueness of an individual life. The boldest postmodern theorists have claimed that we are constantly assembling our self. Zygmunt Bauman writes about people's identity in *Liquid Modernity* and argues that it flows in the manner of a fluid. In his view, seeking an identity is a constant struggle to stem or slow a flow, to rigidify the liquid, give shape to the shapeless... (Bauman 2002, 94). To Bauman, identities appear solid only in flashes (2002, 103). The same lines of thinking are followed by Stuart Hall (1999), according to whom identity is in constant flux, a movable feast. The claim by the preachers of the experience economy, Pine and Gilmore (1999) that in the experi-

ence economy the vendor is the arranger and the purchaser the guest, just as it should be at a party, accords well with this view. Whether changing identities should, therefore, be aspired to or not, their permanence has been challenged.

The difference between the postmodern thinkers and Aristotle is striking. Also Aristotle thought of change, but for him it was associated with realisation in the best possible way of the humane properties that are part of a person's essential nature, something that gives a good life its central content. He emphasised also that a person is a political animal and that a good life includes participating in one's own community's political decision making. In Aristotle's day, the community was the Greek city (polis) and the view was that it was specifically in the polis that a good life could be realised. It would be good to remember Aristotle's fundamental insight regarding the communitarian nature of people even in the "fluid era of the movable feast" that emphasises individuality. Globalisation has not changed this, even if communities do come into being in partly a different way. More and more, people are members of several communities and the relative importance of communities that are tied to some or other place has declined alongside communities that are based on hobbies, work and/or a shared view of the world.

Message III – The challenge of the network society culminates in one of its dimensions in new definitions of the relationship between new identities and people's longing for a sense of community. The challenge is greatest in large urban regions, where many kinds of lifestyles and communities meet each other.

Belonging to and being active in a community presupposes social skills; responsibility, taking others into consideration, an ability to act in the cross-currents of different values and operational cultures and at the same time a capacity for empathy. An essential aspect of the general culture of the network society is a conscious endeavour to understand different cultures as well as their characteristic features and operational models. This is not just associated with the need to understand other countries' cultures that internationalisation has brought, but also with a need to respect different operational cultures within the same country. The demand that the cultures of others be respected does not, however, mean that there must be a direct readiness to accept everything done or said by a representative of another culture. In the network society, educated persons strive to understand also those with whom they *a priori* disagree and are prepared to engage in a dialogue that unites different perspectives and, on the basis of that dialogue, are also prepared to change their views. Culture includes yielding to discussion and through discussion to learning.

The time of great narratives is past, or so it has been claimed (Kostiainen et al. 2003). Relatively speaking, religions and ideologies have lost their position and people have to make fundamental choices without strong sets of general norms that guide and create a sense of security. In an unclear and often murky world that emphasises individuals, the importance of values is accentuated. At the same time, von Wright's idea of searching for truth may be the factor that prevents our identities from becoming too

fluid. A movable feast without fixed reference points can lead to both individuals and societies becoming even too "fluid".

One important sub-sector of general culture is value competence. This means the ability to understand, interpret and create values. Values, in turn, create a foundation on which to orient our own life in the networks and mosaics of society. (Kostiainen et al. 2003, 87). Although great narratives are dwindling, it may be that in the rapidly expanding awareness of global environmental problems a new great tale may be coming into being, along with a world of values that unites peoples and cultures. Our efforts to dominate and exploit nature have caused such major problems that they can no longer be limited locally; instead, they unite people across borders. Climate change is a consequence of the network society and at the same time finding solutions calls for a stronger global network society. In any case, general culture includes an understanding of people's status in nature and respect for all life as well as an effort to adapt one's own actions to make them compatible with larger societal and ecological totalities. In the final analysis, general culture and intellectual growth are something that springs from people themselves and are not extraneously determined like working life skills in the network society.

Message IV – With the aid of a strong general culture, crystallised values and value competence, it is possible to orient oneself in murky and difficult circumstances.

We shall now proceed to an examination of the development of cities, especially metropolises. In our view, a metropolis is by definition a place where many kinds of cultures and differences meet. A metropolis is home to many kinds of peoples and companies, many kinds of cultures as well as different kinds of residential districts and services. It is difficult to imagine a homogeneous metropolis. By contrast, it is easy to conjure up an image of a metropolis seething with diversity. What a metropolis demands of actors is an ability to live and work together in spite of differences between them. If this succeeds, the metropolis has the prerequisites for flourishing, but if it disintegrates into a battlefield for conflicts between different worlds, the metropolis can become a constellation of closed communities that are utterly alien to each other.

Although both of us have written about, researched and developed themes associated with competitiveness of cities, we recognise nevertheless that competition and innovation policies can easily lead under the pressure of competition to short-term measures that bounce back and forth. At the core of cities' development is, according to our interpretation, the ability of urban regions to renew themselves constantly and against a long time frame. Thus we assume that an urban region that re-invents itself at regular intervals will be successful in the future. At the same time, an attractive and interesting urban region offers people opportunities and prerequisites for cultural pursuits and education. Because people's needs and starting points are very different, the diversity of opportunities becomes the guiding idea. In the following chapters we examine the fundamental factors of a vital urban region a degree more precisely. We are acutely aware that the comparisons we draw from are not completely in accord with our conceptual foundation or with each other. Since nothing better is available,

our objective is to create a review of fundamental questions of urban development and outline a general picture of the status of Finnish cities and especially the Helsinki region in an international environment.

Assumption – A metropolis is a totality whose strength is founded on diversity, asymmetricity and dynamics that springs from below. General culture and an proactive development policy are the strengths and prerequisites that keep the totality together and orient development in a way that serves the totality.

4 The metropolis – competitive, learning, creative ... perfect?

In the beginning of the 21st century the development of urban regions has been dominated by a frantic and almost obsessive need to find new innovative or at least seemingly innovative development concepts. All over the world, developers of urban regions have been hunting for new slogans that would bring a new direction to their cities and/or with the aid of which it would be possible to get their own cities to seem more dynamic and modern than they actually are. At times it is difficult to distinguish between genuinely new development work and running after and gimmickry with new words. Whichever way it is, in the past 15-20 years we have been able to witness how a rapid flow of concepts has run through practical development work and research. In the background to the accelerated development of new models and strategies is intensified competition between cities. Both companies and people are looking at a larger geographical area than in the past as they seek living and work environments that suit them. And if the question still being asked as recently as the 1990s was what cities were actually competing for, the answer in the 21st century is already clear: cities are competing for the material and human resources (competent people, money, attention, companies...) that are mobile on the global and national levels. City fathers and mothers have embraced the idea that, in order to be able to preserve or develop their cities' position in the global economy, their competitiveness must be analysed and consciously strengthened, because competent labour and corporate investments tend to gravitate to competitive urban regions.

Emphasising the role of competition and regions in economic development led in the 1990s to soft (dynamic) elements being elevated to prominence alongside hard (structural) ones. Indeed, the past twenty years have seen quite a lot of writing about how the competitiveness of urban and other regions is based on interaction, learning and creativity, and how urban regions are nodal points in the networks and flows of the knowledge economy, reserves of knowledge, competence and learning. (Castells 1989; Florida 1995; Lundvall 1992, Knight 1995; Kostiainen 2002). Learning and innovations have been seen in several studies as the most important dynamic elements in the competitiveness of urban regions (e.g. Linnamaa 2004; Kostiainen 2002; Turok 2003; Boschma 2004; Simmie 2001). This research tendency gained extra momentum when the learning region and the mass production region were equated with each other both in practical experiences and in research. Successful regions began in the

Table 1. Basic features of mass production and learning regions (Florida 1995)

	Mass production region	**Learning region**
Basis of competitiveness	Comparative advantage based on: a) natural resources; b) physical labour	Sustainable advantage based on: knowledge creation
Production system	Mass production: a) physical labour as source of value; b) separation of innovation and production	Knowledge-based production: a) continous creation; b) knowledge as source of value; c) synthesis of innovation and production
Manufacturing infrastructure	Arm's length supplier relations	Firm networks and supplier systems as sources of innovation
Human infrastructure	a) Low-skill low-cost labour; b) Taylorist work force; c) Taylorist education and training	a) Knowledge workers; b) continuous improvement of human resources; c) continuous education and training
Physical and communication infrastructure	Domestically oriented physical infrastructure	a) Globally oriented physical and communication infrastructure; b) electronic data exchange
Industrial governance system	a) Adversarial relationships; b) Command and control regulatory framework	a) Mutually dependent relationships; b) network organization; c) flexible regulatory framework

1990s to appear increasingly often to be capable of learning. In the 21st century, the classification devised by Richard Florida, who gained world fame with his "creative class" studies, well illustrates the change that has happened in many cities. With the aid of the learning region and/or city concept, new features that have risen or are rising to the core of competitiveness are analysed and presented.

Learning and knowledge being concentrated in cities is, of course, by no means a new phenomenon. Cities have been the main concentration of knowledge and competence in their own time ever since they first came into being (Hall 1998). Sometimes it is a university that is at the core around which the agglomeration developed, sometimes economic clusters and/or company networks, city services or knowledge and competence concentrated in large companies. Hall says that when people congregate in cities, they are simply forced to be innovative in order to guarantee the basic prerequisites for life in new circumstances. He emphasises also that it is possible to see creativity in both art and culture and technological innovations. These factors are convergent as time goes by. What is interesting in Hall's historical analysis is that, in addition to immigration, institutions of knowledge and competence and intensive interaction, he sees marginal groups as key factors in cities' innovativeness.

In this context, there is no reason and perhaps no opportunity, either, to begin wading comprehensively through the research literature relating to cities' innovativeness. Instead, as the background to our examination of competitiveness, we shall take Isaksen and Wiig Aslesen's classification, which describes fairly well on a general level how cities have positioned themselves as innovation centres

Table 2. Cities as centres of innovation - three main research orientations (Isaksen & Wiig Aslesen, 2001, 873)

Theoretical approach	**Main explanation of the role of large cities as innovation centres**
Cities as first receivers of 'global' knowledge	Large cities are important nodes of information. The largest cities in a nation then often first seize 'global' innovations that have occurred in more urbanized and highly industrialized areas, and the innovations are reworked and produced first in the largest cities.
Cities as breeding-grounds for innovation	Large cities stimulate 'local' innovations by the presence of localization and urbanization economies, and by the flow of non-codified knowledge requiring proximity to be efficiently exchanged.
Cities as cores in national systems of innovation	Knowledge organizations, specialized firms, demanding customers, etc. in large cities are important actors in wider innovation systems, as they often hold important knowledge to feed into innovation processes in firms outside of the cities.

The theory families recognised by Isaksen and Wiig Aslesen overlap each other in many ways, but they reveal on a general level in what the role of urban regions in an innovation-driven economy culminates. Allen Scott has simplified the basic message in the background to Table 2 to the effect that what is at the core of urban region's competitiveness is an ability to build global competitiveness on the strength of local competence (Scott 1988). Although innovativeness and other dynamic factors have assumed a place at the core of cities' competitiveness, it should not be forgotten that a) also structural factors are of great importance and b) competitiveness and innovativeness are not ends in themselves in urban development. In the final analysis, their purpose is to help promote residents' quality of life and wellbeing. The competitiveness of cities contains five decisive factors (source for the first three: Turok 2003, 1070):

- The ability of local companies to sell their products (and their services) on competitive markets (trade).
- The value of these products and services and the efficiency with which they are produced (productivity).
- Efficient use of local human and other resources (resources and capabilities).
- The ability of local actors to create, together and separately, new resources that contribute to the city's competitiveness (capabilities and management).
- The ability of local actors to translate economic competitiveness into structures and services that support residents' circumstances of life and prosperity (wellbeing).

All of the factors listed above are dynamic in character. We can never know for certain what services and products are important from the perspective of a region's future success. Nor can we know exactly what factors encourage companies and other important functions to put down roots in a region. As Sotarauta and Mustikkamäki (2008) point out, the 1990s answers to the limitedness of knowledge and the challenges of competition were to build innovation systems, promote cluster formation and strengthen interaction between different actors. (See Cooke & Morgan 1998). One goal was to make regions "sticky", so that it would be possible for them to get

important functions to put down roots in their own region in a "slippery" operating environment (Markussen 1996). Innovations, learning and creativity are assumed to be at the core of stickiness and at the same time attractiveness. Because resources are limited in Finland, the objective of competitiveness policy has been to strengthen regional specialisation and innovative activities within a framework of selected clusters. Since the beginning of the 1990s, innovation, learning and creativity have been examined in Finland fairly generally from the starting points that Porterian cluster thinking offers. At the same time, both research and the development of cities have been dominated by a relatively technology- and company-emphasising perspective, which has produced good results in many urban regions. Oulu's and Tampere's transformation from industrial cities to knowledge cities has prompted also international interest (Regarding the development of Tampere and Oulu, see Kostiainen & Sotarauta 2003; Kostiainen 2000, Hietala & Kaarninen 2005; Haapala 2005; Männistö 2002; Tervo 2002).

4.1 Metropolitan development

Urbanisation has accelerated everywhere in the world. In the OECD countries urban areas are now home to over half (53%) of the population and the share of economic development that large urban districts, metropolises, account for in many countries is really central. An OECD report on metropolises notes that in, for example, Hungary (Budapest), South Korea (Seoul), Denmark (Copenhagen), Ireland (Dublin), Finland (the Helsinki Metropolitan Area) and Belgium (Brussels) nearly half of GDP is generated in leading urban regions. Also in Finland, many of the key elements of economic development are concentrated in the Helsinki Metropolitan Area.

According to the OECD report, the rate of urbanisation in Finland in 1980-2004 was the sixth fastest in the OECD countries (Competitive cities... 2006). The Helsinki Metropolitan Area's share of national population is 24%, of jobs 29% and of value added 36%.[1] The innovation that has become the engine of economic development in Finland is clearly concentrated in the largest regions: 42.1% of R&D is done in Uusimaa, 16% in Pirkanmaa, 13.1% in Pohjois-Pohjanmaa (Northern Ostrobothnia), 10.4% in Varsinais-Suomi and 4.0% in Keski-Suomi (Central Finland).[2] Agglomerative forces seem to be a built-in feature of an economy founded on competence and knowledge. Many of the opportunities of the network society are located in the major urban regions and this attracts both educated workers and companies. In addition to large urban regions, also some smaller ones have been developing well in the 21st century. A structural change survey conducted in 2006 indicated that the best performers in 2000-04 had been the Porvoo, Oulu, Tampere, Jyväskylä, Seinäjoki, Hämeenlinna and Turku sub-regions. Measured in terms of migration, the biggest gainers in the 21st century have been the municipalities surrounding large cities (See Widgrén et al. 2007,

1 Laakso & Kostiainen 2007, 23

2 Calculated on the basis of Statistical Centre figures for 2005. In practice, R&D is concentrated in the biggest cities in the regions.

Table 3. Some selected metropolises' share of national GDP (Competitive cities... 2006, 38)

Metropolis and country	*Share of national GDP*
Copenhagen, Denmark	49.5%
Seoul, South Korea	48.6%
Dublin, Ireland	47.6%
Budapest, Hungary	45.6%
Brussels, Belgium	44.4%
Helsinki, Finland	42.1%
Oslo, Norway	36.5%
Auckland, New Zealand	36.1%
Vienna, Austria	33.7%
Stockholm, Sweden	31.5%
Tokyo, Japan	30.4%
Paris, France	27.9%
Sydney, Australia	23.5%
London, UK	19.9%
Milan, Italy	17.2%
Munich, Germany	9.6%
New York, USA	8.5%
Los Angeles, USA	5.0%
Boston, USA	2.2%
San Francisco, USA	2.2%

24). It appears that the agglomerative trend in Finland can be attributed fairly largely to a totality comprising advantages of scale, lowering of barriers to trade and mobility of factors of production. (Widgrén et al. 2007.) As Widgrén et al. note, "for example, it is advantageous for end-producers to locate close to intermediate producers (and vice versa) as well as close to consumers (and vice versa), which causes a ring (spiral) that concentrates economic activity ..." As possible dispersive counterforces they highlight immobility of factors of production, which can mean shortages of skilled labour arising in growth centres. They likewise believe that tightening competition as well as rising prices for land and housing can be interpreted as a dispersive force. Widgren et al. (2007) sum up agglomerative and dispersive forces as follows:

Forces that generally concentrate production (agglomerative forces) are:

- Demand and costs links
- Market size (market potential)
- Extraneous influences, such as information spreading in a certain area

Dispersive forces are

- Low mobility of production factors (labour). High mobility promotes agglomeration.
- Uneven development of land and housing prices.
- Improved transport connections and lower transport costs.

Agglomerative forces have led to a strengthening of the development of metropolises. Although the focus of attention in this report is the development of metropolises, it should be borne in mind that the biggest challenges facing regional development in Finland can be divided into four principal questions, of which primarily the first two are the focus of attention in this report, the main emphasis being on metropolitan development in accordance with the line adopted by the Committee for the Future.

- How can the Helsinki Metropolitan Area's competitiveness relative to the world's other metropolises be ensured?
- How can the competitiveness of other large urban regions be ensured?
- How can it be ensured that small and medium-sized cities are able to link into the network society as well as possible?
- How can the countryside and its role in Finnish society be re-invented?

4.2 What metropolises are competitive – rankings and measurements

Various competitiveness rankings have become a kind of popular entertainment, or perhaps one should say something to entertain decision makers and developers. In the following we shall outline, by way of example, some results of international studies in which urban regions have been ranked. We shall proceed through the reports one at a time, painfully aware that in some places we are repeating ourselves, and even more acutely aware that these reports provide only a pale picture of the factors that influence the development of cities. They tell nothing about general culture. The reason for this is clear: measuring the factors that influence the competitiveness of cities as broad comparisons has, at least so far, been possible only on a relatively general level.

Competitive cities in the global economy – OECD

The OECD's report on metropolises is a comprehensive and well-rounded review of the development of urban regions in the organisation's member states. There is no reason in this conjunction to repeat its many comparisons, nor would it be even possible to do so. The special focus of our attention is the type classification of metropolises presented in the report.

Using the criteria of GDP/inhabitant and the urban region's share of national GDP, the report highlights as "international stars" New York, Paris, London and Tokyo. They are centres of the global finance world, agglomerations of creative fields and generally speaking centres of several new functions that are affecting the world economy in many ways. Boston, Munich and Milan are examples of the "second string of world stars". They too boast a very high level of productivity, but their influence on the global level is not quite as extensive as that of cities in the first string. Their influence culminates in a world leader role in some sectors (Milan in fashion or Boston as a science and technology cluster). Both strings of world stars are versatile and varied metropolises, which precisely because of their diversity attract competent persons in

various fields from all over the world. (Competitive cities... 2006, 308-309.) Simmie et al. (2001) attribute the innovativeness of Milan (and Stuttgart) to especially local factors, i.e. the location close to companies of subcontractors, training facilities and technology transfer organisations. The existence in cities of a pool of specialist technology experts proved to be especially important. In addition, such traditional factors as a connection to an international airport and fast transport connections proved important. Demanding customers also contributed to innovativeness. In their study of Amsterdam, London, Milan, Paris and Stuttgart as innovative cities, Simmie et al. summarise their findings with the observation that the capacity for innovation and competitive advantage of the cities they studied are founded on a complex mixture of local, national and international factors.

The OECD report places Helsinki in the "national stars" category. National stars have a leading role in their own countries. They are also well connected internationally. National stars are divided into two groups: established stars and emerging stars. The report cites Madrid, Amsterdam, Barcelona, Vienna, Sydney and Chicago as examples of established stars. Their strength lies in a modern and diversified economic foundation and a strong competence and knowledge base. Additional typical features of them are a broad and diverse range of services and good connections with foreign countries. They also lack the problems that stem from structural change in old industry; their economic foundation is healthy and not particularly exposed to risks. Something else that adds to the diversity and strength of the established national stars is the fact that they are home to several universities and economic activities based on a high level of competence account for a large share. In addition, they often contain some highly specialised and competitive clusters. The OECD identifies emerging stars in especially the countries of Central and Eastern Europe and mentions Budapest, Prague, Warsaw and Bratislava as examples. The ascent of these cities is attributable especially to their ability to exploit rapid change in the transition countries more effectively than the country in general, because they are better equipped in the structural sense to do so (knowledge structures, educational level and less dependence on old industrial sectors). (Competitive cities... 2006, 309-310.)

The third group that the OECD report highlights is metropolises in transition. What they have in common is the problems that stem from change in the industrial structure and which manifest themselves in many ways and on many levels. Many of them have been highly specialised (port operations, textile industry, and so on). The examples of urban regions in this category that the report mentions include the cities of the Ruhr district, Rotterdam, Lille, Liege, Bilbao and Liverpool in Europe as well as Pittsburgh and Cleveland in the USA. These cities typically suffer from many problems stemming from unemployment and social exclusion. In the throes of change, they often find it difficult to attract the highly educated people that new rising sectors need, because they have a "working class image" that these do not find enticing. In addition, their attractiveness is further reduced by crime, pollution and low availability of quality housing and cultural services. Although many of the cities in this group have good universities, which turn out good and highly trained labour, many of them leave as

soon as they graduate and gravitate to districts where work and quality of life are suitably combined. (Competitive cities... 2006, 310-311.)

The OECD report divides the metropolises in the throes of change into sub-groups, which are called "come-back kids" and "strugglers". Manchester, Lille and Glasgow are mentioned as examples of the former. Those deemed to be still struggling with their problems include Busan (South Korea) and many Eastern European cities. Cities that are managing to make a comeback have been able to devise many kinds of innovative development policies. They have been able to promote the formation of clusters for new rising sectors (media in Rotterdam; ICT and creative sectors in Manchester). A lot of time and money has also been invested in changing their image, upgrading the housing stock and putting old properties to new uses. (Competitive cities... 2006, 311.)

In addition to the above-mentioned groups, the OECD categorises cities also into "niche players" and "university cities". As their name implies, niche players have specialised in some or other relatively narrow sector. Eindhoven and Oulu (ICT) are mentioned as examples in the report. The specialisers are praised in particular for good cooperation between universities and companies, strong networks on the personal level, a strong sense of local pride and identity as well as the willingness of key players to launch and carry through major investments that are specifically intended to develop the city. It is also noted that in Eindhoven Philipps and in Oulu Nokia have had important roles. They bring international contacts to relatively small and narrowly based cities, are demanding clients and attract subcontractors and competent personnel to the region. Specialisation is the niche players' greatest strength and weakness. Being specialised makes them particularly vulnerable to global fluctuations. For it to be possible for them to remain at or close to the head of the world table in their special sector, they have to specialise more, which makes them even more vulnerable. True to their name, university cities build their lives around third-level institutions and those who study at them. (Competitive cities... 2006, 311.)

As the biggest challenge with which Helsinki must contend, the report mentions the region's internal differences, urban sprawl, competition and weak cooperation between municipalities as well as unhealthy competition in locality marketing. Helsinki receives also positive attention in that Culminatum is highlighted as a good example of how cooperation between public administration, companies and tertiary institutions of learning can create something new.

World Knowledge Competitiveness Index

The purpose of the World Knowledge Competitiveness Index (WKCI) is to produce the most comparable information possible about the competitiveness of metropolises on the global level.

It is used to compile data on regions' 1) knowledge capital capacity, ability and maintenance in each area, 2) the extent to which these are converted into economic values and 3) passed on to citizens in the form of wellbeing and prosperity. The WCKI compares 125 urban regions or other economic areas in the light of 19 knowledge economy criteria. (Hietaniemi 2006.) The comparison focuses on larger areas and in it

Table 4. Global knowledge competitiveness index (Hietaniemi 2006; WKCI index)

City	*Overall knowledge competitiveness index 2006*
1. San Jose, USA	295
2. Boston, USA	244
3. San Francisco, USA	239
4. Hartford, USA	224
5. Seattle, USA	205
6. Grand Rapids, USA	195
7. San Diego, USA	193
8. Tukholma, Ruotsi	190
9. Rochester, USA	176
10. Los Angeles, USA	173
11. Sacramento, USA	172
12. New York, USA	172
13. Minneapolis-St.Paul, USA	167
14. Denver, USA	167
15. Detroit, USA	161
16. Riverside-San Bernardino, USA	155
17. Philadelphia, USA	153
18. Portland, USA	153
19. Austin, USA	150
20. Helsinki (Uusimaa)	**148**

urban regions, more extensive areas and whole countries are fluently compared with each other. In any case, the WKCI indices illustrate indicatively the competitiveness of various regions and metropolises on the global level. (The research in the background to Tables 4-6 and the variables used in it are outlined in Annex 1).

Urban regions in the USA head the table in the WKCI results. Of the twenty best regions measured in terms of competence competitiveness, only two are European, i.e. Stockholm and Helsinki (see Table 4). Measured on the instrumentation and electrical machinery index, Helsinki rises to first place and on the high-tech services index ranks fifth (see Tables 5 and 6.)

Competitive European Cities – Office of the Deputy Prime Minister of the United Kingdom[3]

In 2004, the Office of the Deputy Prime Minister of the United Kingdom commissioned a study on the competitiveness of European cities and especially how Britain's core cities[4] were performing relative to their European competitors (Competitive European... 2004). The assessment criteria used were ordinary ones like GDP per capita, educational level of the population, connections, population change and companies' interest in locating in the region. The statistical data are mostly from the beginning of

3 The survey was conducted by a consortium headed by the European Institute of Urban Affairs at the John Moores University in Liverpool. The city looked at in Finland was Helsinki.

4 Bermingham, Bristol, Leeds, Liverpool, Manchester, Newcastle, Nottingham, Sheffield

Table 5. Instrumentation and electrical machinery sector index (Hietaniemi 2006; WKCI index)

Region	*Index 2005*
1. Helsinki (Uusimaa)	**376**
2. Switzerland	317
3. Baden-Wurttemberg, Germany	302
4. San Jose, USA	299
5. Milwaukee, USA	291
6. Shizuoka, Japan	279
7. Småland and islands, Sweden	278
8. Tochigi, Japan	277
9. Shiga, Japan	271
10. Southern Sweden	255
11. Bayern, Germany	250
12. Lombardy, Italy	235
13. Aichi, Japan	202
14. Bratislava, Slovakia	202
15. Kyoto, Japan	202
16. Budapest, Hungary	201
17. North-eastern Italy	191
18. Boston, USA	188
19. Emilia-Romagna, Italy	186
20. Osaka, Japan	180

the decade (2001 and 2002). In terms of GDP per capita, the number one in Europe was Frankfurt, followed by Karlsruhe, Paris and Munich. Helsinki ranked 22nd, whilst the wealthiest Nordic city Copenhagen was seventh on the list. On the innovation scale Stockholm came first and Helsinki (Uusimaa) second. (See Table 7). Munich, Stuttgart and Bristol ranked after Stockholm and Helsinki.

In terms of tertiary education among 25-64-year-olds, Helsinki ranked best among the cities assessed. Stockholm and Bristol achieved the other "podium positions". Accessibility was measured in the light of the number of air passengers. The strongest cities with respect to connections were Frankfurt, Amsterdam and Milan. Helsinki ranked well at ninth. The best Nordic city was Stockholm (7). Helsinki and Stockholm headed the table for population growth and the dependency ratio in Helsinki is likewise among the best figures. Stockholm and Helsinki are lat the head of the table for employment rate as well. When the feature examined is which city is the best place to locate business operations in, those heading the table are, as might be expected, London, Paris and Frankfurt. According to Simmie et al. (2001), London's success is explained by, among other things, the fact that the city's role as a node of global networks has facilitated the emergence of a knowledge-intensive corporate services cluster and good development. In the London metropolitan region, knowledge-intensive corporate services form a cluster in which there is quite a lot of interaction between companies, information mediation and mobility of labour between organisations. Local collective learning processes have contributed to the development of the cluster. Among the examples of this is the fact that existing business operations are continu-

Table 6. Employment in high-tech services index (Hietaniemi 2006; WKCI index)

Region	*Index 2005*
1. Tokyo, Japan	284
2. Stockholm, Sweden	249
3. San Jose, USA	237
4. Washington, USA	236
5. Helsinki (Uusimaa)	**228**
6. Bratislava, Slovakia	218
7. Prague, Czech Republic	193
8. Ile de France, France	192
9. South East, UK	170
10. Denver, USA	162
11. London, UK	160
12. Kansas City, USA	158
13. Madrid, Spain	158
14. San Francisco, USA	149
15. Eastern, UK	144
16. Boston, USA	139
17. Releigh-Cary, USA	134
18. Denmark	130
19. Atlanta, USA	129
20. Southern Sweden	126

ally creating spin-offs and that flows of information are founded on especially personal-level networks. In addition, access to global networks, global knowledge and customers is important. Along with Warsaw, Athens, Oslo and Moscow, Helsinki is close to the bottom of the list in terms of being a business location. (Keeble & Nachum 2002.)

Helsinki's ranking in this study reflects Finland's ranking in the international competitiveness survey. The population's educational level and the innovativeness of the operational environment are top-class, but a geographically remote location is reflected in connections and innovativeness is not converted into prosperity.

State of European Cities – European Union

The "State of European Cities" report (2007) is extensive and comprehensive. What makes the comparison especially interesting is that 13 different types of cities are identified in it and cities of the same type are compared with each other. The principal types of cities are international hubs, specialised poles and regional hubs. Each main category is further divided into several sub-categories. The Finnish cities included in the comparison are Helsinki, Oulu, Tampere and Turku.

The types of cities in the report are:

International hubs
- Re-invented capitals
- Knowledge hubs
- Established capitals

Table 7. GDP/capita in 61 European cities (Competitive European... 2004)

	Euro/resident		*Euro/resident*
Frankfurt am Main	74.465	Haag	30.110
Karlsruhe	70.097	Essen	29.760
Paris	67.200	Bristol	29.437
München	61.360	Lyon	28.960
Düsseldorf	54.053	Bologna	28.282
Stuttgart	53.570	Bochum	27.900
Brussels	51.106	Parma	27.491
Copenhagen	50.775	Dortmund	26.548
Hanover	47.223	Rotterdam	26.227
Hamburg	43.098	Strasbourg	26.015
Mannheim	41.674	Florence	25.693
Nürmburg	41.456	Leeds	25.219
Augsburg	39.360	Duisburg	25.259
Cologne	39.108	Eindhoven	25.226
Amsterdam	38.203	Turin	25.042
Münster	38.149	Toulouse	24.852
Wiesbaden	37.454	Rome	24.766
Dublin	36.591	Bordeaux	24.252
Vienna	36.572	Malmö	24.233
Stockholm	35.733	Gothenburg	24.065
Gelsenkirchen	35.688	Grenoble	24.026
Helsinki	**35.322**	Verona	23.954
London	35.072	Berlin	23.428
Bremen	35.022	Marseilles	22.809
Edinburgh	35.018	Birmingham	22.069
Bonn	34.112	Manchester	22.099
Antwerpen	33.090	Newcastle	20.499
Milan	32.122	Lille	20.191
Glasgow	31.893	Barcelona	18.449
Utrecht	31.712	Liverpool	16.466
Saarbrücken	30.368		

Specialised poles

- National service hubs
- Gateways
- Transformation poles
- Modern industrial centres
- Visitor centres
- Research centres

Regional poles

- De-industrialised cities
- Regional market centres
- Regional public service centres
- Satellite towns

Table 8. Best cities in which to locate business operations[5] (Competitive European... 2004)

	1990	*2001*	*2002*
London	1	1	1
Paris	2	2	2
Frankfurt	3	3	3
Brussels	4	4	4
Amsterdam	5	5	5
Barcelona	11	6	6
Madrid	17	8	7
Milan	9	11	8
Berlin	15	9	9
Zürich	7	7	10
München	12	10	11
Dublin	-	14	12
Düsseldorf	6	17	14
Stockholm	19	15	14
Geneva	8	12	15
Prague	23	22	16
Lisbon	16	16	17
Hamburg	14	18	18
Manchester	14	14	19
Lyon	18	20	20
Glasgow	10	19	22
Rome	-	25	22
Vienna	20	23	23
Copenhagen	-	24	24
Budapest	22	22	25
Warsaw	25	27	26
Helsinki	**-**	**26**	**27**
Athens	22	29	28
Oslo	-	28	29
Moscow	24	30	30

The only Finnish city classified as an international hub is Helsinki, and more specifically it is designated a knowledge hub. Knowledge hubs are defined in the report as key players in the global economy, positioned above the national urban hierarchy and in the forefront of international industry, business and financial services. In addition, they are well-connected to the world and based on high levels of talent. Other knowledge hubs mentioned in the report include Frankfurt, Munich, Barcelona, Milan, Dublin and Stockholm. Helsinki's strengths in the reference group mentioned are a good employment rate (ranked second in the comparison), and a well-educated population (likewise second). The city's wealth is average for the group. Helsinki's weaknesses are the lowest number of entrepreneurs and poor multimodal accessibility. In addition, Helsinki has fewer foreigners than any other city in the group, which is a weakness from the perspective of diversity. However, the city has also been spared many of the problems associated with immigration.

5 The table is based on Healey and Bakaer's European Cities Monitor 2002 survey, in which over 500 corporate executives and investors assessed which cities are the most interesting from the perspective of establishing business operations in them.

Oulu, Tampere and Turku are all specialised poles, but according to this assessment, they are specialised in different ways. Oulu is classed as a research centre. As their name implies, research centres are centres of research and higher education, including science and technology related corporate activities, and are well-connected at the international level. Karlsruhe, Grenoble, Bologna, Eindhoven, Toulouse and Cambridge are all research centres. Oulu is one of the smallest research centres included in the comparison. Its strengths relative to the reference group are its well-educated population (ranked first) as well as strong GDP growth in the comparison period (1996-2001). In this respect it ranked second in its group, but despite growth its GDP per capita is one of the lowest figures in the group. Oulu's weak points are the low number of entrepreneurs and fairly poor accessibility. The proportion of foreigners in Oulu is the lowest in the comparison group.

Tampere is classed as a modern industrial centre. Cities of this type are described as platforms for multinational activities as well as local companies exporting abroad, and with high levels of technological innovation. Examples of the other cities of this type included in the comparison are Graz, Linz, Poznan, Gothenburg, Tilburg, Bielefeld and Zaragoza. Like Oulu, Tampere is one of the smallest cities in its comparison group. Its strengths are its population's high educational level (ranked third) and the large relative proportion of students (ranked fourth). In the light of several criteria – GDP growth, GDP per capita, employment rate, employment rate among older workers – it ranks in the bottom end of the best third among the 30 cities in the comparison, but its unemployment rate is one of the highest in the comparison group.

Turku is defined as a national service hub. These play an essential role in the national urban hierarchy, fulfilling key national functions and often some capital functions within the (public) services sector. In fact, some of them have been capital cities in the past. Others in addition to Turku are Hanover, Tartu, Brno, Seville, Utrecht, Bonn, Bordeaux and Strasbourg. Turku is the third-smallest national service hub in its comparison group of 20 cities. In the light of several criteria – GDP growth, GDP per capita, proportion of foreigners[6] and public-sector jobs as a proportion of total employment – it is located in the mid-range of the group.

The Economic Map of Urban Europe

Seppo Laakso and Eeva Kostiainen (2007) have updated the extensive "The Economic Map of Urban Europe" survey. In it, 45 metropolises in 29 European countries are compared with each other in the light of such criteria as population, regional value added, economic structure, unemployment, productivity and economic growth. The survey also includes forecasts of future development. The Finnish city included in the survey is Helsinki.

Helsinki ranks well in the comparison except with respect to size of population and absolute value added. The unemployment rate in Helsinki is in the mid-range for the group. The lowest unemployment rate is in Prague. With respect to value added per

6 Only the proportion of other EU citizens is stated. This is 0.5% of Turku's population. With the exception of Luxembourg, the proportion of other EU citizens is low in all cities.

capita, Helsinki ranks 11th. The best metropolis in this respect is Geneva. For population growth in 2001-05 Helsinki ranks 11th, with Madrid number one, and the unemployment rate in the city is the 10th highest. The lowest unemployment rate was in Dublin. In terms of regional value added in 2001-05, Helsinki was the eight fastest in the group, with Dublin the fastest. In the growth forecasts for 2006-11 Helsinki ranks fifth with respect to both employment growth and regional value added growth. All in all, when Helsinki is compared with other European metropolises, its development has been good and forecasts indicate that the pace will only quicken.

Quality of life – the European Commission

A survey on perceptions of quality of life in 75 European cities, including Helsinki and Oulu in Finland, was conducted for the European Commission in 2007. In the survey, 500 randomly chosen persons in each city were asked their opinions of their home city. The respondents replied to statements about the city on a four-step scale.[7] The results are reported as percentage shares of responses.

In response to the question "are you satisfied with living in this city?", the interviewees in Oulu were the 10th most satisfied with their own city among the residents of the 75 cities surveyed and the people of Helsinki the 28th most satisfied. Responding to the statement "It is easy to find a good job", the interviewees in Helsinki improved their ranking and emerged as the 11th most positive, whereas their counterparts in Oulu ranked only 26th with regard to ease of finding a job. This survey reveals that finding a dwelling is one of the biggest challenges that people in Helsinki face; hardly any of them at all agreed with the statement "It is easy to find good housing at a reasonable price". The vast majority of respondents disagreed with the statement. With regard to finding a dwelling, Helsinki ranked 65th, whereas Oulu came 9th, its residents being quite satisfied with their chances of finding housing at a reasonable price. The respondents in Helsinki were not satisfied with the integration of foreigners, either. The response to the statement "Foreigners are well integrated" was fairly generally disagreement and Helsinki ranked 64th in this respect out of the 75 cities. Oulu came 20th.

Respondents in Oulu did not find air pollution a big problem, whereas those in Helsinki were more critical in this respect. They ranked 9th in disagreeing with the statement "Air pollution is a big problem", whereas the majority of respondents in Helsinki agreed with the statement. By contrast, public transport was lauded in especially Helsinki. Respondents in Helsinki were more satisfied with the quality of public transport than their counterparts in the other cities; nearly 100% of them responded positively. The respondents in Oulu were in the mid range of the group, but more of them responded positively than negatively. The level of satisfaction with safety likewise appeared good. To the statement "You feel safe in this city", the respondents in Oulu ranked second in the group in expressing agreement and their counterparts in Helsinki came seventh.

7 Strongly agree – somewhat agree – somewhat disagree – strongly disagree

As a summary of the survey results, it can be said that in Helsinki people are satisfied with public transport, safety and job opportunities. By contrast, they are dissatisfied with especially housing opportunities and integration of foreigners. Residents of Oulu are, generally speaking, very satisfied with their city (including safety, air quality, housing opportunities and job opportunities. Respondents in Oulu did not express particular dissatisfaction with regard to any matter.

Technology, talent and tolerance in European cities

With inspiration from especially Richard Florida (2002), the concept of a creative city assumed a place at the core of many cities' development in the early 21st century. On a general level, the creative city refers to all of the properties and "characteristic traits" that, on the one hand, make it possible for creative individuals and organisations to function and, on the other, attract creative people (Sotarauta et al. 2003). According to Florida (2002, 35), creativity flourishes in the kind of environment that is sufficiently stable to create the possibility of continuity for itself, but which is sufficiently unstable, diverse and tolerant to nourish creativity in all its forms and generate the "energy" that the creative class appreciates. It is also possible in a creative city to be weird among the weird and uncommon and find people who think in a different way, challenging the competent to think for themselves and forcing them to look at matters from different perspectives and thereby both broaden and deepen their own thinking (Florida 2002, 227). In other words, there are creative tensions in a creative city (Sotarauta & Lakso 2000).

Creative city thinking represents a challenge in many ways to the Finnish development model, which is founded on high social capital and a tendency to seek consensus, although its fundamental ideas remain more or less subject to debate and unproven. The observations below have been compiled from several studies and deliberately expressed in pointed terms for this preliminary study. They are intuitively appealing.

- A creative problem-solving environment (an abundance of exciting and inspiring challenges that support learning) attracts competent people and encourages innovativeness.
- Innovation is born of the freedom to reflect and ponder; wonder and weigh up; do and act.
- Innovation is born in the cross-pressures of different ideas and arguments.
- Excessively strong social capital stifles innovativeness and locks people into the past.
- The key factors in long-term development are social openness, tolerance, unclarity, diversity, confusion, and so on.
- Creative and innovative people do not gravitate to regions with a high social capital, but rather to places where it is possible to be odd among the odd, where it is always possible to find like-minded to develop new ideas and challenge one's own thinking and where it is easy to go and put down roots.

(Florida 2002; Raunio 2002; Reich 2002)

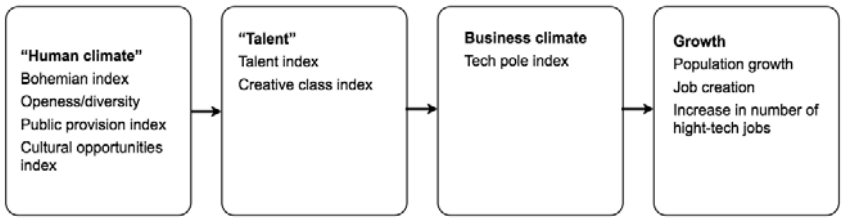


Figure 2. Florida's model adapted to Europe (Andersen et al., forthcoming; See Annex 2 for more details of criteria).

Richard Florida's theory of a creative class and a creative city can be summed up in the idea that the "human climate" attracts creative people, who in turn attract companies and all of this leads to population growth and job creation (especially of high-tech jobs; see Figure 3). Florida's original research was done in the USA. In Europe, the extensive research project "Technology, Talent and Tolerance in Europe (TTT)", the purpose of which is to find out how applicable Florida's theory is to cities in northern Europe, was launched in 2004. The project includes Finland[8], Sweden, Norway, Denmark, Germany, the Netherlands, the UK and Switzerland. Adapting Florida's studies to the European reality, the human climate was measured using a Bohemian index and according to the criteria of openness/diversity, provision of public services and cultural openness. It was not possible in Europe to use Florida's "gay index", which had been the focus of much attention as it reflects the proportion of a city's population that is represented by sexual minorities, as a measure of tolerance.

When evaluating the results of both Richard Florida's original research and of the study outlined here, it must be remembered that Florida's research has drawn a lot of criticism. His qualitative material is based fairly largely on anecdotal evidence rather than systematic interviews. In addition, he makes bold conclusions about the relationships between the creative class, the factors that attract the creative class and economic growth. Cause-and-effect relationships are difficult to prove and where the factors that have contributed to the development of many metropolitan regions are concerned, what is arrived at is an "egg-chicken" question, i.e. do jobs follow the competent or do the competent follow the jobs. In practice, what is involved is a two-way causality; the factors that Florida highlights can in some regions give rise to a self-reinforcing spiral, in which the factors mentioned have a positive influence on each other.

At time of writing, the European TTT project is still ongoing, but its preliminary results provide a basis on which some observations about Nordic comparisons can be made. The Nordic comparisons clearly reveal that the human climate is of secondary importance relative to the business climate when representatives of the creative class make decisions about which region to locate in. (Andersen et al., forthcoming). Work and especially the quality of work are still the primary attraction factor for highly

8 The Finnish part of the project is being conducted by the University of Tampere's Research Unit for Urban and Regional Development Studies (Mika Raunio and Markku Sotarauta).

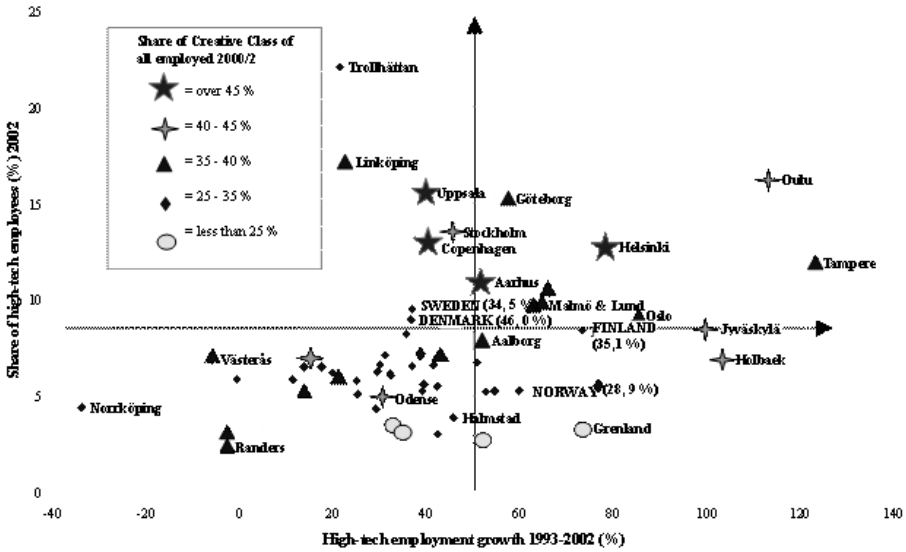


Figure 3. Increase in number of high-tech jobs 1993-2002 and high-tech jobs' share of total employment 2002 related to creative class's share of total employment (Andersen et al., awaiting publication)

educated people in the Nordic countries. This is probably due largely to the fact that Nordic cities are small and there are relatively few real alternatives. The situation is very different from what obtains in the USA and Canada.

When the Nordic cities are compared with each other on the basis of number of high-tech jobs, Bohemian inhabitants, creative class, diversity, educational standard and cultural amenities, those that rank highest are Stockholm, Oslo and Gothenburg. Helsinki is placed fifth and Tampere ninth. Helsinki's ranking is lowered especially by the city's low diversity figure.

Florida's theses do not explain where the number of high-tech jobs have grown in Finland. Of all the Nordic cities, Tampere had the fastest rate of growth in high-tech jobs in the period 1993-2002 and Oulu the second highest. Jyväskylä ranked fourth in this respect. It is hardly possible to explain the success of these cities with tolerance and openness. It is not possible in this connection to elaborate further for the good development, but it can be assumed that factors other than tolerance and openness contributed to the development. (See Männistö 2002; Tervo 2002; Linnamaa 2002; Kostiainen & Sotarauta 2003.)

Although Florida's theses about the creative class do not explain the good development of Finnish cities, they should by no means be rejected out of hand, either. Could it in fact be the case that the good development that Finland and some of its urban areas have enjoyed is founded more on a constant raising of the educational level, rapid adaptation and learning, companies' strategies as well as adaptation of models learned from abroad to the Finnish reality than on tolerance, social openness or even an ability to act in the cross-pressures of different ideas? However, could it also be the case that around the ideas at the core of the creative city we may be building our future

Table 9. The top ten Nordic creative cities in the light of six selected criteria. The comparison included all Nordic urban regions with over 100,000 population (Andersen et al., forthcoming)

	Techpole index 2000	*Bohemian index 2000*	*Creative class 2000*	*Diversity index 2002*	*Talent index 2002*	*Cultural opportunities 2002*	*Total*
Stockholm	1	2	1	1	6	2	13
Oslo	5	11	11	11	1	4	43
Gothenburg	3	7	7	4	13	9	43
Malmö/Lund	8	6	4	2	11	17	48
Helsinki	**2**	**1**	**2**	**39**	**4**	**1**	**49**
Copenhagen	4	3	12	20	8	3	50
Uppsala	7	17	3	7	2	26	62
Århus	12	5	17	31	5	6	76
Tampere	**11**	**4**	**9**	**48**	**18**	**7**	**97**
Umeå	14	18	15	21	9	25	101

shortcomings? If we are not able to slip into and become part of the global operating environment more broadly than at present and also allow the world into us, i.e. accept work-related immigration or give universities genuine opportunities to accept international students, we shall remain outside many international flows. All of this presupposes greater openness, tolerance and an ability to live together in many different ways.

Summary

Various studies and comparisons associated with competitiveness and success are often very superficial, because it is not possible with the aid of simple criteria to go deeper into the factors that bring individual cities success. In addition to a general comparison, it has been possible in some studies to group cities into categories and then compare the cities in the same group with each other. From the perspective of, for example, Finnish cities, this is much more interesting than a comparison with other Finnish cities. What would, of course, be useful would be to obtain information about the studied cities' own strategies; are they striving for the kinds of things that are being measured in the studies. In practice, this is a task for more in-depth case studies.

Assessed on the global scale, Finland has only one metropolis, i.e. Helsinki. Its share of national GDP is exceptionally high, over 42%. In the metropolises series Helsinki is a "national star", if its status and importance are assessed internationally. If, in contrast, Helsinki is assessed in terms of innovativeness, its competence and knowledge base or its specialisation in high-tech business, it ranks together with Stockholm at the head of the European table and indeed among the global leaders as well. To rise to the next level in the hierarchy would presuppose leadership in some or other field, in the way that cities like Milan or Boston have achieved.

Helsinki and the other Finnish cities studied have two typical features. They have not succeeded in converting competitiveness into wealth and the proportion of foreigners in their population is exceptionally low. Helsinki's (and also Tampere's) over-

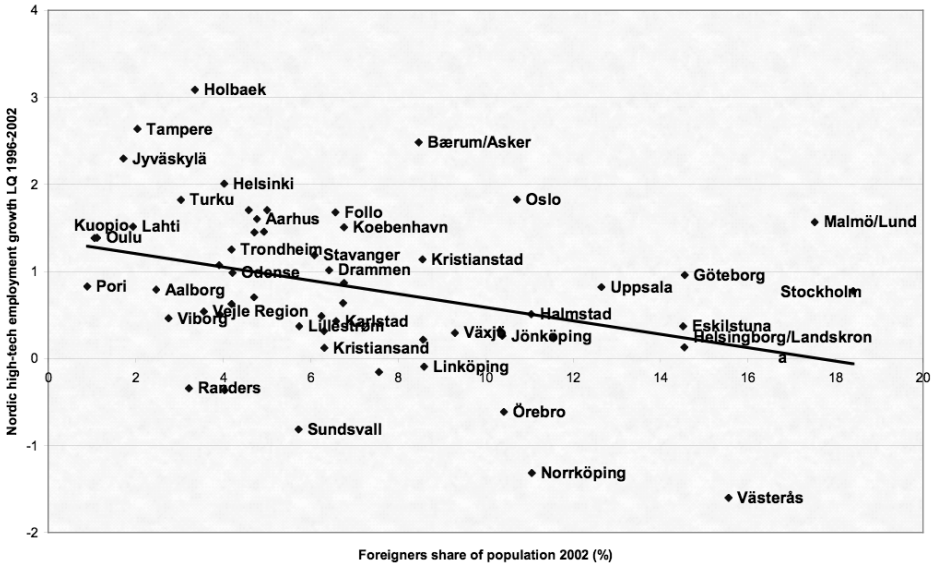


Figure 4. Growth in number of high-tech jobs (1996-2002 [Sweden1997-2002]) and foreigners' share of population in Nordic urban districts (2002)

all grade in the Nordic comparison is lowered by the low figure awarded for diversity. It is, however, true that Richard Florida's theses do not appear to explain the creation of high-tech jobs in Finland. It is probable that the low proportion of foreigners in the population will become a problem before long. Even if there is no success in attracting members of the "creative class" from abroad, growth slows down when labour can not be obtained for even more ordinary tasks.

In addition to Helsinki, Oulu, Tampere and Turku feature in the studies reviewed. Oulu has been acknowledged quite correctly as a niche city that specialises in research and technological development and Tampere as a rejuvenated industrial city that has also managed to build technology-based business. Turku is a national service centre, which has not developed as fast as Oulu and Tampere.

5 The dynamics of stars

Although new theories on regional economies (including cluster thinking and models relating to innovation systems) help fairly well to explain why regions like Silicon Valley, Cambridge or Boston have been successes, it is comparatively difficult to use them to explain why some regions where the prerequisites for success appear to be in order have not enjoyed success.

MacKinnon et al. (2002) and Macleod (2001) have pointed out that no one has actually been able to provide a flawless explanation of the factors in the background to the economic success that some regions have enjoyed. When the success stories that have often featured in the literature have been analysed, what has often ended up being done is a description of the effects of the development, its phases and general

models rather than in-depth analyses of how different forces and factors have influenced the course of development. The new theories on regional economic development have likewise been criticised for not making a sufficiently precise distinction between generalisable development models and success factors, on the one hand, and random and contextual phenomena, on the other. (Markusen 1996; Lagendijk & Cornford 2000). The numerous listings in the foregoing chapter likewise reveal hardly anything about the dynamics as a result of which the metropolises heading the lists are doing well. The ranking lists provide approximately the same kind of picture that one would get by reading ice hockey, football or basketball league tables without ever watching a game. In the following we shall highlight, by way of example, some of Silicon Valley's cultural features and some observations relating to Boston's long-term development. It is not possible in a preliminary study to unravel the dynamics of the games, but a quick glance behind the league tables is a reminder of the dynamic nature of metropolises' development.

Despite the criticism levelled at them, the new theories and models have, each from its own perspective, cast light on the relations of interaction and structures in the background to the dynamics of development. Both in the research world and in practical development work, in any case, the models of "big stars" like Silicon Valley and Boston have been too much followed and opuses written about them. As the statistics, rankings and city classifications described above show, different cities have different problems and development strategies should reflect the city's character and the development path that it has followed. That is how the situation has been in the Silicon Valley and Boston regions as well.

In a study of differences and similarities between the development paths of the Silicon Valley and Boston regions, Saxenian (1994) argues that a culture of interdependence and individual level communication contributed to economic development and innovativeness being better in the Silicon Valley region over the period covered by her study than in the Boston region. She emphasises that communication between individuals promotes mediation of knowledge and that concentration in the same region of competent human resources, companies and knowledge is not enough in itself to guarantee effective creation and exploitation of knowledge. Saxenian's observations, which seem in and of themselves self-evident in the early 21st century, have both contributed significantly to regional development studies and reflected well its present-day basic beliefs. When Silicon Valley is discussed and models for the development of Finnish urban regions are sought there, it is often forgotten that what makes Silicon Valley special are the cultural features (soft institutions) that are behind visible and hard institutions like top universities and companies. It is self-evidently clear that the picture of Silicon Valley that the list below projects is a simplified one. There is room for many kinds of actors in a large region, but the factors in question are highlighted in many studies as explanations for the success of the region.

- Tolerance of failure – bankruptcy is seen as a learning process rather than a stigma that stamps the entrepreneur's future.

- A high level of tolerance for "disloyalty" – cooperative relations are often based on so-called quick trust, i.e. today's partner may be tomorrow's competitor and vice versa. Cooperative relations change quickly and flexibly.
- Hypercompetitive, risk-seeking restlessness – many actors typically want to produce market-altering radical innovations.
- Civic interest – in this context communitarian interest refers to the wish and willingness of many actors to invest their own funds in new entrepreneurs and their quest for radical innovations, with the aim of, first, getting rich and secondly investing their own profits in the cluster than made it possible for them to get rich.
- Meritocracy – competent people with good ideas and who are innovative are esteemed more than formal positions.
- Obsession with renewal – many of the key actors in the region have some or other kind of obsession with constantly seeking new inventions that lead to permanent innovations.

(Saxenian 1994; Kenney 2000, Sturgeon 2000)

The above-listed matters at the core of Silicon Valley's secret could be called culture or soft institutions (See Gertler & Wolfe 2004). In any case, they tell quite a lot about the operational methods at the core of the region's economic success. However, they are not easy to copy or transform into the "best practices" favoured by the EU. Nevertheless, it is possible with their help to highlight several questions that come up quite often in Finnish discussions of development: is failure accepted in Finland and is it seen as an important part of individuals' and organisations' learning processes – if not, why not? Is there a risk-tolerating culture in Finland, one in which avoiding risk is a bigger sin than failure – are there incentives in Finland to support risk-taking and individual-level ambition? If not, why not?

A multi-cause tangle of interactions and an operational culture typical of the region are usually to be found in the background to the success of the cities highlighted with the aid of the ranking lists and type-classifications presented in Chapter 4. In addition to this, the long paths of development that the regions have followed should be identified and recognised. The development of cities is a long evolutionary process, in which rapid and dramatic changes for the better rarely occur. The roots of even the Silicon Valley high-tech miracle must be sought as far back as the 1930s and the development there has included many kinds of phases. (Saxenian 1994; Koepp 2002, Kenney 2000, Sturgeon 2000.) Thus the development of cities should be examined within a long time frame in order to be able to gain a genuine understanding of what factors influence development and what ones do not. With the aid of Silicon Valley's example we highlight cultural features and using the example of Boston we can create a quick review of how a city's development can be turned from splendour to recession and then back again. Today we can see a successful Boston, but it wasn't always that.

Boston became the capital of the State of Massachusetts in 1630. It functioned as a colony, but in contrast to what happened elsewhere, people settled permanently in

Boston rather than just collecting wealth to send back to the mother country. The principal source of livelihood was producing foodstuffs and exporting them to England. Boston went into decline in the latter half of the 18th century, because New York and Philadelphia had better harbours. In the first half of the 19th however, the city was able to utilise human capital associated with navigation and became a global centre of shipping and seafaring. Boston's competitive advantage was not founded on any harbour, but on people with significant expertise in seafaring and trade. They skippered, owned and operated ships. One of the key resources in the industrialisation of Boston that began in the 1840s were immigrants from Ireland. The city that had developed well on the strength of seafaring and industry went into decline in the 1920s and the population remained more or less unchanged in the period 1920-50, when the population of the USA as a whole increased by 50%. The population of Boston declined in absolute terms in the period 1950-80. The change in its relative position is aptly reflected by the fact that in 1910 it was the fifth biggest city in the USA, but by 1980 it had slipped to 24th place. (Glaeser 2005, 120-124.)

Boston's long recession was due to the following causes: a) the climate there is cold and the development of air conditioning and public health care increased the Sunbelt's attractiveness, b) Boston was an industrial city and all industrial cities went into decline, c) cars replaced the old-fashioned public transport that had been in a dominant position in Boston. It was a bad "driving city", and d) Boston had a reputation for high taxes and tight regulation. (Glaeser 2005, 120-122.)

Nevertheless, Boston has succeeded in re-inventing itself and in the early 21st century it ranks in a variety of surveys regularly as a member of the elite caste of America's most innovation- and competence-driven metropolitan regions. The features that can be highlighted in Boston's development curve are its capacity for self-renewal and ability to respond to new kinds of challenges. The Boston metropolitan region's capacity for self-renewal can be considered good. The explanations for this are the city's diversity and variety and the success of some leading clusters. At the core of the development in the 1990s and early 21st century are the dozens of universities in the metropolitan region, including Harvard and the Massachusetts Institute of Technology (MIT) and companies that have enjoyed global success. An essentially important feature of the region's capacity for self-renewal is its success in attracting not only companies, but people as well. Indeed, Gleaser (2005) notes that one of Boston's success factors has been the fact that it has always been a "consumer city". People have come to Boston not "only" in search of work, but also because it has been an interesting place to live. The city has not been developed solely on companies' terms, but also to suit consumers and citizens. People did not leave when times were difficult, but stayed put to create new opportunities for themselves and at the same time for the city.

Thoughts about the consumer city

As great narratives lose their significance, people have found themselves in a situation where they really must choose their values and lifestyles on their own. And what is the

worst thing, there is no guarantee of the correctness of their choices. Thus what is involved is real risk-taking. People build their identity and, in Bauman's words, "stem the flow", i.e. strengthen their identity in some way or another. Consumption has a central role in strengthening an identity. Hernesniemi sees the role of consumption in a societal sense as being almost a human condition of life when he says that "consumption is a semiotic game, created by human relations and sociability, which fits the individual into the body of society..." Consumption is also a way of accumulating social, cultural and societal capital, i.e. of investing in oneself (Hernesniemi 2006, 130-137). Lazzarato is even more metaphysical when he says that consumption is not simply buying a service or product, but that it means above all belonging to the world, linking to the universe. (Lazzarato 2006: 82).

If and when general culture includes the aspiration to become something and when it appears that people want to express their own aspirations and lifestyles also through consumption, the question that must be raised is how capable the city is of providing people with these opportunities. The content and orientation of self-development depend on everyone individually, and it cannot be generally known what each person values. Yet, on the other hand, a city must be made more interesting. What must be done?

The general answer is variety and diversity. By developing variety with respect to public and private services, housing, the urban environment and also with respect to people themselves, it is possible to create more alternatives. This is challenging for Finnish cities. For example, participation in housing development has become possible only in recent years, but development is still largely on the terms of authorities and production. And it shows in our monotonous urban image. It is true that an attempt has been made to give clients a greater input into developing housing through the so-called 4P model, which comes from the words public-private-people-partnership (See Majamaa et al. 2007, Majamaa et al. 2008). The idea is to give people, i.e. consumer-citizens, a role as key partners.

The dominant ideology in public services has been universalism irrespective of citizens' needs and especially the increasing diversity of the population. Even in the Paras project, the aim of which is municipal reform, most discussion has related to production and cost efficiency of services, not to making services correspond better to citizens' needs. So-called client-producer models, in which municipal functions have been divided into ordering and producing sides, have been adopted in some municipalities. At least in principle, also outside service providers can be producers. Interesting with regard to client-producer models is the question of how those who receive services can be successfully linked into developing them. Of what kind are the open and (Chesbrough 2003) interpretative innovation processes (Lester & Piore 2004), in which end-users assume the active lead user role described by von Hippel (2005, 1)?

Message 5 – Individuals and small groups should be seen more clearly than hitherto as active builders of their own lives, with different needs, dreams and resources.

6 Specialisation versus variety

Because resources are limited in Finland, the general objective of developing urban regions has been to strengthen regional specialisation and innovative activities within the framework of selected clusters. Since the first half of the 1990s, innovative activities, learning and creativity have been examined fairly generally from the starting points that Porterian cluster thinking provides.[9] On the national level, a manifestation of cluster thinking is especially the Centre of Expertise programme, in which regionally networked competence clusters[10] are nowadays a theme of discussion. However, it is not always clear whether really new kinds of development measures are involved or rather just a change in rhetoric. Hämäläinen and Heiskala (2004, 89-29) note that the central concepts in national economic policy in the 1990s were cluster, national innovation system and operational problems in markets. Drawing on a variety of sources, they also note that, although administration did adopt new concepts, it is not clear what their real influence has been in policymaking. Often, the new concepts have been flexibly dropped on top of the old operational models, whereby their use has been more rhetorical than real. With the aid of the cluster concept, in any case, both specialisation and cooperation across sectoral boundaries have been emphasised in Finland.

In his research into national competitive advantage Porter (1990) focused his attention on the totalities that industrial value chains form and which he called clusters. Although Porter's original analysis was directed mainly at entire nations, one of his key observations is that competitive sectors and clusters agglomerate in certain regions or certain cities. According to Porter, a nation's (and in later applications also a region's) competitive advantage comes into being when, over time, a suitable combination of factors of production, demand conditions, support sectors for an industrial branch, corporate strategies and structures as well as competition conditions accumulates in a sector of production. (Porter 1990.) What appears to be in the background to the popularity of the cluster concept is that it made it possible for attention to be turned to companies' resources and competences in the contexts of production chains and regional economies. (Lagendijk 2000). Interactions between actors and the importance of these relationships in economic development have also received more attention than earlier in cluster analyses. The difference compared with the earlier perspective based on industrial sectors and branches of administration has been clear. (Sotarauta & Mustikkamäki 2008).

The cluster concept has become rooted at the core of development work in several countries and cluster thinking has been applied in the greatest imaginable variety of contexts (See Asheim et al. 2006). At the same time, it has acquired many meanings depending on what it is being applied to and by whom (Benneworth 2004). A defining

9 Cluster thinking was quickly embraced in the Finnish economic policy discourse. It acquired its first official form in the Ministry of Trade and Industry's 1993 Industrial Strategy.
10 10 www.oske.net (28.1.2008)

trait of the early years of the cluster concept's rise to popularity was a boundless enthusiasm to apply it in practical development work, but as experience has accumulated and the scope of research broadened, also criticism has increased. Asheim et al. (2006, 22) have criticised Porter's way of distinguishing between different clusters as superficial and descriptive. In several cases, what would be described as "clusters" on the basis of Porterian premises are comparatively modest agglomerations of functions (Gordon & McCann 2000), in which some benefits that accrue from concentration, linkages between production inputs and results as well as social networks are discernible, but which are not clusters in the Porterian sense. Asheim et al. (2006) call for, alongside the "over-marketed" cluster fad, more objective research than hitherto and thereby research results than would support practical development work better. In the view of Martin and Sunley (2003), cluster models are not even nearly always sufficiently precise, either. As they have also noted, the popularity of the concept does not yet guarantee its usefulness. In their view, fuzziness weakens the theoretical potential of cluster models. Researchers who have written about clusters and practical developers would appear to be of approximately the same view with regard to the general contents of clusters, but disagree pretty strongly about how clusters are created through deliberate development measures or whether they can be created at all. There is also less than complete unanimity as to how it is possible to analyse clusters. (Sotarauta & Mustikkamäki 2008).

In development work it is not even nearly always particularly relevant whether or not there are genuine clusters in a region. Cluster thinking has offered developers a heuristic concept and the opportunity to discuss the allocation of development resources and strategic choices without becoming bogged down in individual companies or sectors. In his original analyses, Porter saw clusters as coming into being as a result of market forces, although he later also acknowledged the role that public administration plays in building the prerequisites for the emergence of clusters. In several countries, however, clusterisation has turned itself into above all cluster policy and deliberate efforts to create clusters or strengthen their development.

Thus concentration on clusters has brought attention to specialisation. The argument presented in support of specialisation is that scarce resources need to be channelled into a few promising regions and promising sectors. On the other hand, a characteristic feature of metropolises is variety. Not even research is completely unanimous with regard to the relationship between specialisation and variety. According to the research done by Feldman and Audretsch (1999, 427) on the basis of American sector-based material, what is most useful from the perspective of an innovation- and knowledge-based economy is not strict specialisation or variety, but rather an economies structure of many complementary parts that share a scientific basis. For their part, Duranto and Puga (2000, 553) note that there are both benefits and drawbacks in specialisation. The benefits are less urban congestion and a stronger "localisation economy" based on producers' proximity to each other. The drawbacks are fewer innovative activities as well as the risk of becoming vulnerable to rapid upswings and declines in certain sectors and technologies. Indeed, DeVol et al. (1999, 10) remind us

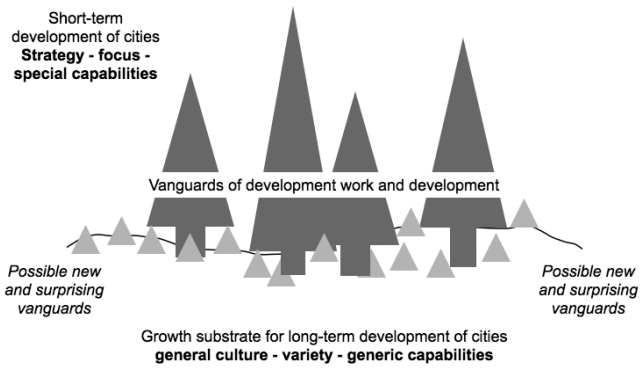


Figure 5: Assumption: relationship between growth substrate and vanguards of growth

that high-tech industries are the most volatile of all. They consider computers and aircraft to be particularly recession-prone.

Rosabeth Moss Kanter (1995) has introduced a different approach to the discourse on specialisation. In order to succeed in global competition, cities should, in her view, specialise in production-related competence, the development of new concepts or international trade and other connections. Exemplary cities in adopting this 3Cs model are Boston, which specialises in innovations, Miami, which is a centre of international trade as well as Greenville and Spartanburg, which are especially centres of the automotive industry. Himanen (2007, 13) examines the matter from Finland's perspective and calls for the achievement of absolute leadership in specific sectors. The weakness of the studies mentioned lies in the fact that they concentrate mainly on industrial production, excluding for example creative sectors and thereby the symbolic knowledge base that has a central role in cities' renewal.

The development of cities and at the same time the relationship between specialisation and variety must be understood as a long evolutionary process (Boschma & Martin 2007; Sotarauta & Srinivas 2006) based on technological paths of development that both open opportunities and limit development prospects. It is for this reason that changes in the sectoral structure and capacity for innovation happen over a long time span. Quick gains are rarely made in the development of cities. Frenken et al. (2007) recommend that in strengthening the foundation for development the specialisation and variety discourse should be bypassed and attention turned to what they call related variety (see also Asheim et al. 2006, 46). Frenken et al. (2007) draw a distinction between related variety, which makes a spillover effect possible, and unrelated variety, which means splitting risks by making inputs into a variety of sectors. The goal in related variety is a structure in which competences and sectors are mutually complementary, whereby it is possible, in addition to splitting risks, also to achieve positive externalities. The region's economic base is broadened by relying on the existing competence foundation. Despite that, it must be remembered that the development of new sectors and clusters can take decades (Kostiainen & Sotarauta 2003). Even in related variety, global competition requires that the objective be absolute leadership; what is ultimately involved is mainly who can determine the future "winners"

and how. Emphasising related variety attaches most importance to strengthening the growth substrate rather than directly choosing winners in narrow sectors. Variety is accentuated, because we can never completely predict the future development and/or take control of it by means of various development programmes and systems. Variety makes new and surprising courses of development possible and also ensures that at least some of the actors in the urban region would be capable of rapidly seizing new opportunities.

Related variety offers more room and opportunities for self-renewal than a portfolio of separate sectors. Separate sectors are more likely to be prisoners of technological paths of development, whereas on the interfaces of related variety the possibility of emergent and surprising development always exists. Related variety is only one element in building a regional advantage. In addition to it, there is also a need for recognition and utilisation of various knowledge bases as well as for connections with the outer world in order to renew and supplement the city's own knowledge bases. Asheim et al. (2006) speaks of globally decentralised information networks and Bathelt et al. (2002) of global connections, which are complemented by local buzz. In any case, variety as a general characteristic of a metropolis offers organisations and peoples more opportunities to fulfil themselves and is therefore an attractiveness-enhancing factor.

Our assumption is that the vanguards of urban development spring from a soil that consists of general culture, variety (preferably of the related kind) and generic capabilities

> *Message VI – Making inputs into strategic areas of emphasis must be continued, but innovative thinking and the level of competence in also other sectors and regions must be strengthened. It is important in strengthening the soil all over Finland. Cities should be seen as places where many kinds of knowledge meet. Especially the development of large urban regions should be based on, at the same time, cherishing variety and sharpening the spearheads of development.*

Cherishing variety in one way or another is based on the idea that a metropolis is a totality comprising many villages, a place offering a wide range of services and an abundance of different employment opportunities. This does not exclude specialisation, but specialisation springs from variety and gets its strength from an extensive potpourri of opportunities, functions and services.

7 The three knowledge bases of the knowledge economy

In order for it to be genuinely possible in Finland to multiply the foundations for the development of cities, our conceptions of knowledge and innovation should encompass many kinds of knowledge. Innovation work has mainly been examined as a technical phenomenon; in all its simplicity it condenses into applying some or other new thing in practice in a way that generates value added (See Ståhle et al. 2004). When the role of urban regions in innovation is examined, neither knowledge, competence nor

indeed even innovation should be associated only with science and technology, but in principle with all human activities. A narrow perspective on innovation is reflected also in the way that attention in empirical analyses of urban regions' competence and innovation is quite often focused on either a) inputs into innovation processes (labour, funding) or b) results (inventions, publications, patents). It should also be pointed out here that knowledge is not just information; in a very essential way it is culturally mediated and always presupposes a capacity for deliberation and an ability to act. Precisely from the perspective of this kind of culturally mediated knowledge, cities are significant places. They attract different kinds of people who bring with them different kinds of knowledge and competence as well as quite often different kinds of cultural influences. When one adds to this also the fact that the urban population often has a higher-than-average educational level, cities are inevitably good platforms for generation of innovations. They have leverage. They are surfaces for chances to stick to.

The development of large urban regions and the general culture of the future can not be built on a foundation of analytical knowledge alone. Is it time to build urban development models of a kind that take better account than is at present the case of also the everyday mundane knowledge on the basis of which people build their everyday lives in cities? This presupposes an expansion of the famous Triple Helix[11] to create a Quadruple Helix, with the individual being included, in a variety of roles, in different development concepts. In any event, we adopt the point of departure that also competence- and skill-intensive industrial sectors, municipal services production, the educational sector, private services, and so on should in that way be drawn into the knowledge economy of cities. Looked at from this perspective, all sectors are competence and knowledge-intensive. The development of all sectors presupposes good competence in the sector in question and the creation and application of new knowledge associated with it. The knowledge economy and the information society belong to everyone rather than being the exclusive property of some regions and sectors. At the same time, it is essential to note that the knowledge on the basis of which development culminates is very different in different sectors. Asheim and Coenen (2005) have tried to transcend the simple divide between tacit and explicit knowledge by dividing the knowledge foundation in the background to development into analytical, synthetic and symbolic knowledge.

Sectors with an analytical knowledge base include biotechnology and the pharmaceutical industry, in which R&D is strictly codified, if for no other reason due to legislation and the approval of various authorities (e.g. CE, FDA) that is required. Examples of sectors with a synthetic knowledge base include the automotive industry and construction, whilst those with a symbolic knowledge base include market communications and the movie industry. In practice, all sectors have features of all types of knowledge base, but what is involved is mainly the dominant type. When concepts like open innovation and lead user are applied, their suitability relative to knowledge

11 The Triple Helix concept launched by Etzkowitz and Leyesdorf (i.a. 1997) can be simplified as meaning that development is the result of university-industry-government interactions.

Table 10. Three different knowledge bases and the nature of innovations (Asheim et al. 2006, 49; Asheim & Coenen 2005).

Analytic knowlwdge base	*Synthetic knowledge base*	*Symbolic knowledge base*
Innovation based on creation of new knowledge	Innovation based on application or combination of existing knowledge	Innovation based on new ways of recombination
Key scientific knowledge based on deductive processes and formal models	Key applied problem-related knowledge based often on inductive processes	Central is re-use of knowledge or calling into question and challenging traditional conventions
Cooperation between research institutions and companies' R&D departments	Interactive learning with customers and suppliers	Learning in professional communities, learning from street and youth cultures or high cultures as well as interaction with professional communities in closely related sectors
Dominant form of knowledge codified; documents, patents and publications	Dominant form of knowledge tacit; related to doing, practices and manual skills	Trust in tacit knowledge, practical skill and search skills

bases should be considered. It is, for example, difficult to imagine what consumer-driven innovation would mean in the pharmaceutical industry. In any case, recognising different kinds of knowledge bases opens eyes to innovation opportunities elsewhere besides only in industry and forces decision makers to take different bases into consideration when planning innovation policy functions. The trend in Finland has been clearly turning in this direction.

Within knowledge bases, innovation processes differ from each other in character, but deliberately building linkages between sectors that spring from different knowledge bases creates the prerequisites for an innovation policy. The linkages can be technological in character, such as applying ICT or competence in material science or linkages associated with business logistics and business models.

Message VII – Analytical knowledge is one of the most important elements in the development of cities. However, it should not be over-emphasised; instead, different knowledge requirements should be outlined more broadly in development work than has been done up to now, which would also give us a better understanding of the roles that different actors play in the development of cities (See, e.g.,Lester & Sotarauta 2007 regarding the role of universities).

8 The smart city

8.1 Arguments for the smart city – strategic adaptation and self-renewal

Despite many ranking lists and new courses of development as well as the development rhetoric that reshapes itself now and then, time and time again we run into the fundamental question of urban regions' development and efforts to develop them: Why do some urban regions grow, but others do not? Why is the development of new technology and competence a lot stronger in some regions than in some others?

Quite often, signs of success are sought in the volume of research and development activities, a proactive innovation policy, venture investors, entrepreneurship, and so on. It has also become customary to emphasise close interaction between universities, companies and public administration. Attention is quite often concentrated on structures, with the dynamics of development being left in the background. However, the questions asked in the foregoing can also be posed in a different way: Why are some urban regions able to renew themselves faster than others? What factors are important in strategic adaptation? Strategic adaptation refers first of all to a sensitivity that allows one to recognise the directions of change and secondly the ability to create one's own interpretation of change, future trends and one's own role (See Sotarauta & Srinivas 2006).

> *"It is not the strongest of the species that survive, nor the most intelligent, but the one most responsive to change." (Charles Darwin)*

An innovative and competitive urban region is a complex concoction of variety factors, one that is impossible to control and direct using the traditional tools of public administration. Oulu has undeniably managed, with the help of a good strategic grasp, to renew itself and take its place in the front rank of knowledge economy cities. In metropolises, however, models based on strict strategic choices and close cooperation are applicable only in clearly demarcated projects.

According to Kostiainen (2008), when change processes are relatively simple, slow and linear, urban regions' development policies can be founded on detailed interventions, various advisory services as well as the provision of premises. An economic and development policy of this kind was pursued especially in the 1970s and 1980s[12]. As the pace of change increases, more flexible forms of activities and faster reaction have been striven for just as in large companies there was a changeover to solutions of the "corporate entrepreneurship" type, in which responsibility and power has been given to profit centres (Doz & Kosonen 2008). In urban regions, solutions of this kind have been, for example, the establishment of business and development companies as well as the building of technology centres. As the nature of change becomes more complex, both in the corporate world (Doz & Kosonen 2008) and in urban regions there was a changeover to strategic planning. That is what was done in, for example, Tampere in

12 Regarding the history of Finnish local economic policy see, e.g., Linnanmaa (1998)

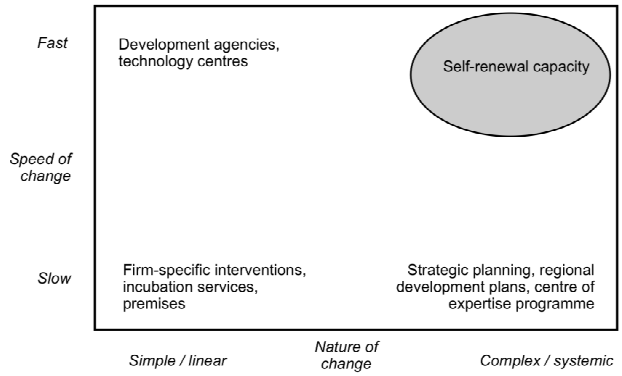


Figure 6. The changing environment of a local innovation policy [13] *(Kostiainen 2008)*

the late 1990s (Kostiainen & Sotarauta 2003). The national Centre of Expertise programme can likewise be regarded as an attempt to respond to complex change using the means that strategic planning provides. However, when change is both rapid and complex, strategic planning or competence emphases chosen for several years are not sufficiently dynamic tools to manage change. Doz & Kosonen (2008) offer companies strategic agility; from the perspective or urban regions, a capacity for self renewal provides an opportunity to manage change, or at least live with it.

The basis for thinking that emphasises a self-renewal capacity is that no region can completely mould its own activities or operating environment into the shape it would like; instead, regions are more or less forced to adapt to changes in their environment. The strategicity of the knowledge-intensive global economy has not been planned any more than partially. A self-renewal capacity is built on the same classical division of exploring new competences, knowledge and resources and exploiting them, which is inbuilt also in research into innovation systems. (Sotarauta 2005.) In research into innovation systems, the unit of analysis is usually organisations and interactions between them as well as the institutional totality, whereas in research into capacity for self-renewal, actor, development base and/or the relationship between micro- and macro-level processes can be chosen as the unit of analysis. It is possible to see the task of innovation systems as being to strengthen the self-renewal capacity of regions and improve their ability to adapt, on the basis of their own possibilities and needs, to changes in their operating environment. (Sotarauta & Mustikkamäki 2008.)

What is important from the perspective of self-renewal is that within a region (or cluster) there are enough activities which involve a quest for new rules of the game, new knowledge, new competences and new resources and not just a concentration on exploiting existing resources and competences. This is called exploration. (March 1991). Kim and Mauborgne (2005) call a grasp based on exploration a blue oceans strategy. They emphasise bringing new markets into being and creating demand rather than responding to it.

13 The four-field Figure was used by Doz and Kosonen (2008) to describe the approach to the strategic agility they had developed. However, their application was designed for companies.

Table 11. Outlining new basic assumptions in regional research and regional innovation and development policy (Sotarauta & Mustikkamäki 2008)

Starting points in regional development studies	*Starting points in regional innovation and development policy*
Strategic adaptation and resilience; emphasis on a strong self-renewal capacity	Harnessing emergent development making it a force for development (not stifling it).
Global channels that bring new information, competence and stimuli to the region.	Renewing existing institutions and creating new ones, thawing out frozen forms that impede development – institutional flexibility is important.
Specialised clusters and geographical production agglomerations are important, but excessive specialisation makes the local economy vulnerable and therefore variety is over the long term a foundation for dynamic and self-renewing development.	Identifying and systematically eliminating forces that lock development into the past.
More rapid courses of development than earlier, more networked development models and a need to understand and concretise abstract courses of development underscore the importance of individuals both as active participants in development activities and at the core of development activities also as leaders of networks and processes.	Identifying existing competences and creating structures and processes to exploit them.
	Creating new competences and resources.
	Refining interaction patterns that are important for the region's development and creating new ones.
	Increasing variety.
	Creating local innovation environments that support experimentation and risk-taking.
	Bold innovation and business policy experiments.

The general characteristics of a self-renewing urban region can be summed up as follows on the basis of the results of the Critical project:[14]

- Openness to new ideas coming from outside and an ability to combine information coming from different directions.
- Openness to local communities' and individual persons' knowledge and competence – a desire to actively seek and utilise it.
- Finding the significances of new things and new knowledge.
- Investing time, money and human resources in a quest for the new and various experiments – as well as learning from success and failure.
- Strengthening an innovation culture and creating structures that support renewal.
- Rapidly reacting to problems and crises.
- Rapidly seizing opportunities.
- Giving individuals opportunities as directors of development processes, network coordinators and seekers of new directions.

14 The City-Regions as Intelligent Territories: Inclusion, Competitiveness and Learning project, for which funding was provided in the EU's fifth framework programme, examined learning processes in Newcastle, Dublin, Dortmund and Tampere.

- Organising neutral discussion arenas for many actors.
- Learning between visions, outlining other actors' thinking and objectives.

(Critical project work seminars; Sotarauta & Mustikkamäki 2008)

It is possible to condense the main messages in the previous chapter, thinking that emphasises strategic adaptation and self-renewal, into a series of starting points in research and development policy.

8.2 The nature of the smart city

When self-renewal is emphasised, metropolitan development is based on a pick and mix model. The idea underlying pick and mix is that a metropolis should have a variety of different services, functions and actors. It is not possible to manage and direct the totality that they form strategically; instead, what matters most is the ability of actors in the region to find the services and partners they need and obtain the many kinds of stimuli they need to support their own activities. Thus a metropolis must have a) many kinds of services, structures and actors as well as good connections to services elsewhere, b) a variety of creative processes that create a general awareness, and which make matters visible and seeks their significances on the city level, and c) strong actors, who have the ability and willingness to take risks and seek new innovations. At the core of the model is the ability of actors to find what they need and use the various elements to put together the mix that suits each particular case. Then the development policy is founded on improving and tilling the kind of soil from which a great variety of surprising things can grow.

For a metropolis to be genuinely a metropolis and have a strong inbuilt ability to renew itself continuously, we believe it should be smart in character. A smart city is above all a learning and creative nodal point where various global innovation networks intertwine, but a smart city is also rough, unpolished. It is never something to be taken for granted nor easy nor insipid. And precisely that is why it is interesting from the perspectives of both people and organisations. Webster's Dictionary of the English Language (1996) defines the word in a way that excellently matches the nature of a smart city ...

Smart means...
- bright, acute, clever
- pertinently wicked
- vigorous, severe, emphatic, brisk
- causing a smarting sensation, stinging, pungent

The problem of learning cities is often that official learning city projects and various proclamations have hardly any contact at all with freely breathing and actor-oriented learning processes. In a smart city there isn't even the expectation that the official machinery of development would control and direct activities. It mainly creates

prerequisites for them, generates events and eliminates structural gaps. Many actors in a smart city have an inbuilt will to learn and renew themselves as well as a strong foundation for constant learning, i.e. a good general culture. Can any metropolis develop into a smart one without the springboard that strong general culture provides? In a smart city learning happens in many different kinds of forums; official and unofficial. A smart city seeks the future against the background of many starting points, in many different ways and does not fear the conflicts that diversity generates, because the fact that differences are often the beginning of new interpretations is known in a smart city. The educated people in a smart city are able, by debating, to create synthetic and symbolic knowledge. The smart city's ability continually to reinvent itself is based on creation of varied knowledge and a debate with many voices. This presupposes that the smart city has, in addition to its internal buzz, strong links to the world. They supply the smart city with a constant flow of new ideas, thoughts, knowledge and people. Many visit the smart city just to experience its atmosphere and pungently brash culture of discourse, that creates the new and calls the old into question.

It is often argued that there is not enough time for development, learning and innovation. The pressure for results that the "quarter economy" imposes kill creativity, it is said. In the smart city there is always time for discussions to sound and create the future. Not perhaps for everyone and at the same time, but because the smart city has variety, there are always groups there with the time to challenge and dispute ossified ways of thinking. At their best, the smart city's official developers and the city mothers and fathers support, with a gentle hand, ideas that rise from below and if necessary show the limits of creativity. Not everything can be permitted in even a smart city. In a smart city there is no belief in a shared vision and strategy, but rather in strategy as an endless learning process, in which what matters most is to learn from one's own and one's own city's role in the world, the visions and strategies of other actors as well as different ways of seeking points of contact between them. In a smart city, a very cautious and considered approach is taken to various official development programmes, because it has been learnt that an official development strategy may suffocate courses of development just as well as it directs them. On the other hand, it is also known that adequately resourced and well-directed development programmes can become the producer and orienter of the smart city's energy. Thus officials and holders of elective office in the smart city are themselves smart, whose task in life is their city's learning and not that of carrying out their own agenda in the city.

The idea of the smart city may be utopian. In any event, we would like to live in a smart city – in its pungently brash atmosphere we too might be inspired to take off in new directions.

9 Summary – eddies in the smart city

The network society is transitory and ambiguous in character. It slips away in a manner that requires general culture to be elevated to a respected status. It is the bedrock on which both individuals and smart cities develop. That is what we believe, even

though we are not able to prove our belief empirically. Anyway, transitoriness and ambiguity change the world. They change our ways of doing things and our thinking, and change always causes eddies. Eddies, in turn, reflect paradoxes onto our actions. In paradoxes, two phenomena that are the opposites of each other are simultaneously present and neither can be excluded. A metropolis is a priori a paradoxical totality and it is as such that it should be developed and administered. The asymmetricity of the network society and metropolises creates new dichotomies in front of us.

If people feel that expectations run counter to each other, and if expectations do not seem reasonable, activities may become paralysed and inactivity gain ground. Indeed, Morgan notes that if one acts dialectically within paradoxes, contradictory expectations are inevitable. A struggle between opposites may be inevitable, but it must not be allowed to become destructive; instead, there should be an ability to use the tension that springs from it as something that promotes learning. The starting point in managing paradoxes is to recognise that different ends of a dimension have their own merits. It is difficult to grasp paradoxes by getting locked into one perspective. Genuinely grasping paradoxes presupposes encircling them from several different perspectives, several different points of departure. At the same time, in the midst of global flows, paradoxes become intellectual challenges, things that highlight the need for interaction and communication.

The development of metropolises in the network society presupposes steps being taken into the unknown, and when steps are taken into the unknown, there is always the danger of being crushed by change. If, on the other hand, steps are not taken, there is the danger of becoming stuck in the old rut of development and the world, pulled by its global currents, will sweep past. Administration has a tendency to seek and create order with the aid of plans, regulations and the like. Excessive striving for order and balance may, however, stifle change and rigidify structures. Not enough room remains for the new ideas that spring from individuals and small groups. Change and innovativeness need tension as their growth substrate. Tension, in turn, needs a suitable amount of disorder and incentives. At the same time, a certain degree of continuity creates a sense of security and provides the opportunity to develop new matters within a long-term time frame and also internalise them. Correspondingly, overemphasising constant change may lead to uncritically running after new fashionable phenomena, when many an organisation may forget its raison d'être and seek and develop new services and organisational forms without actually knowing why.

One key question is whether an islet is growing out of the network society. Are representatives of information technology, biotechnology and other strongly ascendant sectors forming a new class of heroes? At the same time, is a new gulf coming into being between the university cities that are keeping up more closely with global flows and the rural areas that remain outside them? Within university cities, are we seeing the emergence of, on the one hand, an elite that is linked into the international economy and global flows and, on the other, a local pariah class comprising those groups of people that are excluded from networks and the upkeep of whom the heroes regard as an impediment to creating competitiveness? However, the heroes depend on the degree of development of both the intellectual and the physical infrastructure, the

amount of equilibrium in society and the standard of both public and private services. In an era of mutual dependence, there are fewer and fewer lone heroes.

The starting point in an examination of metropolises is how the shape and character of big cities change. Also in Finland, urban regions are fragmenting internally. Large cities have been clearly regionalising, if the criterion used is how great a proportion of residents in the surrounding municipalities work in the centre. At the same time, the directions of commuting have diversified and trips have lengthened. Then the core question does not relate to how cooperation between municipalities is organised, but what different roles the municipalities in the region have as parts of the totality; what is their contribution to the region's development? Generally speaking, those municipalities whose urban regions are thriving succeed, and vice versa (Competitive European...2004, 7).

In addition, it must be asked whether in southern Finland we are seeing the emergence of quite a new kind of networked urban structure, the core of which in the early 21st century consists of an axis between the Helsinki Metropolitan Area and the Tampere region and the small urban areas and rural districts along it. It can be assumed that the networked structure will continue to spread increasingly clearly in at least the directions of Lahti, Turku and Porvoo. The emergence of the networked structure is probably a result of the irregular character of the labour market in the networked society, which means that individuals, families and couples are ranging further and further afield in their search for work and housing. Especially the housing costs in Helsinki, which are high even by international standards, are forcing people to look further and further away for a dwelling. The keenness of the Finns to be owner-occupiers has contributed to accelerating the fragmentation of the community structure. Especially smaller municipalities surrounding cities have zoned areas for single-family houses. Regionalisation along with development of traffic and transport connections and telecommunications will expand the mycelium-like grouping of southern Finnish urban areas into a single network city. Is this constellation becoming one work area, a single and bigger jobs and housing market that will offer relatively many relatively genuine alternatives? The linkage between the places where one works and lives will also be weakened by further development of information and communication technology equipment as well as by distance working, about the future of which there does not appear, however, to be a clear conception.

Could the network city in southern Finland begin developing into a Finnish version of a metropolis? That might bring a smart network metropolis into being in Finland - but only if decision makers are able to get beyond the thinking patterns of parish pump politics.

Sources

AHLMAN, E. (1982) Ihmisen probleemi. Gummerus. Jyväskylä.

ANDERSEN, K. A. & HANSEN, H. K. & ISAKSEN, A. & RAUNIO, M. [awaiting publication] Nordic City Regions in the Creative Class Debate – Putting the Creative Class Thesis to a Test. Article manuscript.

ARISTOTELS (1991) Politiikka. Gaudeamus. Jyväskylä.

ARMSTRONG, P. (2001) Science, enterprise and profit: ideology in the knowledge-driven economy. Economy & Society 30(4) pp. 524-552.

ASHEIM, B. et al. (2006) Constructing Regional Advantage. Principles-perspectives-policies. European Commission, Brussels.

ASHEIM, B.T. & COENEN, L. (2005) Knowledge bases and regional innovation systems: Comparing Nordic clusters. Research Policy, 34, pp. 1173-1190

BATHELT, H. & MALMBERG, A. & MASKELL, P. (2002) Clusters and Knowledge: Local Buzz, Global Pipelines and the Process of Knowledge Creation. DRUID Working Papers No 02-12.

BAUMAN, Z. (2002) Notkea Moderni. Vastapaino. Tampere.

BENNEWORTH, P. (2004) Näkökulmia kulttuurin merkitykseen alueellisessa innovaatiotoiminnassa. In: Sotarauta, M. & Kosonen, K-J. (Eds.). Yksilö, kulttuuri, innovaatioympäristö: Avauksia aluekehityksen näkymättömään dynamiikkaan. Tampere University Press. Tampere.

BOSCHMA, R. & MARTIN, R. (2007) Editorial: Constructing an evolutionary economic geography. Journal of Economic Geography, Vol 7, pp. 537-548.

BOSCHMA, R. A. (2004) The competitiveness of regions from an evolutionary perspective, Regional Studies, vol. 38, no. 9, pp. 1001-1014.

CASTELLS, M. (1989) The Informational City: Economic Restructuring and Urban Development. Blackwell; Cambridge, MA.

CASTELLS, M. (1996) The Rise of the Network Society - The Information Age: Economy, Society and Culture. Blackwell Publishers.

CHESBROUGH, H. (2003) Open innovation. The Imperative for Creating and Profiting from Technology. Harvard Business School Press.

Competitive Cities in the Global Economy (2006) OECD Territorial Reviews. Organisation for Economic Co-operation and Development (OECD). Paris.

Competitive European Cities. (2004) Where do the Core Cities stand? Office of the Deputy Prime Minister. Urban Research Summary 13. London, 2004.

COOKE, P. & MORGAN, K. (1998) The Associational Economy: Firms, Regions and Innovation. Oxford University Press. Oxford.

COOKE, P. (2002) Knowledge economies: Clusters, learning and cooperative advantage. Routledge. London.

DeVOL, R.C. & WONG, P. & CATAPANO, J. & ROBITSHEK, C. (1999) America.s High-Tech Economy. Growth, Development, and Risks for Metropolitan Areas. Milken Institute.

DOZ, Y. & KOSONEN, M. (2008) Fast Strategy. How Strategic Agility Will Help You Stay Ahead of the Game. Wharton School Publishing.

DURANTON, G. & PUGA, D. (2000) Diversity and Specialisation in Cities: Why, Where and When Does it Matter? Urban Studies, Vol. 37, No. 3, pp. 533-555.

ETZKOWITZ, H. & LEYDESDORFF, L. (1997) Science Policy Dimensions of the Triple Helix of University-Industry-Government Relations, Science and Public Policy. Vol. 24. pp. 2-62.

FELDMAN, M.P. & AUDRETSCH, D.B. (1999) Innovation in Cities: Science-based diversity, specialization and localised competition. European Economic Review, Vol. 43, pp. 409-429.

FLORIDA, R. (1995) Toward the Learning Region. Futures 27:5, 527-536.

FLORIDA, R. (2002) The Rise of the Creative Class. Basic Books, New York.

FRENKEN, K. & van OORT, F. G. & VERBURG, T. (2007) Related variety, unrelated variety and regional economic growth. Regional Studies, Vol 41, No 5, pp. 685-697.

GERTLER, M. & WOLFE, D. (2004) Local social knowledge management: Community actors, institutions and multilevel governance in regional foresight exercises. Futures 36, pp. 45-65.

GLAESER, E. (2005) Reinventing Boston 1630-2003. Journal of Economic Geography, 5, pp. 119-153.

GORDON, I. & MCCANN, P. (2000) Industrial clusters: complexes, agglomeration and/or social networks? Urban Studies 37 (3) pp. 513-532.

HAAPALA P. (2005) History of Tampere: The very long road to informational city. In: e-City – Analysing Efforts to Generate Local Dynamism in the City of Tampere, Tampere University Press 2005, pp. 163-182.

HALL, P. Cities in Civilization: Culture, Innovation and Urban Order. London: Weidenfeld & Nicolson.

HALL, S. (1999). Identiteetti. Vastapaino. Tampere.

HEISKANEN, I. (1977) Julkinen, kollektiivinen ja markkinaperusteinen: Suomalaisen yhteiskunnan hallintajärjestelmien ja julkisen päätöksenteon ja hallinnon kehitys ja kehittäminen 1960- ja 1970-luvuilla. Deta 31. 2. painos. Helsinki.

HERNESNIEMI, J. (2006) Kulutus. In: Jakonen, M. & Peltokoski, J. & Virtanen, A. (Eds.) Uuden työn sanakirja. Tutkijaliitto. Helsinki.

HIETALA M. & KAARNINEN, M. (2005) The Foundation of an Information City: Education and Culture in the Development of Tampere. In: e-City – Analysing Efforts to Generate Local Dynamism in the City of Tampere. Tampere 2005, pp. 183-218.

HIETANIEMI, L. (2006) Maailman tietotalouden kilpailukyvyn indeksi WKCI. Kvartti, No 2, pp. 43-46. Helsingin kaupungin tietokeskus. Helsinki.

HIMANEN, P. (2007) Suomalainen unelma. Teknologiateollisuuden 100-vuotissäätiö, Helsinki.

von HIPPEL, E. (1988) The Sources of Innovation. Oxford University Press, New York.

von HIPPEL, E. (2005) Democratizing Innvation. The MIT Press. Cambridge. Massaschusetts. USA (available also at the URL http://web.mit.edu/evhippel/www/books.htm (read 1.9.2007)

HÄMÄLÄINEN, J. & HEISKALA, R. (2004) Sosiaaliset innovaatiot ja yhteiskunnan uudistumiskyky. Edita. Helsinki.

ISAKSEN, A. & WIIG ASLESEN, H. (2001) Oslo: In What Way an Innovative City? European Planning Studies, Vol. 9, No. 7, pp. 826-887.

KEEBLE, D. & NACHUM, L. (2002) Why do business service firms cluster? Small consultancies, clustering and decentralisation in London and Southern England. Transactions of the Institute of British Geographers 27 (1), pp. 67-90.

KENNEY, M. (2000) (Ed.) Understanding Silicon Valley: The Anatomy of an Entrepreneurial Region. Stanford Business Books.

KIM, W. C. & MAUBORGNE, R. (2005). Blue Ocean Strategy: How to Create Uncontested Market Space and Make the Competition Irrelevant. Harvard Business School Press.

KLIJN, E-H. & KOPPENJAN, J. & TERMEER, K. (1995) Managing Networks in the Public Sector: A Theoretical Study of Management Strategies in Policy Networks. Public Administration, Vol 73, No 3. pp. 437-454.

KNIGHT, R. (1995) Knowledge-based development: policy and planning implications for cities, Urban Studies, 32, 225-260

KOLEHMAINEN, J. (2001) Yritykset ja alueet tietointensiivisessä globaalitaloudessa. Kilpailukyky kohtalonyhteytenä. Tampereen yliopisto. Alueellisen kehittämisen tutkimusyksikkö. Sente-julkaisuja 12 / 2001.

KOSTIAINEN, J. (2000) Helsingin, Oulun ja Tampereen kaupunkiseudut innovatiivisina miljöinä, in the book: Kostiainen, J. & Sotarauta. M. (Eds.) Kaupunkiseudut innovatiivisina toimintaympäristöinä. Tekniikan Akateemisten Liitto. Helsinki 2000.

KOSTIAINEN, J. (2002) Urban Economic Development Policy in the Network Society. Tekniikan Akateemisten Liitto, Helsinki. (Doctoral dissertation)

KOSTIAINEN, J.(2008) Kaupunkiseutujen innovaatiopolitiikka ja itseuudistuminen. In: Mustikkamäki, N. & Sotarauta, M. (Eds.) Innovaatioympäristön monet kasvot. Tampere University Press. Tampere.

KOSTIAINEN, J. & SOTARAUTA, M. (2003) Great Leap or Long March to Knowledge Economy: Institutions, Actors and Power in the Development of Tampere, Finland. European Planning Studies, Vol. 11, No. 4, pp. 415-438.

KOSTIAINEN, J. & VADÉN, T. & VÄLIMÄKI, P. (2003) Viettelevä politiikka. Traff-kustannus. Tampere.

KROHN, S. (1981) Ihminen, Luonto ja Logos. Gummerus. Jyväskylä.

KROHN, S. (1989) Ydinihminen. Arator. Hämeenlinna.

LAAKSO, S. & KOSTIAINEN, E. (2007) The Economic Map of Urban Europe. A Comparative Study of 45 Metropolises. City of Helsinki, Urban Facts. Statistics 2007:42. Helsinki.

LAGENDIJK, A. (2000) Learning in non-core regions: towards intelligent clusters; addressing business and regional needs. In Rutten, R., Bakkers, S., Morgan, K. and Boekem, F. (Eds.) Learning Regions, Theory, Policy and Practice, Edward Elgar, London.

LAGENDIJK, A. & CORNFORD, J. (2000) Regional institutions and knowledge – tracking new forms of regional development policy, Geoforum, 31(2), 209-218.

LAZZARATO, M. (2006) Kapitalismin vallankumoukset. Tutkijaliitto. Helsinki.

LESTER, R. & PIORE, M. (2004). Innovation-The Missing Dimension. Harvard University Press, Cambridge.

LESTER, R. & SOTARAUTA, M. (Eds.) (2007) Innovation, Universities and the Competitiveness of Regions. Technology review, 214/2007. Tekes. Helsinki.

LINNAMAA, R. (1998). Paikallinen elinkeinopolitiikka ja verkostojen haaste. Tampereen yliopisto. Aluetieteen ja ympäristöpolitiikan laitos. Unpublished litentiate work.

LINNAMAA, R. (2002) Development Process of the ICT Cluster in the Jyväskylä Urban Region. In Sotarauta, M. & Bruun, H. (Eds.) Nordic Perspectives on Process-Based Regional Development Policy. Nordregio report 2002:3. 29-78. Stockholm.

LINNAMAA, R. (2004) Verkostojen toimivuus ja alueen kilpailukyky. HAUS-julkaisuja 1/2004.

LUNDVALL, B-Å. (Ed.) (1992) National Systems of Innovation: towards a Theory of Innovation and Interactive Learning. London: Pinter Publishers.

MACKINNON, D. & CHAPMAN, K. & CUMBERS, A. (2002) Learning, innovation and regional development: a critical appraisal of recent debates. Progress in Human Geography, 26 (3) pp. 293-311.

MACLEOD, G. (2001) New regionalism considered: globalisation and the remaking of political economic space. International Journal of Urban and Regional Research, 25(4) pp. 804-829.

MAJAMAA W. & HEYWOOD C. & KURONEN M. & KOSTIAINEN J. (2008) A new customer-orientated participation method for communicative planning. Accepted for publication in International Journal of Housing Markets and Analysis. No 3.

MAJAMAA, W. & KOSTIAINEN, J. & KURONEN, M. (2007). Residential housing based on consumer.s lifestyles, in Wakefield, R. & Blismas, N. (Eds.) XXXV IAHS World Congress on Housing Science 2007, pp. 103 (Abstract only), full paper on CD of conference proceedings, 4-7 September 2007, Melbourne, Australia.

MANNERMAA, M. (1998) Kvanttihyppy tulevaisuuteen? Kustannusosakeyhtiö Otava. Helsinki.

MÄNNISTÖ, J. (2002) Voluntaristinen alueellinen innovaatiojärjestelmä: Tapaustutkimus Oulun ict-klusterista. Acta universitatis lappoensis 46. Rovaniemi.

MARKUSEN, A. (1996) Sticky Places in Slippery Space: A Typology of Industrial Districts. Economic Geography, Vol. 72, No. 3, pp. 293-313.

MARKUSEN, A. R. (1999) Fuzzy, concepts, scanty evidence, policy distance: the case for rigour and policy relevance in critical regional studies. Regional Studies, 33 (9) pp. 869-884.

MARTIN, R. & SUNLEY, P. (2003) Decontstructing clusters: Chaotic concept or policy panacea? Journal of Economic Geography, vol 3, pp. 5-35.

MOSS KANTER, R. (1995) World Class. Simon&Schuster, New York.

OJANEN, E. Sivistys on pyrkimys ja olotila. http://sivistys.net/kolumni/eero_ojanen__sivistys_on_pyrkimys_ja_olotila.html (27.1.2008)

PAASI, Anssi (1993) Maantiede, tila ja yhteiskuntateoria. Alue ja ympäristö, Vol. 22, Nro 1. pp. 38-56.

PINE II, J. & GILMORE, J. (1999) The Experience Economy. Work is Theatre & Every Business a Stage. Harvard Business School Press.

PORTER, M. (1990) The Competitive Advantage of Nations. Macmillan. London.

RAUNIO, M. (2002) Suomi globaalitalouden osaajien valintojen kentällä. Ulkomaalaisten huippuosaajien mielikuvat ja todellisuudet suomalaisessa työ- ja kaupunkiympäristössä. Tampereen yliopisto. Alueellisen kehittämisen tutkimusyksikkö, Sente-julkaisuja 15/2002. Tampere.

REICH, R. B. (2002) The Future of Success: Working and Living in the New Economy. Vintage books. New York.

SAXENIAN, A. (1994) Regional Advantage: Culture and Competition in Silicon Valley and Route 128, Harvard University Press, Cambridge MA.

SCHIENSTOCK, G. (1999) Transformation and Learning: A New Perspective on National Innovation Systems. In: Schienstock, G. & Kuusi, O. (Eds.). Transformation Towardsa Learning Economy: The Challenge for the Finnish Innovation System. Sitra 213. Helsinki.

SCOTT, A. J. (1988) Metropolis: From the Division of Labor to Urban Form. University of California Press, Berkeley.

SIMMIE, J. (2003) Innovation and urban regions as national and international nodes for the transfer and sharing of knowledge. Regional Studies 37, 607-20.

SIMMIE, J. (2001) (Ed.) Innovative cities. London: Spon Press.

SOTARAUTA, M. (2005). Resilient City-Regions – Mission Impossible? Tales from Finland and Beyond about how to Build Self-Renewal Capacity. Hot Topic Paper. Observatory Pascal, Place Management, Social Capital and Learning Regions. Melbourne.

SOTARAUTA, M. & KOLEHMAINEN, J. & SUTINEN, K. (2007) Tampereen kaupunkiseudun elinkeinostrategian perusta: Kehittämisfilosofian etsintä ja strategian suuntaviivojen hahmottelu. Tampereen yliopisto, Alueellisen kehittämisen tutkimusyksikkö, Sente työraportteja 15/2007.

SOTARAUTA, M. & KOSTIAINEN, J. (2005) Organising for Futures in the City-Region of Tampere: Network Management and the Enabling Development Model, in Kasvio, A. & Anttiroiko, A-V: (Eds.) e-City. Analysing Effforts to Generate Local Dynamism in the City of Tampere. Tampere University Press.

SOTARAUTA, M. & LAKSO, T. (2000) Muutoksen johtaminen ja luova jännite: Tutkimus Kainuun kehittämistoiminnasta. Suomen Kuntaliitto, Acta-sarja 132. Helsinki.

SOTARAUTA, M. & LINNAMAA, R. & SUVINEN, N. (2003) Tulkitseva kehittäminen ja luovat kaupungit: Verkostot ja johtajuus Tampereen kehittämisessä. Tekniikan akateemisten liitto ja Tampereen yliopisto, Sente-julkaisuja 16/2003. Tampere.

SOTARAUTA, M. & MUSTIKKAMÄKI, N. (2008) Evolutionaarisen muutoskäsityksen ja itseuudistumisen kapasiteetin haaste. In: Mustikkamäki, N. & Sotarauta, M. (Eds.) Innovaatioympäristön monet kasvot. Tampere University Press. Tampere.

SOTARAUTA, M. & SRINIVAS, S. (2006) Co-evolutionary Policy Processes: Understanding Innovative Economies and Future Resilience. Futures, Vol. 38, No. 3. April. pp. 312-336

STÅHLE, P. & SOTARAUTA, M. & PÖYHÖNEN, A. (2004) Innovatiivisten ympäristöjen ja organisaatioiden johtaminen. Teknologian arviointeja 19. Eduskunnan kanslian julkaisu 6/2004. Helsinki.

State of European Cities Report. Adding Value to the European Urban Audit. European Commission, Regional Policy. 2007.

Strategic Development Concept of Transnational Cooperation in the Field of Innovation Promotion in the Via Baltica Nordica Macro-Regions. Final Report. The Baltic Institute of Finland. 2007. Tampere.

STURGEON, T. J. (2000) How Silicon Valley Came to Be. In Kenney, M. (Ed.) Understanding Silicon Valley: The Anatomy of an Entrepreneurial Region. Stanford Business Books.

Survey on perceptions of quality of life in 75 European cities. European Commission, Directorate-General, Regional Policy. 2007.

TEMPLE, J. (1998) The new growth evidence. Journal of Economic Literature, 37 (1) pp. 112-156.

TERVO, H. (2002) Rakkaudesta teknologiaan: Toimijaverkostonäkökulma Oulun IT-keskittymän rakentumiseen ja toimintaan. Acta universitatis lappoensis 76. Rovaniemi.

THRIFT, N. (1995) A Hyperactive World. In: Johnston, R. J. & Taylor, P. J. & Watts, M. J. (Eds.) Geographies of Local Change: Remapping the World in the Late Twentieth Century. Blackwell Publishers Ltd.

TUROK, I. (2004) Cities, Regions and Competitiveness. Regional Studies, Vol. 38.9, pp. 1069-1083.

VÄYRYNEN, R. (1998) Globalisaatio: Uhka vai mahdollisuus? Atena Kustannus, Sitran julkaisusarja nro 183. Jyväskylä.

WIDGRÉN, M. & ALHO, K. & KOTILAINEN, M. & NIKULA, N. & KAITILA, V. 2007. Avautuva talous ja aluekehitys suhteellinen etu ja kasautumisvoimat tuotannon sijoittumisen ohjaajina Suomessa. elinkeinoelämän tutkimuslaitos. Keskusteluaiheita No 1113. Helsinki

von WRIGHT, G. H. (2007) Humanismi Elämänasenteena. Otava. Keuruu.

Annex 1. World Knowledge Competitiveness Index 2005

The World Knowledge Competitiveness Index (WKCI) is a comparative comprehensive index which combines data concerning a region's (1) knowledge capital capacity, ability and maintenance in each area, 2) the extent to which these are converted into economic values and 3) passed on to citizens in the form of wellbeing and prosperity. The WKCI compares 125 urban regions or other economic areas in the light of 19 knowledge economy criteria. Knowledge has clearly become a key factor in the competitiveness of regions, peoples, sectors and companies everywhere in the world. The concept of the knowledge economy is formed in the following way:

- Intellectual capital, knowledge capital, economic capital, material capital are the production inputs in the knowledge economy and yield outputs from first the knowledge economy and later the economy as a whole.
- Intellectual capital is measured by the level of economic activity, the number of managers, production of IT and computer products and use of high tech by the biotechnology and chemical, automotive, instrumentation and electronics industries.
- Service jobs per 1,000 inhabitants.
- Economic capital is measured by the amount of private venture capital per inhabitant. The components of knowledge capital are: per capita R&D spending in the public and private sectors and the number of registered patents per million population.
- The yield of the regional economy is measured by work productivity, average gross monthly income and unemployment rate.
- Measurement of maintenance of knowledge capital: public spending per capita on primary, secondary and higher education, Internet and broadband connections per thousand population.

.

The WKCI material is standardised, subjected to factor analysis and after that a DEA technique that is a linear programming method. In the analysis and presentation of the material, all point amounts are converted into numbers with a mean value of 100 to facilitate understanding of the urban region's ranking and competitive status.

Annex 2. Variables in the indices used in the Technology, Talent and Tolerance in Europe project

The *tech pole index*: The index is calculated by multiplying a region's share of all the jobs inthe knowledge based industries in the country by the location quotient of the knowledge basedindustries in the region. The knowledge based industries are defined as follows:

244 Manufacture of pharmaceuticals, medicinal chemicals and botanical products
300 Manufacture of office machinery and computers
321 Manufacture of electronic valves and tubes and other electronic components
322 Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy
323 Manufacture of television and radio receivers, sound or video recording or reproducing apparatus and associated goods
331 Manufacture of medical and surgical equipment and orthopaedic appliances
332 Manufacture of instruments and appliances for measuring, checking, testing, navigating and other purposes, except industrial process control equipment
333 Manufacture of industrial process control equipment
334 Manufacture of optical instruments and photographic equipment
335 Manufacture of watches and clocks
341 Manufacture of motor vehicles
342 Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers
343 Manufacture of parts and accessories for motor vehicles and their engines
353 Manufacture of aircraft and spacecraft
642 Telecommunications
721 Hardware consultancy
722 Software consultancy and supply
723 Data processing
724 Data base activities
725 Maintenance and repair of office, accounting and computing machinery
726 Other computer related activities
731 Research and experimental development on natural sciences and engineering
732 Research and experimental development on social sciences and humanities
742 Architectural and engineering activities and related technical consultancy
743 Technical testing and analysis
921 Motion picture and video activities

The *Creative class* is defined according to occupational data (ISCO 97) and the followingoccupations are included:

Creative Core
211 Physicists, chemists and related professionals
212 Mathematicians, statisticians and related professionals

213 Computing professionals
214 Architects and engineering science professionals
221 Life science professionals
222 Health professionals (except nursing)
231 College, university and higher education teaching professionals
232 Secondary education teaching professionals
233 Primary and pre-primary education teaching professionals
234 Special education teaching professionals
235 Other teaching professionals
243 Archivists, librarians and related information professionals
244 Social science and related professionals
247 Public service administrative professionals

Creative Professionals

1 Legislators, senior officials and managers
223 Matrons and ward sisters
241 Business professionals
242 Legal professionals
31 Physical and engineering science associate professionals
32 Life science and health associate professionals
341 Finance and sales associate professionals
342 Business services agents and trade brokers
343 Administrative associate professionals
345 Police inspectors and detectives
346 Social instructors and related associate professionals

Bohemians

245 Writers and creative or performing artists
3131 Photographers and image and sound recording equipment operators
347 Artistic, entertainment and sports associate professionals
521 Fashion and other models

Bohemians also constitute a separate *Bohemian index* that is a measure of the proportion of people with artistic occupation

245 Writers and creative or performing artists
347 Artistic, entertainment and sports associate professionals
521 Fashion and other models

The *talent index* is measured as a region's share of persons in the labour force with a bachelor degree or more. The *openness index* is the proportion of the population, which is foreign born.

The *cultural opportunity index* measures employment in cultural and recreational industries in the area (employment as a share of the population). Cultural Opportunity (NACE):

553 Restaurants
554 Bars
921 Motion picture and video activities (also included in the tech-pole index, and should therefore be excluded either here or there)
922 Radio and television activities
923 Other entertainment activities
925 Library, archives, museums and other cultural activities
926 Sporting activities

The *public provision index* measures the employed within public welfare services as share of the total population.

801 Primary education
802 Secondary education
803 Higher education
804 Adult and other education
851 Human health activities
852 Veterinary activities
853 Social work activities

Six types of decision making that are building our future

Mika Aaltonen

Our future success, whether we define it in economic terms or as our ability to accept responsibility for those less fortunate than ourselves, will depend on how we perceive the world in which we live and predict future changes. We can think that the future is already here - that it is built into the decisions that we make today. According to Albert Einstein, events do not happen. They already exist and we only encounter them in an eternal present moment. This definition is not determinism - quite the contrary. According to it, the decisions that we make in the present influence the events that we will encounter in the future.

Michael Wexonius wrote in his doctoral dissertation "*De Prudentia*" for Turku Academy in 1642 that knowledge has three eyes: memory when it looks back at the past, wisdom when it looks at the present and concern when it ponders the future. We have built a landscape of decision making to improve the appositeness and effectiveness of our decision making. It takes account of the different dimensions of time and suggests that we must be more precise with regard to the future and always articulate explicitly what kinds of futures we are talking about.

In addition to the different dimensions of time, the landscape of decision making contains a variety of systems in which different cause-and-effect relationships are valid. These can be identified in Diagram 1. In the bottom-left corner is a linear system in which cause-and-effect relationships are predictable and repeatable. In the bottom-right corner we see disruptive systems. In them, cause-and-effect relationships are, retrospectively assessed, logical, or else we cannot understand them even retrospectively. Above them is a visionary system in which cause-and-effect relationships are separated by time and place from the present moment. The present moment is an imaginary line from the point where the arrows meet in the bottom-left corner to the equivalent point on the right-hand side.

Many matters relating to perceiving the future and our decision making in the present moment acquire more accuracy and appositeness when we first evaluate the landscape in which the decisions take place. Different systems demand different methods and decisions.

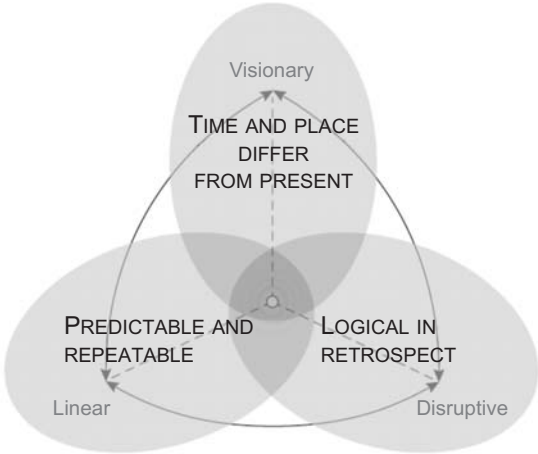


Diagram 1. The landscape of decision making.

The shape of Diagram 1 has been carefully thought out. In the lower left-hand corner, where the arrows meet, the present moment manifests itself in its most linear state. In it, cause-and-effect relationships repeat themselves. As we move forward in time, even in a very linear situation, the curve begins to turn to the right, because uncertainty increases as we move further from the present moment. In the lower right-hand corner, where the arrows meet, we see the present moment in a situation of chaos. The right-hand curve turns to the left, because when a chaotic situation is further away in the future, the probabilities of a future event or situation can be changed by decisions and actions in the present moment. The top corner of Diagram 1 represents the most remote relevant time horizon, which varies depending on challenge and organisation.

The reason why the lower line from left to right is not straight, as an imaginary line showing the present ought to be, is that below a straight line is a history of relevant events. This shape gives us the opportunity to ponder and understand the importance of history, and of historical analyses, now and in the future. We can use the landscape of decision making to reflect on future changes with a bearing on general education and those decisions of ours in the present that will help us succeed in the future. Situations 1 and 3 relate to the present moment: 1 on the linear side and 3 on the disruptive. Situation 2 relates to past matters; it is our history, our memory and our conception of our history.

We can use the Spanish national renewal programme as an example of what kinds of answers a linear approach in accordance with Situation 1 produces with regard to the future of education. The role of human capital is acknowledged a priori as a vital resource for economic growth and likewise as an element through which it is possible to achieve equality. In addition to the programme dealing comprehensively with the functioning and quality of the educational system, it also adopts a position on fundamental questions relating to compulsory secondary and third-level education.

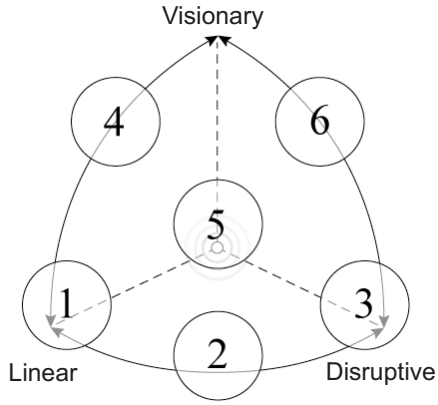


Diagram 2. Six types of decision making.

The Spanish reform programme has been implemented according to the following measures:

Measures

- to improve training in the care sector
- to improve basic education
- to improve compulsory education
- to integrate immigrant students into the system
- to make use of educational resources more efficient
- to produce scholarships and other aids to studying
- to improve secondary education
- to improve vocational education and general education
- to improve third-level education
- to facilitate access to information
- to develop further studies
- to link the information society to education

Each of the above categories of measures includes a detailed action plan and, if the measures are carefully and precisely planned, they should certainly improve the present situation. In other words, the future should look brighter after the plans have been implemented. But these measures will not help the nation to adapt to or take advantage of the changes that are happening in the environment.

Situation 2 tells about history. Despite that, it is an important source of improvement. If we examine the history of our society, we can understand why certain systems, organisations and problems exist in certain forms. For example, the present pension age of 65 years has its origin in Otto von Bismarck's Germany. The thinking in those days was that people who lived longer than that should be given a pension, because people were not expected to live much beyond 65. If the same criterion were

to be used today, the pension age would be a lot later – perhaps 78 for men and 81 for women.

Situation 3, a disruptive situation or even an imminent crisis, tell us that we have not been able to lead our nation or our organisation well, or that something completely unexpected has happened - something that we were not able to predict. If a decision-making situation has ended up in Situation 3, authority or crisis management is needed to deal with it. Indeed, Singapore's Deputy Prime Minister Professor Jayakumar points out that predicting the future is impossible, but that we can develop more intelligent systems and more flexible processes to help us encounter different situations.

Decisions of the type in Situation 3 are associated with our responsibility for the future. They manifest themselves as Situations 4, 5 and 6. Situation 4 is not a particularly unusual one, although it is located in the future on the linear side. Then it is not, perhaps, right to talk of information, but we are nevertheless in the area of knowable, predictable things. And when changes are predictable, we can prepare ourselves to encounter them. In Situation 4 traditional methods of prediction – trends, scenarios and extrapolations – function in a very stable operating environment.

In the middle of Diagram 2 we find Situation 5. It is in the future, it is neither linear nor disruptive, and we can describe it as complex. A situation of this kind can not be managed through top-down decisions. Creating the right kinds of enabling structures, be they then social, educational or technological, can lead to the emergence of better decisions from the bottom up, i.e. from every actor's own perspective. An example of this kind of approach is provided by Singapore's efforts to improve people's ability to perceive large amounts of information as well as to make exchanges of information and cooperation between different units more effective.

The Danes have chosen a distinction approach to education. Their case serves as an example of Situation 6, a disruptive situation in the future. When I discussed the PISA classification with a Danish expert and mentioned Finland's success in it as well as the Danes' (perhaps surprisingly) less good success, the reply I got was: "We don't want to succeed according to the PISA standards – we want our children to grow up innovative and creative". Several examples that support this statement are to be found on several levels in Denmark: Danfoss Universe, a theme park run by a Danish company, illustrates how exciting nature really is and attracts visitors from both all over Denmark and beyond the country's borders. Experimentariet is founded on experiences and offers opportunities to learn with the support of several corporate sponsors and the Government. Byproject Todenskiold, in turn, offers a chance to live out tales, a combination of play and learning in kindergartens and schools.

As the last, but by no means least example, I should mention Kaospiloterna, which has created an alternative learning programme, that is taken seriously and popular, for education. All of the above-mentioned Danish examples operate outside the borders of the agendas and institutions of traditionalist education. They violate the borders of what, when, where, how and with whom we can learn and educate ourselves.

In conclusion, we present six types of decision making that are building our future. Every one of them demands different operational strategies, which must be considered to make them specifically suited to Finland.

1 Effectiveness, when cause-and-effect relationships are repetitious.
2 Revision and re-definition of our system's basic assumptions.
3 Improvements in our reaction speed and our ability to make rapid decisions.
4 Prediction, contingency planning and preparation for what is to come.
5 Building enabling systems.
6 Using well thought-out tests, pilot schemes and experiments.

Japan – Korea – Macau

Päivi Lipponen

Japan preparing for an innovation leap

A large crowd of men in black suits are waiting for their own cars. Prestigious Mercedes limos glide to the spot in an ordered procession. Top Asian leaders are dividing the world at their joint meeting like the EU leaders in spring 2007. The sight is somewhat frightening; what will happen to us Europeans?

Asia's economy is growing and the power concentration of the future will be located in the triangle China, Japan and India. The countries are now taking back the place that the western countries with their superior weapons technology wrested from them in the 19th-century era of imperialism. Then, the Asian countries were yoked to the western economic sphere of power.

The Japanese economy is the world's second strongest. It is more than twice as big as China's. Japan has emerged from a protracted recession, which lasted three times longer than the one in Finland. Now the country's trend of growth has persisted for six years. A crisis in the financing sector has been taken care of and junk loans repaid. The price level corresponds to what obtained in the 1990s and competition has increased, because inflation is near zero.

Unemployment is low in Japan. In the past, the country was famous for its lifelong employment relationships. Now the labour market is flexible. Over a third of jobs have become fixed-term or part-time. Companies are actively trying to recruit employees and there is more than one job on offer for every young person graduating from university. The economic sector is worried about whether there will be enough people to fill the jobs that are available. Professor Yoko Ishikura says outright that the big challenge facing Japan is whether there are enough talented young people.

One of the causes of the worsening labour shortage is a changing age structure. Japan already has over 30,000 centenarians. The population is ageing faster than in Finland. Getting women into the labour force is seen as one solution to the problem. But traditions are an obstacle to this. In Japan, the role reserved for women is that of homemaker, or eschewing children. Combining motherhood and a career does not

belong to the country's respected traditions. A low birth rate, 1.29 children, confirms the assessment that for women becoming a housewife is something done because circumstances so dictate. How does Japan intend to cope with its labour shortage and arrange care services for its ageing population?

The threat and opportunity of China

Japanese companies are trying to improve their competitiveness. Japan is investing in East and South-East Asia. The region is a bigger trade partner for it than the USA and the EU combined. Labour-intensive industry has been transferred to China and Japanese companies employ many millions of Chinese. However, the Japanese are not prepared to export all competence. The initial rapture has abated. Criticism is being prompted by China's violations of patent and industrial rights, growing threats to the environment, a dearth of skilled labour and a rising wage level. Carrying out repairs and dealing with complaints offsets the wage difference in Japan's favour. Inputs into technology-intensiveness in production make it possible to establish factories in Japan. Then, wage costs do not soar to a level where they would prevent profitability.

Japan plans to boost the efficiency of its economy and increase competition by lessening the role of the state authorities and making administration more efficient on all levels. Energy sufficiency is a big problem, because Japan depends on imports for over 90 per cent of its requirements. The country has increased the efficiency with which it uses energy and is now the world leader in this field. There are 54 nuclear power stations. However, citizens do not want a new power station in their "own back yard".

A quick tour of Panasonic's showroom leaves the visitor dumbstruck. Watching a pop concert on a hypermodern TV set is like being a part of the audience there. Under development is the ICTAG system, which makes it possible to track a person constantly on one's own TV screen. Japan is trying in earnest to make an innovation leap or at least to consolidate its status as an "information technology" pioneer. Some 16 per cent of all new technical knowledge is generated in Japan. Innovation policy is the buzz phrase of the day. Japan is trying to renew its educational system on all levels and open up the governing bodies of universities to representatives of the corporate world.

Japan has gone through a domestic policy crisis. Prime Minister Koizumi's successor Abe lasted only a year in office. Whether Prime Minister Fukuda will succeed remains to be seen. Experts feel Japan is lacking in leadership. Uncertainty has only been increasing since the opposition gained a clear majority in the upper house elections.

Korea running down IT sector

South Korea has been marching in the vanguard of technological development. However, something is happening. Samsung has suffered setbacks in its IT business and is running it down. The company is firing 60 per cent of its senior management and

workers from the computer side are being transferred to Samsung-owned amusement parks and museums. There is a belief that the new motor of the economy will be found in bio- and nanotechnology. The question is: Will Korea itself be able to create something new or will it cope merely by mimicking other countries?

At the end of the Second World War the Soviet Union conquered the northern part and the United States the southern to expel the Japanese occupiers. The UN's goal was to unite Korea with the aid of free elections, but the elections took place only in the US-occupied zone, whilst the northern part chose a communist administration. The tensed atmosphere erupted into war in 1950. The Americans, fighting under the UN flag, wanted to free North Korea from the yoke of communism. China's intervention forced the belligerents to conclude an armistice three years later. The United States stayed in South Korea and there is still an American military base in the country.

Relatives that have remained on different sides of the border sustain tension between North and South. It is not possible to phone the North from the South or to send post. Nor to send aid in the form of food or clothes. A tourist oasis where relatives can meet each other or at least socialise through a video link has been established in the mountains of North Korea. For the moment, uniting the two parts is calculated to be too expensive.

The important Kaesong economic zone

The special economic zone that South Korea has established in the northern city of Kaesong is expected to grow to a cluster of 2,000 companies. The objective is to prevent Korean companies from relocating to China to avail of cheap labour. Kaesong is also an attempt to teach the North the ground rules of the market economy. It is an objective that will be difficult to achieve, because North Korea has already declared that the Chinese and Vietnamese economic models do not suit it.

Korea is the world's 11th biggest economy. Annual economic growth is around five per cent. Shipbuilding and the car and electronics industries have been the locomotives of exports, whose share of GDP has risen to about 70 per cent. There has been only slight growth in domestic demand. The government has imposed taxes and fees to prevent, for example, property prices from rising. People want to move to near good schools, because the right school makes it possible to go on to university.

The rate of unemployment is one of the lowest in the OECD countries. However, this does not tell the whole truth, because half of the employed workforce are in temporary jobs and protection against dismissal is poor. Youth unemployment is high and it is difficult for fresh graduates to get a foothold in working life.

The challenges that Korea faces are familiar in Europe as well. The birth rate is low and at the same time the country is home to the world's fastest-ageing population. In addition, the pension system is in difficulties, because not all elderly people have contributed to pensions and not enough money has accumulated in funds.

In conversations with Korean politicians Finland is praised for the absence of corruption. Even schoolchildren's parents in Korea give the teachers white envelopes.

Chairman Chung Ui-Wha of the Economic Committee went so far in his praise as to say that if their officials had the same high morality as their counterparts in Finland, Korea's economic growth rate would be really fast. He is trying to solve the problem of corruption by increasing civil servants' salaries and emphasises the importance of returning to traditional Korean values.

Twenty Finnish companies have operations in Korea. The country is a large market area, but difficult as an operating environment. English is not spoken, red tape has to be dealt with in Korean and a network of contacts is the alpha and omega of everything. The country is in free-trade negotiations with the European Union. The EU has a good reputation in Korea, because it has been able to deal with rows between neighbours and the integration process is seen to contain opportunities also for Korea.

Hong Kong and Macau are gateways to the Chinese market

Hong Kong and Macau boast splendid skyscrapers and countless banks. Both former colonies have gotten a new life as special administrative areas of the People's Republic of China. They have retained their capitalist economic systems by concluding Closer Economic Partnership

Arrangements (CEPA) with Mainland China, thus securing free trade. Hong Kong and Macau are still gateways to the Chinese market, but the hinge side has changed in China's favour.

"What is behind our dramatic economic growth is the Macau Government's economic policy, but it does not explain everything. The biggest factor is our motherland China. Our success is living proof of China's importance to Macau," explains Deputy Director for Economic Services Ieong Pou Yee.

Could there be any clearer way to describe the prevailing spirit among civil servants, in which, as was the case with the "Moscow card" with which Finns are familiar, good relations with Beijing are a guarantee of career advancement? Macau and Hong Kong live according to the "one country and two systems" principle. They are autonomous regions, but have an administration that Beijing has approved and an economic policy that it supports. Foreign and security policy are taken care of centrally by China. The People's Liberation Army is present, but the soldiers remain strictly in their garrisons.

Traditional industry has withdrawn to China

Both countries were once places where cheap junk was manufactured. Now Hong Kong is the centre of the Chinese financial world and services system, a place through which goods flows are channelled to the mother country. It is the world's 13th biggest banking centre, the sixth biggest currency exchange centre and its stock exchange is the second biggest in Asia. Macau enjoys the exclusive right to serve as China's entertainment centre. It takes care of gambling tourism and the related services, which account for half of Macau's GDP. The taxes on gambling that the casinos there collect

provide 75 per cent of the government's income. Strong investments are being made in new casinos and congress centres. Macau has already become the world's biggest gambling centre.

Macau's traditional textiles and footwear sector has withered away, because the Mainland Chinese have won out with the aid of cheap labour. Hong Kong's industry has likewise fled to Mainland China, where 12 million people work in factories that Hong Kong interests have bought. Labour is cheap and the trade-union movement is not a problem.

I felt like I had arrived in Limbo when I stepped into the gambling hall in Macau's newest casino, the Venetia. The size of 56 football pitches, the hall was full of gamblers placing their bets on the tables or feeding coins into slots. The Venetia is a bigger version of its famous namesake in Las Vegas. The service complex contains a luxury hotel, dozens of restaurants and shops. The Venetia is a glued-together replica of Venice: faux old-building facades, gondolas gliding along canals and merry male choir members marching down narrow alleyways. Above everything curves a light-blue sky with wispy clouds.

Macau has 24 casinos, which draw 22 million tourists to the island each year. The CEPA agreement allows residents of China's southern metropolises to travel to Macau for a good time. Business is profitable, because investors can get their money back in five years. A new underwater casino is due to open soon.

Neither country suffers unemployment. If anything, there is a shortage of labour. Hong Kong is making strong inputs into education and thirsts for educated young people from Mainland China to move to the region. Macau is likewise investing substantially in education, but many young people drop out from their studies to take up jobs spinning roulette wheels in the casinos. Labour for the casinos and hotels is enticed from Mainland China.

There are risks inherent in concentrating solely on tourism. That has been noted in Macau. Ieong Pou Yee outlined a plan to turn the region into a business bridgehead between China and the Portuguese-speaking countries.

I met influential Macau figures. Not a single one of them mentioned how only a few months earlier over 6,000 people took part in a violent demonstration against rampant corruption in the administration and workers' poor conditions and low pay. So far, Macau has enjoyed a reputation as China's model pupil and Hong Kong-style demands for democracy have not been heard there.

Japan and Korea – so far ahead, so far behind

Harri Jaskari

Finland was called the "European Japan" in the 1980s. We were proud of that because Japan was seen as a forerunner in economic productivity and increased welfare. Business representatives wanted information about Japanese companies' JIT (Just-In-Time) philosophy and government representatives were interested in Japan's significant investments on innovation policy. Korea followed Japan's example closely as the new eastern economic tiger and with its own large corporations took over world markets.

In the 1990s a recession began in Japan that lasted almost 15 years and at the end of the decade Korea once more followed Japan's example as it too fell into a deep economic crisis. Japanese society experienced great social changes. The youth did not want to sacrifice their entire lives in service of a large corporation any more, and women were fed up with their position as mistresses of the home. Western countries no longer considered Japan's sacrificial mentality and specialisation as the key to new economic growth. The example of a creative society was found somewhere else entirely.

Now Japan and Korea have undergone their own transformations and these countries have once more come back. After the required structural changes Japan's unemployment has been squeezed down to 3.8%, inflation is at less than 1% and businesses are actively recruiting new employees. Investments are now made in the production of technologically intensive products and research associated production is returning to Japan. People want to move production of the most advanced models back to the land of "zero loss".

Now it seems that once again Japan and Korea have a clear mission. Both nations have decided to be model countries of a ubiquitous society. They seek to spread the innovations of new technology everywhere, and of course being the test country does give a certain competitive advantage to the export of such products. Information in these countries is very mobile and moves very fast. At the same time people want to spread customer friendly information technology to every aspect of society. Taxation is used to support the adaptation of new technologies.

Translated from Finnish by Michael Nagler.

Are Japan and Korea looking further into the future? In this regard there are problems, in my opinion. For instance the birth rates in both countries are among the lowest in the world and society has indeed had its own effect on this as well. In Korea 30% of parents' income on average goes to children's education. The annual cost of child day care may be as high as •10,000. In Japan orientation towards work has been so intense in the past decades that there has hardly been any room for family. Women have risen in revolt and they do not want children. It seems that not all parents can afford to have children, or at least children who would have to be educated.

It is my belief that certain pieces of Finland's future can already be seen in Japan and Korea. We can learn from the clear strategy and goals of these societies, now that a goal has been once again found. On the other hand we should avoid the pitfalls of these societies compared to our own. The equality of opportunities and cheap but high standard education is one of our trump cards.

The ubiquitous society and the RFID technology that is making it possible

Osmo Kuusi

The Finns are still esteemed in Asia!

The past decade has seen the centre of gravity in world development shift clearly to Asia and especially the large Asian metropolises and the regions surrounding them. Is the vanguard of the world's intellectual leadership and cultural development likewise shifting to these regions? I sought an answer to this question on the Committee for the Future's trip to Asia in autumn 2007. The destinations for our visit, which took place between 30.9 and 9.10.2007, were three of Asia's major metropolitan regions: Tokyo, Seoul and the Pearl River Delta.

The trip lessened the concern of those who went on it that the spiritual leadership might already have moved to the Asian metropolises. The delegation from the Committee for the Future was interpreted nearly everywhere as more teacher than pupil. Finland's success as measured using many indicators was a subject of constant interest.[1] Especially in Seoul, the Finnish schools system was the recipient of near-wor-

1 On the visit to Tokyo the Committee for the Future heard the views of Professor Yoko Ishikura from Hitotsubashi University. He compared Japan and Finland using Michael Porter's and Scott Stern's index, with the aid of which a country's innovation capacity is measured. Finland was ranked among the top five in all of the index's five dimensions. No other country did so consistently well in all dimensions in the measurement, which was conducted in 2004. The countries that came closest in this respect were the USA, Japan and Singapore. Japan's and Finland's profiles were very close to each other in four out of the five dimensions examined. The difference between the two countries' rankings in these dimensions was three places at most. The two other destinations for the delegation's visit, Korea and Hong Kong, made it into the top ten only in one of the five dimensions. The delegation also visited NISTEP (the National Institute of Science and Technology Policy), which is responsible for Japan's technology-related futures research. Finland's success as measured with innovation indicators and the similarity between the two countries' innovation profiles are explained by the fact that NISTEP has especially compared Japan's and Finland's innovation systems in a joint project with the Finnish Funding Agency for Technology and Innovation (TEKES).

ship. How is it possible that Finnish schoolchildren do so well in international knowledge and skill comparisons, even though they put a lot less work into learning than children in South Korea do? Is it really possible to offer an entire age cohort of youngsters an excellent education without it becoming dizzyingly expensive? With great curiosity, people asked what it is in the Finnish lifestyle that leads to such excellent results.

Concern about ageing of the population was even substantially greater in Japan and South Korea than in Finland. The birth rate per woman of childbearing age is clearly lower in these countries than it is in ours. There is even talk of a childbearing strike by young women. In 2005 the average number of children per mother was 1.2 - 1.3 in Japan and South Korea, whereas the Statistical Centre's demographic review for 2007 reveals that the corresponding figure for Finland was 1.8. Since, in addition, the Japanese have the world's longest life expectancy, on present trends the over-65s' share of the population will be, according to the Japanese statistics office, all of 37.5% by 2050, and under-15s will be only 13.6%. Thus it is no wonder that the Committee for the Future's representatives were eagerly asked for advice on how to resolve the demographic crisis.

It is a consolation to be able to note that there is much in the Finnish way of life that is worth holding on to. Compared with the metropolises of Asia, Finland offers children and adolescents, irrespective of wealth, quite good care from early childhood onwards as well as good prerequisites for learning and cultural development. The fruits of the Snellmanian conception of education and culture are unique in the world. In contrast to what Florida's measurement (2002)[2] of creativity in regions would suggest, the Finns' homogeneity would appear to be a strength. Perhaps the reason is that people in Finland nowadays hardly bow to masters and that a certain culture of honesty and fair play has been preserved in our country.

Thus Finnish basic values are worth defending. A culture founded on equality is one of our country's important national assets. The greenhouse effect showed its unpleasant side in southern Finland in winter 2007-08. If "three November winters" become more common, it may be that there will not be much of a crush to get into Finland in the future, either. Finland may remain quite homogeneous[3] where the population is concerned, although with a lot more open attitude than in the past to influences coming from elsewhere. Obviously we shall continue to have quite good chances of holding on to what we consider especially valuable in our national heritage.

2 Florida, R. (2002) The Rise of the Creative Class, Basic Books, New York.

3 In its homogeneity Finland resembles Japan, which has remained quite homogenous in population and culture. Both countries have also depended strongly on their own research and development activities rather than, like Ireland, enticing multinational companies. According to Yoko Ishikura, whose views the delegation heard in Tokyo, Japan is having to pay constantly growing attention to internal innovation, because the country faces the dual threat of a falling population and a rapid increase in the proportion of aged people. Also in this respect, Japan resembles Finland, although the birth rate in Finland has remained at a clearly higher level than in Japan.

The ubiquitous society - the second stage of the information society

Ageing Japan and Korea and the more youthful Hong Kong and Macau are, in common with Finland, making strong inputs into innovation. The visit to Asia by a delegation from the Eduskunta's Committee for the Future provided an excellent opportunity to familiarise ourselves with the methods by means of which the major metropolises of Asia are building their innovation-based economies. Will the economy of the future that succeeds through innovations be a ubiquitous society? The ubiquitous society is what many have begun calling the second stage of the information society, which began around 2000 and in which the emphasis lies increasingly in applications of information technology and less in adopting completely new technologies. In September 2006, during the Finnish Presidency of the EU, a major conference with the theme "i2010 – Towards a Ubiquitous European Information Society" took place in Espoo. In his book Jokuveli (meaning "Some Brother", 2008) Mika Mannermaa describes the "everywhere society" or ubiquitous society in terms of features (as displayed in Diagram 1).

According to Mannermaa, "the ubiquitous society is a 'some brother' society in which some or other brother watches everything everywhere, knows more and more and never forgets. Although the society is more technological than ever, ethical and societal thinking and discourse will have a decisive influence on the form in which the some brother society is implemented." The features of the ubiquitous society that Mannermaa (2008) recognises can be briefly characterised as follows as excerpts from his book:

- *Intelligence in objects – the Internet of Things* is a global network in which non-humans communicate and perform functions independently of humans. They give each other tasks, learn and alter their functions. Intelligence is in car tyres and control centres, the walls of houses, a packet of minced meat in a shop, a motorcyclist's jumpsuit, a lift ticket at a ski centre, a teddy bear, granny's pillbox, and many other places.
- *Some Brother* (or *Some Sister*) resembles, according to Mannermaa, more the "invisible hand" that guides Adam Smith's classical liberal market than Orwell's Big Brother, who dictates development. In a good Some Brother scenario, the societal totality steers towards being a "society of gentle oversight, cognition and one that is unforgetting" without any individual instance guiding it. However, technology makes also the scenario of an Orwellian state possible. A threat that also exists is the supremacy of market forces or the power of the wealthy (timocracy).
- *Aquarium life* means that a mobile phone tells every instant where we are, we can be tracked as we surf the Internet, there are surveillance cameras everywhere. In the urban environment of the future, advances in shape-recognition technology will make it possible to track a person's every move. Automatic

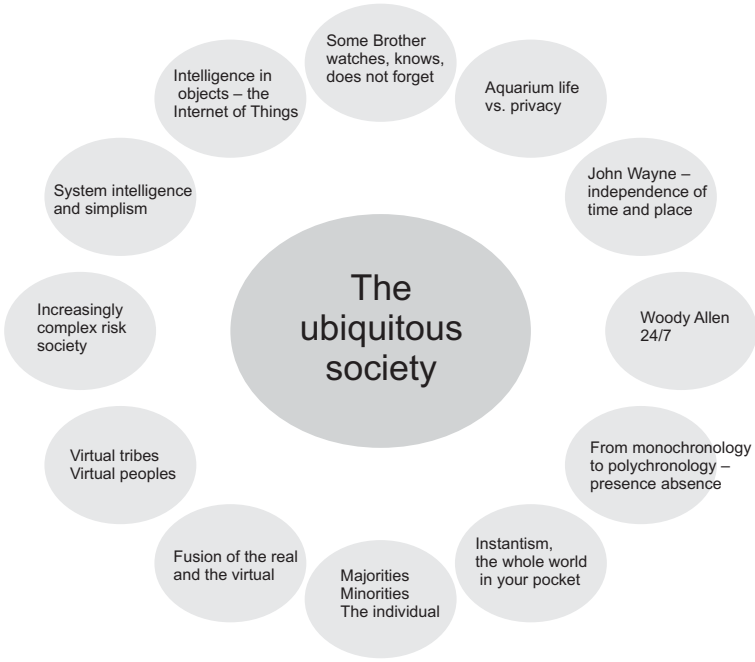


Diagram 1. The ubiquitous society. Adapted from Mannermaa 2008.

systems in a health centre will keep watch to check whether granny has woken up at home this morning, whether her heart is beating and make sure that she has taken her medication. Tapes from surveillance cameras and pictures from camera phones will help solve many kinds of crimes. Drivers who exceed the speed limit will be caught by automatic monitoring systems. The limits of privacy will be the subject of an ever more intensive discussion. An Internet message sent in a moment of carelessness by a 15-year-old may prevent him or her beginning a parliamentary career at 30. Mannermaa and Risto Linturi have a discussion in the book about whether efforts should be made, in the name of privacy, to prevent aquarium life from becoming a reality. They conclude that the alternative to a totalitarian society is living within glass walls. There are hiding places even in an aquarium. Those especially in need of them are the small and weak; let the predatory fish remain visible.

- *New age John Waynes*, itinerant professionals, are growing in number, in Mannermaa's assessment. More and more experts in some or other field are corporatising themselves and selling their know-how in an expert company comprising one person or a few colleagues. Examples of this phenomenon can be found in the sectors of information and communication technology, communications, architecture, biochemistry, management, medicine, teaching, various fields of technology, environmental questions, civic activity, the social sciences and philosophy.

- *The Woody Allen model of society* is founded on the idea that the society of the future will always be open in all respects, 24 hours a day, seven days a week; shops, banks, cinemas, public offices, universities, restaurants and fitness centres. Mannermaa has named the phenomenon on the basis of a statement attributed to Woody Allen: "I want to live in Manhattan, because if I happen to wake up at three o'clock in the morning and feel like having Chinese chicken soup and a spring roll, I can get them in Manhattan at any time."
- *Time has become polychronological, multi-stranded:* A person is always doing several things at the same time. Earlier, things were done in sequence, but processing is now simultaneous, parallel. By participating in a meeting for only part of the time, a person is simultaneously present and absent. A person attending a work meeting checks his or her e-mail and text messages, replies to them and surfs the Internet through a wireless connection.
- According to Mannermaa, the phenomenon called *instantism* is strengthening. Information, entertainment and communication must be obtainable at once. People become accustomed to thinking that they have everything with them; in principle, one has the whole world in one's pocket. Someone can be sitting on a rock by the shore of a remote lake, but at the same time has access to "all" of the information in the world, entertainment, their own work, links to relatives and also the possibility of exercising influence in society. There is no need to go anywhere, nothing need be waited for.
- The old *class boundaries* that once divided peasants, workers, white-collar employees, capitalists have disappeared. Now it is more or less impossible to decide on the basis of someone's appearance to which social class he or she belongs. The same applies to people's thinking, world of values and their life in general. Mannermaa predicts that the consignment to history of uniformities will apply also to cultures, religions and non-religions as well as to ethnic groups. In the future we shall all belong to more and more minorities – deliberately. It will be possible for someone to be at the same time a corporate executive, a member of a bikers' club, have a seat on the local municipal council (or virtual decision-makers' network), be a Plan godparent or belong to the global virtual tribe of amateur orchid growers.
- *The real and the virtual will fuse.* A phenomenon that will strengthen over the long term is one that Mannermaa calls "surfing in the real world". Google Earth is a budding example of this. Surfing in the real world will have numerous economic and societal applications, in such things as inspecting the state of the environment, police work and rescue tasks, administration, planning and the everyday life of the individual. It may become increasingly difficult to distinguish between the real and the virtual in the future. In the long run, it may not even matter. "What is real, what is virtual, who cares?" says a young person in 2010 that Mannermaa quotes. On the other hand, of course, Mannermaa finds many reasons for completely disbelieving him.

- *Virtual* tribes already exist, dispersed in many parts of the world. The example that Mannermaa presents is a community of futures researchers. Its coalescence into a tribe is promoted by organisations in the sector, the World Futures Studies Federation (WFSF), the World Future Society (WSF) and the Association of Professional Futurists (APS). Conferences are held in various parts of the world, but most interaction is virtual. One can also speak of virtual peoples. The well-known futures researcher Sohoil Inayayatullah calls Al-Qaeda one of these. Perhaps Greenpeace could be regarded as another. In Inayayatullah's view, large multilateral corporations are also virtual peoples. Microsoft and Nokia are at least global virtual tribes, and perhaps even virtual peoples.
- *The ubiquitous society* is an increasingly complex *risk society*. The sociologist Ulrich Beck made the concept risk society well known in the 1980s. He highlighted the material risks that an industrial society faces: traffic accidents, nuclear power stations and oil catastrophes. All of these risks still exist. In addition to them, we now have to contend with a growing number of immaterial virtual risks: crashing information systems, viruses and, for example, power blackouts. As time goes by, the breakthrough into the foreground of bio-, material- and nanotechnologies will engender new risks that are largely unknown for now. According to Beck, the monitoring and control systems that have been devised to manage risks create new threats to such things as people's data protection. However, as Mannermaa points out, the modern society can also make it possible to do things that couldn't be done earlier. For example, if your car breaks down in a snowdrift on a remote road in Lapland, you can use your mobile phone to summon help, something that was not possible 20 years ago.
- *Increasing complexity* presupposes a better understanding of totalities. What does it mean if the biosectors are developing in one direction, information technology in another, politics, environmental issues, people's values and countless other matters all in their respective directions? The science system is built on the fact that we are as good as possible is special scientific disciplines and questions. We know everything about nothing.
- *The basics of systems thinking* should be taught to children already in the comprehensive school. According to Mannermaa, a philosophy of simplicity, which is called simplism, will be a prerequisite for managing complexity before long.

The Committee for the Future had the opportunity on its visit to Tokyo, Seoul and Hong Kong to study how the challenge of the ubiquitous society is being interpreted in the world's ascendant centres. Its visit confirmed the impression that the ubiquitous society forms the framework in which the innovation-based Asian economies are being built. In all of the places visited, either a separate ubiquitous society programme

was in progress or some or other technology of central relevance from the perspective of the ubiquitous society vision was the focus of special attention.

On its visit to the Japanese Ministry of Internal Affairs and Communications on 2.10.2007, the delegation was given an outline of the "u-Japan" strategy, launched in 2005 and aiming at 2010. On its visit to the Panasonic Centre in Tokyo the delegation was shown the latest development in RFID technology. In Seoul on 5.10 it was given a presentation on Korea's ubiquitous society programme "Let's build a beautiful ubiquitous society", the special focus of which is new modes of communication. Among the matters outlined to the visitors at the R&D Centre in Hong Kong on 8.10 were the new ways in which RFID technology can be applied to logistics. In the evening of the same day, the delegation was able to discover that in Macau living in a virtual world has been taken really far.

The U-Korea programme has focused on new forms of communication: HDTV, Data Broadcasting, Mobile Broadcasting, WiBro; IPTV, Telematics, e-paper. Themes receiving special attention are Korea's competitiveness in new media, training for experts in the field and creating ethically tenable practices to be followed in communications. The Koreans have been actively using the professional expertise of the global community of futures researchers in their programme.

The largest-scale of the ubiquitous society projects that we visited is the u-Japan one. All of the technologies that make it feasible are already in fairly general use. One central objective in the strategy has been to link together the information society's various instruments: PCs, mobile phones, home electronics, GPS, RDIF tags, smart cards, sensors and cameras. The objective set for the strategy is the creation, by linking various technologies, of a society "where anyone can get anywhere and access any service from anywhere and at any time". A new feature of the u-Japan programme compared with earlier e-Japan programmes has been an emphasis on the "Internet of things" that Mannermaa mentions. What is making this possible is now especially RFID technology, which also Hong Kong has made a special focus of development. In fact, there are good grounds for the assertion that RFID is becoming the key technology of the ubiquitous society. The last part of this article is devoted to this technology.

Radio Frequency Identification – RFID

The simplest application of an RFID solution illustrates its modus operandi. In it, a barcode is replaced with a microchip and a tiny antenna to form a tag, which is read by a device that detects radio waves rather than by an optical reader. Present-day microchips are generally made from silicon, but the use of other materials will be possible in the future. In addition to the microchip, antenna and reader, the fourth essential component of an RFID solution is a database, into which the data collected from the tags are collected. RFID differs from positioning technologies like GPS in that the tag and the reader must be close to each other. At present, the distance between tag and reader can range from a few centimetres to at most a little over ten metres. In the future it may be possible to read tags as much as 100 metres away. However, if a reader is connected

to a telephone network, a message read from a tag can be relayed to as far away as the other side of the world.

As is the case with reading barcodes, standardisation of markings is of crucial importance with reading RDIF tags as well. Tags attached to goods have to be as uniformly readable in China and the United States as they are in Finland to ensure that an item moves smoothly from one place to another and its origin can be identified. The number standard GTIN (Global Trade Item Number), which is sufficient to recognise the type to which a marked item belongs anywhere in the world, has been developed for reading barcodes. Correspondingly, present-day tags contain a standard code number (called Electronic Product Code or EPC), which is sufficient to identify the item in question. Barcodes are read optically and can contain only a very brief general item of information about the product. EPC, by contrast, is more precise and capable of identifying an individual product and not just that it belongs to a certain product category. If an item bears a tag containing an EPC code, its itinerary can be traced all the way from the manufacturer to the end-user. If the tag remains in or on the product, the product can be identified as the same one even years after its manufacture.

An essential difference between tags and barcodes is the considerably greater amount of data that "fits into" a tag. In addition to enough data for identification, the microchip can contain, for example, biometric data like a digitised image of a fingerprint or a photograph. It can also contain a lot more data that are quite different from what is needed for identification. Combined with a sensor, a tag can, for example, constantly collect data on its ambient temperature. This property has already been put to use in papermaking, with a tag following a pulp mass through the machine and enabling its temperature to be monitored.

Alongside the microchip, the other key component of an RFID tag is its antenna. Its task is to transfer data from the tag to the reader by means of radio waves. Generally speaking, the bigger the antenna is, the further away the data that the tag contains can be read. The device used to read or scan the tag likewise contains an antenna, which it uses for contact with the tag. Readers vary in size, weight and power and they can be either permanently located in a certain place or portable. Although everyone who uses a suitable reader can scan a tag, RFID systems can require user identification to prevent unauthorised use. The difference between reading an RFID tag and a barcode is that a tag and a reader can communicate with each other even when there is no line-of-sight contact between them. Thus tags can be "concealed", e.g. inside packaging. Compared with a barcode reader, a tag reader can read several tags simultaneously, which speeds up processing of their contents. Using an Anti-Collision Protocol, as many as 100 RFID tags can be read at the same time (Koskinen 2007).

Tags can be divided into three categories on the basis of how they communicate with the reader:

- Passive tags lack a power source and can not initiate communication. It is the reader that creates the contact between the antenna and itself. Depending on the signal it receives, the tag either responds or does not respond to the in-

coming radio signal. A passive tag can in theory respond to a signal reaching it from up to about ten metres away. Environmental circumstances, such as wind and metal surrounding the tag or the disturbing effect of water limit the distance in practice to about three metres or even less. Passive tags are already being used in many applications, such as bank cards, travel tickets and key cards as well as increasingly to track consumer products in transport. An important application from the consumer's point of view is, for example, using tags in airline baggage to make sure it gets to the right destination. Depending on the passive tag's memory capacity and what efforts have been made to make it difficult to read, the price of a tag in 2007 ranged from less than 10 US cents to several dollars. The price of a passive tag is decisively determined by the number of similar tags used in an application, i.e. the possibility of mass-producing them.

- Semi-passive tags are likewise incapable of initiating interaction, but they do contain a battery. With the aid of the battery, the tag can collect data for such purposes as monitoring the ambient temperature. Combined with sensors, they can, for example, form so-called intelligent dust. One of the things that intelligent dust can do is examine temperature changes in detail within a certain space. The Federal Trade Commission forecast in 2005 that the price of a semi-passive tag would have fallen to around $10 by 2008, compared with the roughly $100 that they were costing when the forecast was made.
- Active tags have a power source, which enables them to initiate communication with the reader. They are generally capable of interacting at distances of up to about ten metres, but when very short wavelengths are used, the distance can be as much as 100 metres. The Federal Trade Commission estimated in 2005 that active tags then cost at least $20, but the price is rapidly falling. Road tolls have been a typical application. Cars fitted with active tags can pass a toll booth without stopping.

Besides its power source, other important features that determine a tag's properties are the wavelength of the radio signals it uses as well as the possibility of changing the tag's data content with the aid of a reader.

The shorter the wavelength a tag uses, the greater the distance at which it can be read. Because readers operate only at short distances, they do not usually interfere with other radio traffic. This makes it possible for them to operate at very many wavelengths. For the present, global agreements allow for communication at the frequencies 125-134 kHz, 140-148.5 kHz and 13.56 MHz to take place globally in RDIF systems without special permission. If the frequency of the radio waves used is less than 135 kHz, the tag is called a low-frequency tag (LF tag). Tags like this are used for such purposes as identifying animals and in car keys that use RFID. A tag used in a system that operates in the 13.56 MHz band is called a high-frequency tag (HF tag).

Both LF and HF tags can be passive. Scanners can read HF tags faster than LF ones. HF tags are typical in smart cards as well as in travel tickets and key cards. VHF

and UHF tags that use frequencies higher than 300 MHz are also under development. An RFID system that operates in the frequency band 350-433 MHz is being tested in England. The advantage of a system using such a high frequency is that tags can be read at distances of as much as about 100 metres and the signals have a good capacity to pass through materials. This is important when, for example, tracking containers (Koskinen 2007).

Yet another feature that determines interaction between tag and reader is whether the tag is read-only or whether its data content can also be changed with the aid of a reader. Read-only tags are useful for such purposes as labelling products. The ability to change the data content is important in order for the tag to be re-usable. The problem with these tags is that they are not only more expensive, but also operate only at shorter distances.

Alongside the microchip, antenna and reader, the fourth key component of an RFID system is the database that compiles and interprets what is read. A 96-bit Electronic Product Code (EPC) contains several fields, by means of which the manufacturer (ABC company), the product (beer), the size or packaging of the product (24-bottle crate) and a number sufficient for precise identification can be read. An EPC makes it possible for a product to be tracked all the way along the supply chain. The EPC is complemented by an Object Naming Service (ONS), which directs the tag reader to the server or servers where the data associated with the tag are stored. The information concerning a tag that is relayed from a server can be combined with other data to initiate the measures that the data give rise to, such as debiting a bank account for a withdrawal.

One key application of RFID technology could be the possibility of precisely ascertaining the materials from which the product is made and the kinds of manufacturing stages that it has gone through. With safety and health in mind, it is important to know what materials a product contains, such as the ingredients that have gone into a food product. Consumers are also increasingly interested in the responsibility those who have participated in manufacturing it accept with respect to the use of labour. In the future, an RFID code will make it possible not only to track a product's movements from manufacturer to end-user, but also the subcontractors that have had a hand in its manufacture and the operating principles that they observe. So far, consumers' opportunities to themselves open the EPC codes that products contain have been quite limited. The interests of consumer and producer coincide in such matters as evaluating the authenticity of pharmaceutical products. If medicine users or their representatives could verify a pharmaceutical product's authenticity using their own reader, this would benefit both producer and consumer.

RFID tag readers can be either fixed or portable. In the latest applications, the tags and especially their readers form systems that are connected to other data-transmission channels and especially the Internet. Our delegation visited the Panasonic Centre in Tokyo, where we were shown a new-generation application based on fixed readers. In this application, which is still in the development stage, a tag was attached to a schoolchild's clothes. Using readers on poles along the way to school, the child's movements could be tracked by combining the data received from many readers. If

the child deviated from the correct course, i.e. was no longer within range of any of the readers, the system raised the alarm. A comparable application is ideal for tracking the movements of senile patients near a care institution.

If a tag is inserted within the body, it can be used to, for example, track the movements of prisoners. A solution that has been conceived in Japan would enable a car's movements to be controlled by means of constant interaction between a tag in the car and readers. It would involve a reader being constantly able to transmit back to a car it detects signals that determine its movement and speed. Guidance of this kind could be useful in assisting persons of less than full physical ability in their driving. Looked at from the perspective of data protection, solutions of this kind feature properties that are problematic. Because alarms are relayed only to certain persons - an alarm centre, the mobile phones of a child's parents, and so on - what is involved is a kind of transitional stage between a "some brother society" and a Big Brother one.

If persons are marked with tags, their identification can easily be accomplished by means of a mobile reader. A reader might become a standard feature of a mobile phone. Then tagged persons would be identifiable at a meeting and basic data describing them could be read on a mobile phone display. The reading device could also be, for example, a glove that contains a special reader. Mobile readers can be forecast to have great importance in the use of service robots. An automatic medicines distributor in a hospital can dispense the prescribed doses on the basis of the patient's tag. A forklift truck operating without a driver in a warehouse can identify precisely the batch of goods that it is looking for.

Security problems associated with RFID systems

RFID technology is a key facilitator of the ubiquitous society and thus its risks are associated with nearly all of the features of this society that Mannermaa (2008) identifies. A questionnaire-based survey of companies using new information technology conducted by the Japanese Ministry of Transport and Communications in 2003 revealed that the companies see unresolved issues in at least the following directions:

- Personal data protection
- Security risks associated with information networks
- The high operating costs of information networks
- The stability of information networks
- The high prices of terminal devices and RFID tags
- Ease of use of terminal and other devices

The problem that is currently the most difficult to deal with and is likely to remain so in the future as well is that of personal data protection. Unauthorised monitoring and reading of RFID tags is a major concern. The contents of tags can be encrypted using special protocols. Tags that use a dependable encryption protocol are often a lot more expensive and require more power than those using simpler encryption methods.

Therefore many manufacturers resort to cheaper and consequently less data-secure tags. Encryption methods have been successfully cracked in, for example, Britain. There it took only 48 hours to crack the encryption code used in passport tags and leave data on millions of citizens vulnerable to snooping (Koskinen 2007).

An RFID tag continues to function after the product containing it has been bought, for which reason it can be availed of in an undesirable way. For example, a portable reader can reveal whether the boot of a car contains valuable items. The response to this problem is the so-called Clipped Tag, which two IBM researchers have proposed. After paying for the article, the purchaser can tear away a part of the Clipped Tag, whereby the possibility of reading it at a distance any longer than a few centimetres is eliminated (Koskinen 2007).

A third risk to data security is eavesdropping on an RFID reader. However, this would have to be done at quite close range. Electronic eavesdropping on a reader is possible kilometres away only if it operates on a UHF or higher frequency. Power weakens radically at lower frequencies, such as those in the 13.56 MHz band, and then an eavesdropper needs to be within a few metres of the reader (Koskinen 2007).

An unpredictable factor from the perspective of the future of tags, especially when they are installed within the body, is their effects on health. There are indications that tags used to identify animals have caused cancer. Because what is involved are the health effects of radio waves, the possible health risks of tags are being linked to the still-ongoing discussion of the health risks that mobile phones may cause.

Future prospects for the use of RFID technology

How quickly the use of RFID technology increases will depend decisively on the price of applications. Doctor Peter Harrop (2006)[4] has presented the following forecast of the relationship between the number of tags used and their average price. Measured in terms of numbers, cheap passive tags that can be attached to consumer goods will be in a decisive position, especially when they go into mass-production. The dotted line in diagram 2 below refers to the prices of the cheapest tags sold on the market. Once mass production of the cheapest tags has begun, the average price of tags will approach the prices of the cheapest ones. Achieving a production volume of one trillion presupposes a fall in the average price per unit to only 0.1 US cent. This will be possible only by printing the tag directly onto the product or package.

As the diagram reveals, still in 2006 the average price of a tag was several times greater than that of the cheapest ones (note that the scale is logarithmic!) This means that the most expensive tags were in the most important position in the market. According to Harrop, tags used by the military cost an average of $9 in 2006; these included, in addition to cheap passive tags, active ones costing tens of dollars each. The tags used for identifying containers were all active and cost an average of $29 each in 2006.

4 www.idtechex.com The price sensitivity curve for RFID (read 2.4.2008)

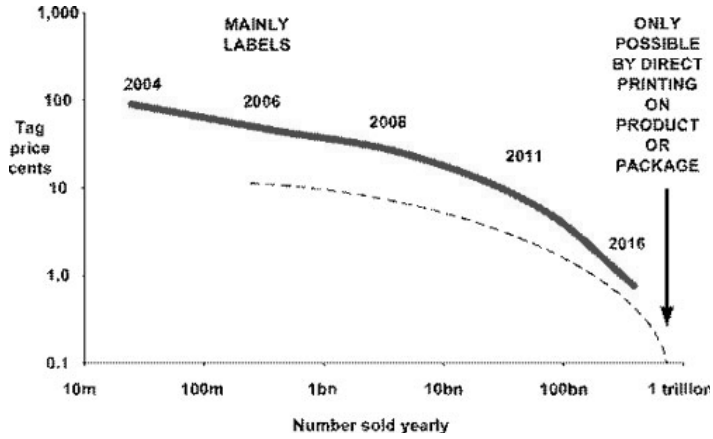


Diagram 2. The price sensitivity curve for RFID.

At the bottom end of the price scale were the passive tags used in smart cards and the average price of which Harrop estimated at $2.2. In fact, according to him, the price of a tag is an almost secondary factor in the case of the most expensive tags, because it represents only about 20% of the total cost of an RFID application. According to an expert consulted by the Federal Trade Commission, hardware accounted for only 3% of the total costs of an RFID application in 2005. In his appraisal, developing software to interpret and store the data relayed by tags accounted for 75% of the total cost of introducing RFID (Federal Trade Commission 2005).

It is difficult to make a reliable estimate of the present size of the RFID market. That is due to the difficulty of reaching agreement on the degree to which many systems that use data-transmission can be categorised as RDIF applications. According to one calculation, the size of the market in 2007 was about five billion dollars. In addition to tags, the market in this calculation comprised, inter alia, readers and programming for RFID solutions.[5] The same source estimates the number of tags sold in 2007 at 1.74 billion. Volume-wise, this development corresponds quite well to Harrop's picture from 2006.

In any event, the use of RFID to identify containers and pallets is now an everyday reality for several actors and crate-level identification has likewise been successfully done on a pilot scale also in Europe. In the United States, the hundred biggest suppliers to the leading current consumer goods retailer Wal-Mart have been sending their goods in crates with RFID tags for several years. Product-specific identification is no longer just a future prospect, because a few retailers in Europe are already using it. So far, however, the articles identified have been relatively expensive items, such as books, garments and CDs, in the cases of which the numbers of tags used are not large compared with what would be required in the case of foodstuff items (www.rfidlab.fi).

In any event, the potential in making logistics more efficient is enormous globally. According to one expert estimate, problems associated with delivery chains caused

5 www.idtechex.com RDIF Forecasts, Players & Opportunities 2008-2018 (read 2.4.2008)

losses of as much as $180-300 billion in consumer goods production in 2005. These losses could be avoided if it were always known exactly where consignments were at any given moment (Federal Trade Commission 2005). According to the same source, a fall in the price of passive tags to around five US cents could make widespread application possible (Federal Trade Commission 2005). This corresponds quite well also to Harrop's central message.

The use of RFID technology has been increasing especially rapidly in China. The reason has been above all applications associated with the Olympics in Beijing in 2008. Tickets for the events are based on RFID technology and it has also been used to add efficiency to the food supply. It has been calculated that demand for RFID technology grew by all of 600% between 2004 and 2007 (CCID Consulting 2008). It may be that the major mobile phone manufacturers Nokia and Motorola are making a combination of mobile phone functions in China and RFID technology a test area. In the Shenzhen region, the University of Hong Kong's E-Business Technology Institute conducted a trial that demonstrated the efficiency of RFID technology in recording containers arriving in and leaving a storage area. The new solution increased the efficiency of the function by about 30% (www.eti.hku.hk). Japanese companies are investing strongly in RFID technology. Sony, Toshiba, Hitachi and Panasonic formed the Home Appliance Electronic Tag Consortium in late 2005.

Certain weak signals that the prices of tags and RFID solutions could fall decisively in the near future or by around 2015 at the latest are discernable. The possibility of printing tags directly on packets has been a focus of active research. Efforts are in progress to print tags on materials other than silicon. A consortium of European companies is developing a solution of this kind for semiconducting polythiophene polymer. The polymer tag PolyID, already in operation as a prototype, is passive and is read by an RFID reader using a 13.56 MHz wavelength.

In March 2007 the Internet magazine Computerworld reported that Intel had developed a cheap microchip that it believed would substantially reduce the price of tag readers. The Intel R1000 is able to fit 90% of a typical tag reader's components into an 8mm x 8mm chip. The chip can be used in both devices that read close-up and those that read at a distance. The new small chip also requires markedly less energy than earlier solutions. Its small size and the way it is made using printing technology makes mass production possible and will even further reduce the price. The R1000 also includes a programming tool, which can be used in readers that programme tags. Intel estimates that the price of a reader chip to the end-user will be around $40.

Main literature sources:

Federal Trade Commission (2005) RFID Applications and Implications for Consumers, Workshop Report from the Staff of the Federal Trade Commission, Washington

Koskinen, Lari (2007) RFID-tekniikka ja sen sovellukset, research project for Tampere Polytechnic, IT training programme, Tampere 2007

Mannermaa, Mika (2008) Jokuveli, WSOYpro, Juva

On democracy, ways of thinking and cultural heritages

Paula Tiihonen

A lot of words, but one is missing - democracy

When we assess what a book, a speech, a lecture, a policy, a scientific career or a study trip has given us, the consideration that is of essential relevance is not just what is spoken of, but also what is left unmentioned.[1] The Committee for the Future's trip to Asia can be compared to the literary output of the World Bank's new Chinese chief economist Justin Lin Yifu. A lot of words and figures, diagrams and convoluted depictions of the past, present and future, but one word – and with it perhaps a lot more – is conspicuously absent. That word is "democracy".

As though using his solid experience to slash with a sword, the man who was a powerful US Defense Secretary in the early years of the 21st century, Donald Rumsfeld, chose culture – in this case a poem – to express the difference between the spoken and the unspoken in the hectic political situation surrounding the beginning of the war in Iraq in 2002: [2]

Donald Rumsfeld: The Unknown

As we know,
There are known knowns.
There are things we know we know.
We also know
There are known unknowns.

1 Because this is an essay and a travel report containing independent interpretations, the literature references are general in character.

2 Feb. 12, 2002, Department of Defense news briefing http://www.slate.com/id/2081042/ The Poetry of D.H. Rumsfeld. Recent works by the Secretary of Defense. By Hart Seely. Posted Wednesday, April 2, 2003

That is to say
We know there are some things
We do not know.
But there are also unknown unknowns,
The ones we don't know
We don't know.

Looking at the matter from the perspective of assessing both the first chief economist in the World Bank's history to come from Asia and the Committee for the Future's study trip to that continent, what we are dealing with in democracy is an important matter. Therefore, as a researcher, I am adding a few thoughts on the future of democracy that the trip stimulated to my personal travel report.[3] In line with Asian holistic thinking, namely, the way I see things is that democracy has quite a lot to do with all-round education and urbanisation. Likewise looking at the matter in the same holistic way, I am convinced that over the long term it is important for all of us that democracy, equality and fairness between people are taken care of at least reasonably well not only here at home, but also in all of the arenas where in this shared open world of ours our companies, politicians, scientists, activist citizens and other actors operate. We can no longer turn a blind eye and simply point out that we are only engaging in trade, politics is their internal affair, we can't start trying to solve other people's problems and time will sort things out somehow anyway. Besides, it has never been possible anywhere to divorce economics and trade from politics. In democracy, companies and the states from which the people in companies operate, bear a certain responsibility, which transcends national frontiers, for the problems that they cause for people and the natural environment. The linkage between politics and economy is reflected in the most important matter of all, i.e. the matter of war and peace. Wars have often begun as economic conflicts and an issue that has always been involved in them has been that of bread, something to put on it and the sharing of both. All in all, it is natural that earlier deliberations on themes of democracy are continued a little in this article.[4]

A further reason for linking education and democracy together is that I recall well my first trip to Asia, which I made with the Employment and Equality Committee just over 15 years ago. We spent two weeks in Singapore, Malaysia, Korea and China. What memories remain indelibly in my memory from the trip? The following: 1) I was not convinced of the argument, then being emphatically made in the international discourse, that Asian values differed from those of the West in that democracy was not regarded in them as being so relevant or perhaps even useful, 2) I initially made the mistake of seeing a similarity between Japanese and Korean architecture and the other aspects of cultural heritage that are visible to people, 3) when I went for a morning stroll in Korea, I thought I was going to see a street dance performance, but it turned

3 An official travel report is, naturally, something quite different.

4 Mika Mannermaa, Jim Dator & Paula Tiihonen: Democracy and Futures. 2007. Seppo Tiihonen & Paula Tiihonen: Kohti globaalivastuuta. 2004.

out to be a demonstration[5], something that had been almost unknown in the country up to then, 4) two different ways of implementing multiculturalism: discipline and order in Singapore, different groups interspersed with each other in Malaysia: from the bus window on a trip in the countryside, we could see Chinese, Malay and Indian houses on poles, all blissfully arranged in a harmonious blend, 5) everywhere, but especially in Korea, men wearing black suits, white shirts and ties, 6) lines of young happy girls wearing hijabs working at computers in the factory of an IT company in an industrial village in Penang, Malaysia.

The appointment of an Asian, Lin, as the World Bank's new chief economist is a fresh new opening in many respects. It was the first time that anyone other than a representative of the dominant Anglo-American bloc got the job. The possibility of a new leap forward, but only the possibility, is obvious. Even if, both in this case as in appointments to positions of even the slightest importance in other international organisations, the successful candidate must have a doctorate from an American university. This guarantees the same expertise in economic policy and perhaps also the same way of thinking. Nevertheless, it is clearly obvious that Asians are beginning to secure positions commensurate with their sheer numbers and the size and economic importance of their countries in international organisations. A Korean has been elected Secretary General of the UN. Lin of the World Bank represents China's growing economic might, and most obviously in a new way. He has numerous academic credentials (including a Ph.D in economics from the prestigious University of Chicago), he has written an impressive number of books and founded a respected economic research institute in his home country. Above all, he is Chinese, but also in this respect interesting, because a major choice in his own life went completely against the prevailing current. In 1979 he deserted the Taiwan army and swan to the Chinese mainland, because he had a dream of making China powerful and successful.

Nowadays one meets Lin's kind of Chinese, young, super-intelligent, ambitious architects of the future at every international conference where science, research, technology and innovations are discussed. If the future is China's, and especially if its political power grows as fast as its economic might, it is advisable to familiarise ourselves with the thinking of people like Lin who are shaping world politics. Another reason for having a look at Lin's thinking is that the orthodox school of admiration for the market economy and all-permeating competition within the World Bank and the IMF may now have acquired a dissident in its own ranks. What has Lin written about?

First of all, the World Bank's newly chosen chief economist has written about the role of a strong state[6] in Asia's rise in the same way as Robert Wade did in his book *Governing the Market, Economic Theory and the Role of Government in East Asian*

5 In Korea, the trade union movement, students and civic organisations were beginning to launch a certain degree of ferment, which was at the same time an aspect of the country's opening to the West that later led to membership of many international cooperative bodies. As soon as I realised where I was, my departure from the scene was rapid.

6 Howard W. French: Challenge from within for the World Bank. International Herald Tribune, 26-27 January 2008.

Industrialization (1990), which has attained the status of a classic. Lin argues that it is of vital importance that governments act broadly and with a firm grip in society, including the economy. In his view, the rise of countries like China and Vietnam can be explained by precisely the power of leadership that the state, i.e. politics, possesses relative to the power of the economy, the market and companies. These countries have not followed the model of thinking that has dominated the West's policy on developing countries for decades, one in which a free market and competition take care of problems, for which reason the state, politics and governments are an impediment to all development and should therefore be minimised. Lin argues the exact opposite: that governments are the most important institutions of all with success in mind. In his assessment, the factor that decides the entire fate of development is the skilfulness of governments, which of course is founded on adequate powers, ability, competence and boldness. That is what determines whether what lies ahead is success or failure. Thus a clear U-turn will have been made if Lin can gain support for his ideas in the world's leading economic policy organisations.

Second, Lin has studied poverty and its core, i.e. famine. A key theoretical thinker who features in Lin's writing is the Indian economist and Nobel laureate Amartya Sen.[7] After the world wars that were so devastating for Europe, the belief that democratic states do not wage war with each other has been pounded into our minds. Sen's leading thought, by contrast, is that famine is unknown in democracies. Lin is said to have succeeded in dealing with poverty and famine on the basis of Sen's theories, but without even once mentioning the word "democracy".[8]

What kind of development model the World Bank will be offering developing countries from now on has been outlined in the international discourse. Indeed, it has even been speculated before Lin has put in a single day in his new job that it will be a matter of out of the frying pan and into the fire in development policy. There is an acute need in many parts of the world for some kind of stability and a "checks and balances" model as an alternative to kleptocracies. Especially in Africa, one country after another, driven into a frenzy by discoveries of oil, diamonds and other natural riches, is sliding into a morass of plundering and savage internecine wars. In the long run, democracy is, alongside a strong state, the only effective model to use to counter these threatening images. Many countries have no tradition of a functioning state. Merely having a strong state in the sense that a strong leader is acting behind the scenes, with democracy serving no purpose other than that of a stage set, only exacerbates the situation.

The main purpose of the Committee for the Future's trip to Asia was to study metropolises. The belief was that what was learnt on the way would help equip the Committee for the most laborious project that it would have to tackle during the whole four-year parliamentary term: an examination from the perspective of all-round edu-

7 I draw on his writings in this article, especially towards the end, where I highlight his reflections, which call prevailing conceptions into question, on Western and Asian civilisation, values, religion, freedom and democracy.

8 See footnote 6.

cation of the development of the metropolises of the future. What knowledge, skills and understanding will be required to live, to cope with constant dizzying success in the metropolises of the future? The view was that the significance for Finland of urbanisation and concentration could be assessed despite the great differences of scale. The metropolises in the Nordic region are among the OECD's smallest and weakest in terms of wealth, productivity and population size. With the exception of London and Paris, urbanisation in Old Europe is on the whole small-scale compared with Asia. It has been estimated that by 2020 ten of the world's 30 fastest growing metropolises will be in China and eight in India. Shanghai, which has about 20 million inhabitants, is tipped to become this century's New York. If skyscrapers are used as the yardstick, that goal has already been achieved – there are twice as many of them in Shanghai as in New York. The Asian metropolises are growing so fast that to the occasional visitor they look like new cities every time.

Both various new phenomena of technology, rationalisation and boosting efficiency and social problems with proposed solutions to them were dealt with on the trip to Asia. Democracy was not. Isn't democracy in its various forms and on its various levels a prerequisite for individuals, families, peoples, cultures, economic regions or companies to prosper? Is there a widespread belief that the explanation for the success of the ascendant economic powers and metropolises is that democracy is not putting a brake on economic development? Is there an assumption that also poverty will be reduced without politics and democracy? And, to conclude, something that has to be asked with the specific theme of the Committee's trip in mind is this: If the Western world has for 2,500 years shared the cultural heritage that has been passed down from the democratic city-states of Ancient Greece, don't democracy and culture belong to the urban life of the future?

Democracy, culture and families

People live and act in institutions. The world's oldest institution, which has been the foundation on which human communities have been built everywhere, is the family. At least for me, in no way an expert on Asia, the differences between my own culture's way of thinking and what I saw and heard in Asia were highlighted most touchingly through this institution that is the closest of all to people. I hold the institution of the family in such high esteem that in Tokyo I immediately decided to skip a visit to one innovation institute so that I could accept an invitation by a teacher couple to have tea with them in their house in the oldest part of the city.

Examining matters through the family is justified for many reasons. Alongside the school, it is in the family that all-round education as knowledge and skills, but also as values, attitudes, Weltbild and disposition are embraced. The family is at the heart of religions, traditions and especially in Asia the dominant Confucian philosophy. In Confucianism a person is first and foremost a family member rather than an individual. Social stability is built on five basic hierarchies of people: Emperor/subject, father/son, elder brother/younger brother, husband/wife and older friend/younger friend.

Obedience, loyalty, commitment and harmony belong to the Confucian tradition, in which the parent-child relationship is the model for all other relationships. The state or a company are like extended families.

In Japanese thinking the family can be seen as being closely intertwined with culture in the original meaning of that word, which is cultivation of crops. The history of Japan and the development of its civilisation are dominated by rice, the word for which also means food. Rice cultivation is highly labour-intensive. Just a glance at the map of Japan, filled as it is with mountains, tells a lot about the country's difficult agricultural conditions. Families working together have carefully planned and built rice fields in the few precious narrow plains at the feet of the high mountains. These fields have had to be supported, dammed, terraced and furnished with drainage and irrigation systems to ensure good crops year after year. Unlike other crops, rice is impossible for individual families to cultivate. Collective labour by extended families and village communities – large work units – reached its peaks in spring when seedlings were transplanted and in autumn when the crop was harvested. What was involved in these stages of cultivation that demanded so much manual labour, discipline and mutual respect was seamless cooperation between families and neighbours. Nothing less than collective survival. Families remained in the same place from generation to generation. The tradition of rice cultivation is regarded as explaining such features of the Japanese lifestyle as patience, humility, trust, communality, cooperation, willingness to seek consensus, loyalty, boldness and success as a member of a group, exactitude, collective disciplined work, coordination and risk management by sharing.

Given the strength and tightness of the family institution, it is easy to understand why education is so esteemed in Japan and China, and certainly elsewhere in Asia as well. Parents want their children to have better opportunities to succeed in life than they themselves have had. With the aid of politics, major investments in the future have been made by putting a lot of resources into raising the educational level of the entire population. In the early years of the 20th century Japanese villages and towns spent 43% of their budgets on education, and schooling was made compulsory in 1910. Although the country was then still very poor, it surpassed many European countries in the number of books. After the Second World War, Japan rose at an unprecedented pace to become the third wheel among the economic superpowers. Annual economic growth averaged 10.5% between 1950 and 1973, which meant that the country's share of world GDP rose from 2.5 to 10% in that period. That success was founded on the education and competence of Japan's own people. Japan is also said to have in this way called into question Max Weber's theory of the Protestant ethic with its individual-centred features. The rise of China is said to reflect the same development. Mao's policy of sending the entire nation to school has provided a good substrate for the present economic growth.

On a trip one can put questions to lecturers and hosts or people that one meets randomly in taxis or hotel lobbies and in that way get things discussed and illuminated in a slightly different way. Cultural differences create their own barriers to discussion and forming a picture of the world. As demonstrated by the following answers to

questions in Japan about monitoring children's way to school, in Hong Kong about caring for the aged, in Korea about the majority of the people, i.e. women, participating in the workforce or in several countries to the status of foreign workers, i.e. servants,.

What democracy is fundamentally always about is the right to participate in influencing matters that are important from the perspective of one's own life, and about freedom. The problems of ageing, low birth rates and gender equality, which are even more acute in especially Japan and Korea than they are here, are good examples of such matters. As everywhere in the world, the most effective way for young women to improve their status with regard to equality is to get a good education and a good job. However, this often still means, even today, that they postpone marriage and childbearing, which in turn is not compatible with either a patriarchal attitude towards the family or the labour-related demands of economic growth. Freedom is a complicated matter in human communities everywhere. Thus in Japan they did not understand our probing questions about privacy when we were shown computerised gadgets, meant for use in every home, that enabled the lives of family members to be monitored. When the planning authorities in Hong Kong were asked how care for the aged would be organised, they replied without even the slightest hesitation that they could be transferred to old folk's homes in mainland China. In Korea, well-educated mothers are badly needed in the workforce, but children's day care along the lines of the Nordic model has not been arranged. The reply of one knowing mother, who had been asked why grandparents can't look after children, shot from her mouth as though from the muzzle of a cannon: today's grannies want to shop, play golf, travel – and now at last they have the money to do all of these things.

In the case of immigrant labour in the explosively growing metropolises of the world, the encounter between democracy and family values is nearly impossible. This complex of problems still lies in the future for the Finns, because there are no metropolises in Finland yet and the country has kept its borders closed. In parks, in the shade of trees in large squares or under bridges in Asia and especially the Arab countries that had rapidly become wealthy, one saw hundreds and hundreds of women gathered as though for an outing. When we asked who they were, the reply was that they were maids from many countries spending their day off meeting their compatriot sisters - Filipinas meet under this bridge, Thai women at the corner of that park, and so on. They are not allowed to bring their families with them, and marriage and children either with locals or their own compatriots is prohibited in the countries where foreign workers find employment. The tens of millions of foreign workers are content with little. They send substantial sums of money to their families in their poor home countries. So substantial that the funds repatriated by migrant workers have rescued the economies of many countries.

It is not only a matter of the immigrant workers that the building boom in the metropolises of the 21st century has attracted. A similar tradition of a tight-knit "national" family can be found in Europe, in Germany for example. Turks have been helping to build Germany for half a century, but even members of the third generation are not granted rights of citizenship. The constitution, which mentions German blood,

limits the possibility of people from anywhere besides the countries to which over the centuries Germans have been migrating or have remained gaining citizenship. Japan has long been ethnically homogeneous and in this respect just as closed a country as Finland. Nevertheless, some 700,000 Koreans live permanently in the country and most of them are third-generation. When Korea was occupied by Japan, Korean workers were brought to Japan and a considerable part of them remained there. They do not have citizenship, nor the right to vote. Emphasising their outsider status is the fact that every time they go abroad, they have to apply for a permit to re-enter Japan.

The family institution is stable in Asia, but nevertheless its relationship to working life is undergoing change. In Finland, women were fully recruited into the workforce during the war and after it they were desperately needed for reconstruction. Now, for the first time, we are in a situation where in some age categories, such as the over-60s, there are more women than men in the workforce. Children's day care and other support systems have become established features – sometimes excessively so. There are also other models to be found in Europe. A different kind of division of labour somehow impacted on my consciousness in the early 1990s when I spent a year as a researcher in Germany. With 20 years in working life, postgraduate studies and three children to my credit and totally imbued with Nordic equality, I wondered one day as I watched the well-to-do Germany housewives at home whether perhaps we Nordic women working hard in and outside the home had been cheated a bit with the equality thing. I returned to the same question later, in the 21st century, in London, where I let myself be told that the trendy ideal among young educated women was to stay at home and lead a cultured life while a wealthy husband took care of the family's finances.

Questions of family-level democracy are regarded as matters that are most at the heart of states and human communities in general, and also the most delicate. They are indeed that. But because the family is the basic unit of society, they are at the same time most obviously a matter of public discussion and the common good. A discussion of such phenomena of the global economy as managing international family companies, haste and stress or multiculturalism in work communities can not be conducted in a way that ignores conceptions of the family. The family has also become a part of the state's core matters, i.e. a part of foreign and security policy. Now I shall outline a few thoughts about these.

The family is a strong unit in the corporate economy. It is said that the vast majority of companies in the world are family firms. In the EU, depending on country, they account for 60-90% of companies and two-thirds of GDP and jobs. The proportion of family companies in the USA is close to 90% and they account for around half of aggregate output of goods and services. One-third of the companies on the Fortune list of the 500 biggest companies are either managed by a family or representatives of the founding family are included in the top management. [9]

Family ownership is advanced as an explanation for the rise of the Japanese car industry. The Toyoda dynasty, which owns Toyota, is extensive in accordance with the

9 Regarding the importance of family companies, see Landes David S.: Dynasties. 2006.

Japanese conception of the family, because sons-in-law are automatically accepted into the family as sons. The influence of Toyota innovations has spread from the car industry to different sectors of production all over the world. Something that has made a great impression on many of us is the fact that the Japanese production model surpassed the American in efficiency and, what is even more remarkable, did so in the Americans' core competence area (as the matter is expressed in present-day jargon), namely is building cars. The Toyota Production System is regarded in the business economics sector as an efficiency-enhancing achievement comparable to Taylorism or Fordism. The method of working in teams and self-directing work circles even spread into the Finnish state administration. What is of essential relevance in the system from the perspective of the themes with which this article deals is that hierarchies were dismantled and, among other things, central management done away with. Work development and innovation are often thought of as being, at their best, a bottom-upwards flow of knowledge, skill, thinking and understanding. The company's pep word was kaizen or constant development. Workers were rewarded for finding problems and suggesting solutions to them. I would call it democratic – at least in theory.

However, relations between people and models of thinking that are millennia-old will not be changed by means of organisation charts on automotive engineers' drawing boards. Ed Reingold, who has written a history of Toyota, describes the management culture in the Toyoda dynasty's factories in Japan as mercilessly hard (as reported in David S. Landes' book *Dynasties* from 2006). Asian companies have not found the going easy in their efforts to "conquer" the West. A lot of effort has been needed to soften attitudes. To defuse criticism, Toyota invested large sums of money in an ultra-modern recycling system in its factory in England, but also made inputs to enhance pleasantness and contentment, such as planting 350,000 trees and diverting water into fields to protect a wetland environment for lapwings. At time of writing this article, in March 2008, the main story in the US magazine Business Week tells how American managers do not stay at the Korean company Hyundai's factory in the USA for long. The Hyundai group, which together with its sister company Kia has been following in the wake of the Japanese to conquer the world's car markets, has nearly doubled its sales since 2000. However, American managers have been a problem. They quit or are fired because of the Asian management style, which is said to be hierarchic and, according to the magazine, the whole administrative system is feudal and militaristic ("My Way or the HighWay at Hyundai", *Business-Week*, 1,7 March 2008).

Reconciling work and family is something that has been regarded as a problem of the efficient economy everywhere. In countries with efficient economies in various parts of the world, and specifically from the viewpoint of the family, there has begun to be discussion of a counter-culture in contrast to haste and stress: a slow, contemplative lifestyle in which time is acknowledged to be a valuable commodity. The movement began with food and food-loving Italians. Even in New York, Slow Food restaurants have rapidly appearing on the scene to replace Fast Food joints. The demand for healthy and clean nourishment has gained pace especially since the publication of the results of a long-term research project which showed that food containing residues of

crop-protection agents and additives can be just as big a cause of cancer as tobacco. In slow living thinking, work, housing, leisure and life in general should make sense. By "slowness" is meant managing one's own life and going deep into awareness.[10] The home is a place of peace, relaxation and social interaction. Something else that is called into question in slow living thinking is the prevailing belief that it is only in the frenetic life rhythm of metropolises that innovations flourish. There is a belief that a tranquil, balanced life with a long-term perspective increases wellbeing, and this is regarded as being a good foundation for renewal and innovation. Social scientists speak of the knowledge society being in transition into an experience and culture society.

Still live in memory in Japan is the situation during an earlier period of economic growth, when work took precedence over all other aspects of life and companies had to forbid excessively enthusiastic employees, on threat of punishment, from being at work after a certain hour. Now in the 21st century a whole town designed according to the principles of slow living has been founded near Tokyo. Kakegawa has 80,000 inhabitants and since 2002 has been observing, in accordance with a proclamation of slow living, principles and operational methods that mean living in harmony with nature and the seasons in a way that saves energy and other natural resources. Quality of life is given precedence over the material. Respect for the old Japanese way of life is being revived; in other words, what matters most is simplicity, harmoniousness, an unhurried pace and beauty, but efficiency also has it place. There is an emphasis on lifelong learning, walking is recommended instead of driving cars, houses are built of wood or bamboo to last centuries, art, hobbies and sport are esteemed more than academic studies and forests are protected by using human labour. People are allowed to age gracefully.

Summa summarum: I often wound up mumbling to myself about family values and conceptions of the human being during the trip to Asia. Afterwards as well, my thoughts long lingered with such matters of democracy as majority and minority, new colonial thinking with its large international investment firms and migrant labour, nationality, the state's responsibility for welfare and the submission of politics to the power of the economy. Many of these are very familiar paths of thinking also in our own democracy, the sentiments that I described in closer detail on a considerably longer trip than this to America in the early years of the present century (*Amerikka ja Eurooppa* from 2003).

Something that I also pondered on the trip was whether family democracy might be the place to seek an explanation for why some Asian countries fulfil all of the conditions for a new economic upswing, but the boom just won't get properly under way. Japan's real new breakthrough has been long awaited. Just as was the case with the previous upswing, public and private, domestic and foreign investments in revitalising science and technology have been extensive. Yet, still in the 1990s the USA took 44 Nobel prizes, Germany five and Japan only one. Could it be possible that the reasons for the delay in the flourishing of science and innovations are to be found on

10 E.g. Sirkka Heinonen, Futura 4/2007.

the level of so-called internal democracy, a perception of the human being that respects hierarchic parenthood and manliness and an idealisation of authoritarian leadership?

The hard core of the family and politics

If soft family matters have been dealt with gently in the foregoing, let us take an example from the hard core of politics. What does family-level democracy have to do with foreign and security policy? A lot. Examined on this level, what is involved in the Western world is liberalism as an ideal and a thought pattern, which been predicted to end up in an even violent collision in the worst-case scenario

In developed Western countries democracy and freedom are esteemed also as liberation from the many shackles that in a world now gone bound people's everyday lives and interaction between them. Privacy, gender equality, acceptance of various minorities and much disengagement from patriarchal power in family life are components of individual-based liberalism. Freedom understood as liberation in everyday life between generations and genders has not advanced in the same way in all of the world's cultures. Religion is still one of the strongest factors that determine values in the world. In the West, Christianity underwent the Reformation, which led to liberation from many of the burdens of the old doctrines. That has not happened in most other religions. Value conflicts have naturally become inflamed when wealthy Western countries, invoking the principles of liberalism, have tried to export their democracy to a country with a very different tradition. In addition to a free market, exported democracy has included also liberal ideal of political life. This totality has included the Western modern lifestyle with its quite many kinds of families.

The liberties that have been taken furthest in the Western lifestyle are regarded in many older cultures as evil, even as a curse, as a corruption of their good life. Thus Western ways must be resisted. It has been pointed out in the United States that free and equal ways of behaviour and dress codes, nudity, the entertainment industry, pop music and consumption of alcohol by women are felt in the East, and especially Muslim countries, to be the wellspring of hatred directed against the Western way of life. The causes of extremist phenomena are not sought in poverty, nor in structural injustice, nor in a policy of world supremacy. There is no talk of a clash of civilisations in this examination, either, but instead the swelling tide of anger is seen as specifically a reaction to westernisation and modernisation.

The commentator who has gone furthest in linking the Western liberal everyday life to anger extending all the way to the causes of terrorism is the well-known conservative thinker Dinesh D' Souza (*The Enemy at Home: The Cultural Left and Its Responsibility for 9/11*. 2007). He has presented the startling thesis that it is the American cultural left that is to blame for the terror attacks in September 2001 and indeed for Islamic terrorism in general. It and its allies in Congress, the media, Hollywood, voluntary work and universities are the main reason for the hate that is directed against America. The USA is regarded in this thinking as a whipping boy, because the European way of life is considerably more liberated than the American. For example, more

than half of the Americans attend church weekly, compared with only two per cent or so in Europe. It is specifically in America, unlike in Europe, that a Christian right that emphasises family values and morality in everyday life is in power. Besides, the ongoing presidential election campaign has revealed a new feature of strong religiosity in the USA. Barack Obama is building a Christian neo-left programme, in which the aim is to unite religious and secular Americans behind an ethical consensus and a reform policy that springs from it. Obama has emphasised that some of the problems in society can be solved only through an awakening on the level of the individual and acceptance of responsibility and that faith-based politics must be broadened to encompass globalisation, climate change and terrorism. Research has revealed that seven Democrats in ten are religious. They want a politics that is broader in scope than that of the right and intervenes more in the structures of society, but is founded on faith.[11]

The decline of Western civilisation as a result of its habits of life has been long and widely predicted. One of the earliest prophets of downfall was Plato in Ancient Greece, who saw Athenian life as being doomed to destruction. The prosperous citizens concentrated mainly on pursuing their own interests, acquiring property and indulging themselves in the pleasures that a high standard of living made possible. Politics was intense, ambition brought intrigues and corruption in its train. The ideals of education, moral virtues and habits in accordance with them were completely trampled underfoot in the stampede to promote selfish interests. If there is no order of values, if everyone can do whatever he feels like at any given time, responsibility disappears from collective life, and nothing can compensate for the loss of responsibility. The community falls apart. After Plato's death in 347 BC, Athens did indeed disintegrate.[12] Plato's idea of a morally strong person can still be accepted as the foundation of the European cultural tradition. Especially since he emphasised that order must be clear to all members of society and everyone must know not only his rights, but also his duties. By contrast, Plato's negative stance on democracy as a model of governance is not acceptable.

However, there is a need to proceed again from matters of war, peace and decline to examining the encounter of different cultures in families from a more mundane level than the one mentioned in the foregoing. What is translated in different countries and what fiction is read in different countries and continents can tell us something about interaction between the cultures of different continents and cultures. The following brief review is somehow reassuring, because it reveals that people in families all over the world watch the same Disney animated movies. In my opinion, the values in Bambi, Dumbo and comparable movies are quite good ones – although, it is true that a quick glance with the grandchildren at the Disney programming offered on the satellite channels revealed a lot of "splats" and "whacks".

11 Markku Ruotsila: Uskonnollinen vasemmisto ottaa valtaa USA:n politiikassa. Helsingin sanomat 4.4.2008.

12 Professor Emeritus Juhani Pietarinen PM: Eurooppalainen sivistys. Antiikki:hyveet sivistyksen perustana, TuV 26.3 2008.

UNESCO has been feeding translations into a computer database and its Index Translationum, which covers nearly 30 years, reveals that it is small European countries that translate foreign literature most. Of the countries where major languages are spoken, Germany is the leader; since 1979, some 260,000 books have been translated into German there. Japan ranks fifth in the statistics, with 110,000 books translated into Japanese. What from different continents is translated? With one big exception, classics and religious literature. Modern light literature is in the ascent. The most translated works from Asia are those of the Bengali poet and Nobel laureate Rabindranath Tagore, then the Chinese writer Lao Tzu's sagas and third the Japanese manga king Akira Toriyama's books. The Middle Eastern works translated have been the Bible, Arabian Nights and the Koran. Europe's most popular writers have been Jules Verne, Vladimir Lenin, Hans Christian Andersen and the Brothers Grimm. The predominant position of English is undeniable in two ways. More than half of all books translated are in this language. English as a language dominates both the classics and light-reading beach novels. The great exception? It is Walt Disney. The most-translated works in the world are Disney children's cartoons. Others in the Top Ten include the thriller writers Agatha Christie and Stephen King and the romance spinners Danielle Steel and Barbara Cartland.

Democracy contracting, or is it just a wave?

If the fact that democracy remained in the background on the Committee for the Future's trip was not the sum of several coincidences, it is possible that it reflects a trend that is discernible in global discussion forums these days. The most successful economies are regarded as getting along fine without democracy. Many of those that maintain formal democracy are rejecting it or don't care if it withers away. Income differences have deepened in the era of the wealthy global economy and, what is of essential relevance, this is accepted as a law of nature. New democracies are not coming into being. In the old democracies, doubts are beginning to be voiced not only about whether far-away foreign trade and political partners need democracy, but whether or own democracy works.

Whether the trend is permanent and if the pessimistic interpretations are correct is a complex matter. The future of democracy has to be analysed against a long time frame, because it has been incautious to assume in the first place that democracy would continue its rapid triumphal onward march without interruption. As a human construct it has, just like the economy, its ups and downs. And even in good times democracy, like a garden, needs careful tending.

Looked at in the Western way, steady good economic growth through opening up the world and strengthening human rights has persisted for a long time. It is now almost 20 years since the Berlin Wall came down and the Cold War concretely ended. Francis Fukuyama's original theses of the end of history, the permanent triumph in the world of an alliance of capitalism and democracy, are equally old. Faith in the power of capitalism and democracy has been widespread in the world. In the mid-1970s, half

of the countries in the world were regarded as autocracies. By the early 1990s their number had halved and by the turn of the 21st century, for the first time in the history of humankind, a majority of the people in the world were living in democracies. Democracy has not just been a stage set, because tens of millions of people have risen rapidly out of hunger and poverty. People have prospered most in China and generally in Asia. Rapid urbanisation has coincided with this great wave of democracy. Life in the slums of big cities is not easy, but the most hopeless poverty of all remains mainly a problem of rural areas also in Asia.

One of the most important economic rivalries – also from the perspective of democracy – exists between China and India. India's growth figures have been substantially smaller than those of China. India's share of world GDP is 2% and of world trade 1%. China's economy is more than twice the size of India's and it has received ten times more foreign investment than India in recent years. In 2006 India's GDP per capita was US$3,400 compared with $6,300 for China (the figure for Japan was $30,700). Sixty years of democracy has not succeeded in finding adequate solutions to structural problems, of which slums, the caste system and the failings of the basic educational system are not inconsiderable. It is revealing that in China nearly 90% of women can read, whereas the figure in India is only 45%. As things now stand, China is gaining strength relative to all other developing countries. Already in 2003 it overtook the USA in foreign investments. Goldman Sachs estimates that China's share of world GDP will increase to 15% by 2050, whilst the G8 countries' share will decline from 57% to 20%. It seems like a similar upswing will take place in Egypt, Iran, Nigeria, Pakistan and Vietnam, in none of which strong democratisation is in evidence. Now it has begun to be said that China is standing out from the others precisely because it need not care about democracy. India, Japan, Korea and other Asian countries that have adopted a democratic model of government and lifestyle have surprisingly become the underdogs.

China may be different in many respects.

Economic winners generally spread quickly beyond their own country and continent at least through investments. China emphasises that it has no hegemonistic aspirations. Of the various continents, Australia has gained a lot from China's economic growth. China has overtaken Japan as Australia's biggest trade partner. Australia sees the growing trade as, on the whole, a very positive thing.[13] In addition to Asia and Australia, China's growing influence is evident in Africa as a trade partner, but increasingly also as an investor. China's modus operandi as a banker in Africa differs completely from that of others. Unlike the World Bank and the IMF, China does not impose visible conditions for loans or aid payments, i.e. does not ask questions about the state of the economy, does not oppose corruption, does not demand a ban on the use of child labour nor require environmental protection as a part of its lending and investment policy. In his book *Tämä on Afrikka* ("This is Africa", 2007), the Committee for the Future's first chairperson Eero Paloheimo gives a frank outline of what happens when a Chinese factory is built in Africa: the Chinese bring the money, the

13 The Economist. A ravenous dragon, March 15, 2008.

building materials and the builders, the plans and the ideas as well as, of course, the entire personnel together with their food and drink from China. It also appears that in repatriating profits the Chinese are now, as they have always been, superior.

As The Economist reported in a special issue devoted to China in March 2008, what is essential is the way China handles politics in the countries where it invests, and which are among the world's poorest and most authoritarian - Congo, Sudan, Angola, Kazakhstan, Burma. Congo announced in 2007 that, to safeguard a supply of copper, China would be investing $12 billion in railways, roads and mines. That amount is three times Congo's budget and ten times the aid sum that Western countries have promised to provide each year in the period up to 2010. According to the newspaper, the West is believed to have lost Africa, which has switched from the "Washington consensus" of economic liberalism and democracy to the "Beijing consensus" of state-direction and oligarchy. On the other hand, The Economist reminded its readers that in the 50 years that the Americans and Europeans have been helping Africa prosperity has remained unknown there except in the closed circles of the elite. China has good opportunities to do a lot better. Chris Alden from the London School of Economics points out that the Chinese prime minister has demanded democracy in Burma and that China contributed to forcing Sudan to admit peacekeepers and has sent a UN contingent of its own there.[14]

In the struggle between the two Asian superpowers, India has launched a counter-offensive in Africa. In early April this year it invited the leaders of 14 African countries to a summit in Delhi and launched its own investment and cooperation programme. What is in the background is oil, but also the allocation of seats on the UN Security Council.

Indonesia is the world's biggest Muslim country, the world's fourth most populous and South-East Asia's biggest economy with vast natural resources and a large land area. Indonesia's development in democratic conditions after nearly 20 years of autocratic rule by Suharto had ended in 1998 has been attentively followed - not least because of the country's Islamic character. Democratisation has brought stability and many of the other prerequisites for a good level of prosperity at a rapid pace. But economic growth has remained modest compared with neighbouring countries and especially with the non-democratic ones. In 1996 Indonesia still held the leading position in the region. However, the country was hit perhaps harder than any other by the Asian economic crisis of 1997 and has been slower than its neighbours to recover from it. Economic growth was 5-7% last year, but unemployment remains over 10% and 30% of the workforce is underemployed. If the trend continues, there is the danger that democratic Indonesia will become a raw materials reserve and industrial subcontractor for China's vast market. In the worst threat images, the same will happen to Asia's older and the world's biggest democracy, India.

China would seem to have a lead in economic competition relative not only to the old democracy India, but also the Latin American countries that have recently gone over to democracy. While writing in early February, I read in a World Bank press

14 ibid.

review for just one day (6.2.2008) two research results relating to the future. According to calculations, India will benefit very little indeed from world trade liberalisation by participating in the so-called Doha round of tariff reductions (domestic output will grow by 0.52%, exports by 3.8% and imports by 2.9%). At the same time there is a warning that, if India commits to the agricultural tariffs arrangements envisaged in the agreement, the outcome can be a loss of real income for nearly 80% of homes, causing a fall of 25% in the price of rice alone. The effect of the reduction would be regressive, with the poorest households the biggest losers. Also in the technology sector China has gained absolutely more benefit from high-technology production, which has been transferred out of the developed countries since 1980. Latin America has been the latest big loser. Technology products account for only 12% of total exports from Latin America. China threatens as much as 95% of this.

It is no longer a coincidence that at the Davos meeting in 2008 it was proclaimed more and more clearly that this is the Asian century. Various opinion surveys (e.g. Pew) reveal that Europe has already had to give way and the next to recede to the background will be America. The slogan that by 2015 or 2020 at the latest Asia will leave America behind, that by 2025 Asia will account for 60% of global output and that by 2030 China's economy will be three times the size of the USA's is beginning to be regarded as self-evident. This means in practice that, among other things, an estimated 40 million jobs in the service sector will be relocated from the USA to India and other Asian countries. That is a quarter of the 140 million workers in the sector. This transfer of jobs is forecast to cause a shift in the centre of gravity in the market, work and the economy to knowledge and competence. Eventually, the centre of political power is likely to shift as well. Besides war and a collapse of the environment, this pattern can be disrupted by democracy.

It may be that precisely this year we will see the intervention of democracy in the world on a large scale. The United States will once again ensure its position of leadership and the foundation of its existence and activities in the strongest possible way: through direct popular elections. Nowhere else in the world's existing or future metropolises or centres of culture are primary elections held the way they are in America, with the people choosing the country's political leaders. The whole world follows the primaries. A phenomenon called "We the people" does not exist in Tokyo, Brasilia, Brussels, Delhi, Moscow or Beijing. With the exception of elections, the people are not given even the means or a forum to demand, support or approve. That way, support, trust, commitment and legitimacy is lost. The European Constitution was drafted almost in concealment from the people. No one dares submit it to a referendum, although many European leaders promised they would. In Finland, the people have been able to choose the President directly several times, but a project to strip this democratic institution of power in now under way. The Americans' ability to engage citizens, renew, make choices and look at the future together is still unique in the world. Indeed, several researchers have voiced a reminder that especially if America

now renews itself, predictions of its demise as the world leader will be premature to say the least.[15]

Charles Tilly and Niall Ferguson are two historical researchers who believe that democracy advances in a wavelike fashion. According to Ferguson, the most recent wave of democracy began on the Iberian Peninsula in the mid-1970s, spread from there to Latin America and in part to Asia in the 1980s and then to Eastern Europe in 1989-91. In his view, democracy in Africa has regressed badly, especially because the countries that have served as models for it, Kenya and South Africa, are plunging into corruption and chaos. In Asia, democracy has suffered clear setbacks in Pakistan, where Benazir Bhutto's assassination meant a continuation of military rule. The generals remain in power in Thailand and in Burma the military regime crushed the monks who were demanding democracy. Many steps backwards have been taken in the Arab world. Within the sphere of influence of the former Soviet Union, in turn, democracy is threatened with defeat in Kyrgyzstan, Kazakhstan, Turkmenistan and also Georgia.[16]

The democracy index published annually by Freedom House shows how the last wave of democracy that advanced so far has broken. The past five years have seen democracy suffer setbacks in 57 countries. Haiti, Burundi, Iraq, Lebanon and Liberia have been described as success stories, although Ferguson points out that only a hopeless optimist would bet on their democracy enduring. Indeed, pessimistic pundits remind us that an earlier wave of democracy slumped in the 1920s and 1930s into depression and finally a devastating world war. As described in Robert Kagan's new book *The Return of History and the End of Dreams* (2008), we are reverting to a world of national ambitions and interests that is more reminiscent of the 19th century than the post-Cold War golden age of democracy in the 1990s. In Kagan's assessment, the simple and safe world is a thing of the past. [17]

Personally, I have faith in those researchers of democracy and history who predict that democracy, setbacks notwithstanding, will continue to experience waves of victory.

Economy and culture as a touchstone for democracy

Researchers have presented a lot of explanations for why democracy is flourishing in some countries, but not in others. In the recent discussion, especially with the development of Asia in mind, two reasons have come clearly to the fore: 1) the economy and 2) culture. For my part, if I had to name one factor that in recent decades has set

15 Roger Cohen: The whole world is watching. Herald Tribune, Thursday January 31, 2008. Charles Tilly: Democracy 2007. Niall Ferguson: Slow but sure. Financial Times Magazine, January 26/27 2008.

16 Ferguson 2008.

17 Reviewed in, e.g., The Economist, 29 March 2008.

democracy back, at least in the short term, and prevented new states from embracing it, I would, sadly, mention nature, its riches, and above all oil.

The relationship between the wealth of citizens and democracy has been estimated to be even so direct that in a country with an average income of less than $1,000 a year, democracy will not last even ten years. When the average income level reaches $6,000, democracy is nearly impossible to destroy (Adam Przeworski). In the opinion of some economic researchers, it is constant economic growth that creates a sustainable foundation for democracy rather than a certain income level (Benjamin Friedman). It is believed that an economic recession will put democracy to the test. The development in the 21st century has weakened the tenability of these doctrines. Growth in the world economy in 2001-07 was greater than it had ever been. Democracy did not derive much direct benefit from this. On the contrary, the economies that grew fastest are not democracies. The mutual support and understanding union of capitalism and democracy is likewise showing cracks. According to Ferguson, the best economic growth rates in the 21st century have been enjoyed by the BRIC countries (Brazil, Russia, India and China) and countries in Asia where power is concentrated or there is one-party rule.[18]

Asia is also debunking another common argument used to explain democracy, namely culture. Samuel Huntington argued in 1993 that after the Cold War Western civilisation would drift into a conflict with Islamic and Confucian civilisation. Measurements of democracy show that Western countries are more likely to be democratic than Muslim countries, but in the 21st century Indonesia with a population approaching 250 million has shown that this assumption is no longer so tenable.

With regard to culture's and religion's relationship with democracy, one must bear in mind the historian Ferguson's critical comment that it is not such a long time since serious scholars argued that Roman-Catholics were incapable of adopting the capitalist work ethic or German-speaking people of embracing democracy. The Indian-born Nobel laureate Amartya Sen, some of whose ideas I shall present later, has levelled scathing criticism at those who use culture and religion too one-sidedly as an explanatory factor.

Historical researchers stress that democracy demands time and is the result of a historical development. They remind us how many centuries it took for democracy to achieve a breakthrough in each of the countries that are now strong democracies. The roots of British parliamentarism began with the Glorious Revolution of 1688, but it still took a couple of centuries from then until the mid-19th century before the principles that also today guarantee democracy were acknowledge in parliament: a political body condemned all forms of political violence, government ministers immediately resigned when parliament expressed its lack of confidence in them and a clear majority of parliamentarians respected the law. Electoral rights, parties and the whole system of representative democracy developed only a lot later and gradually. What is of essential relevance is that the elite grasped that it lay in their own interests to completely eschew violence in politics, change the government and ministers and accept

18 Ferguson 2008.

the legal order. Historians point out that there is corruption in every country, but that it is at its worst in non-democracies.[19]

How do explanations for democracy match up with Asia's rise and its metropolises? Democracy is not created by holding elections, nor can it be achieved with the aid of economic growth or a certain income level. Professor Barry Weingast of Stanford has long argued that it is the rules of forcing oneself into democracy that are involved. The more these rules are observed, the more they are respected until eventually they are unbreakable.[20]

There is no reason why democracy would be impossible to achieve at any time, anywhere in the world, in any religion and civilisation.

Democratic governance of metropolises

One of the liberties that belong to democracy is that people can choose where they live. That was already the case for free men in Ancient Greece. Today, the majority of people live in cities, which are constantly getting bigger. Rapid urbanisation is difficult to manage, at least when one assesses the matter in the Western way. In addition to the problems that size brings, there is always the question of sharing - the existing and the future good. Sharing prosperity and safeguarding opportunities for success on the part of the tens of millions of new citizens who have crammed into the shantytowns demands infrastructure, schools and hospitals, and to do this, in turn, taxes have to be collected and the funds rationally invested in accordance with the common and general good. Those who have already achieved success, especially those who have made it into the middle class, will not accept a lowering of their own and their children's standard of living. People cling to the benefits they have achieved. This effective sharing process, gradually polished by democratic decision making and planning, is considerably harder to build than skyscrapers. When expectations and promises do not meet, what lies ahead is resistance, rebellion, chaos and violence.

Governance of large masses of people is put to the test by, in addition to war and catastrophes, economic crises that arise or when social structures break down. When things are going well for a country, compromises on democracy can be made, but when problems crop up, it is needed. Famines are among the worst scourges that can afflict a people. The Indian economist and Nobel laureate Amartya Sen regards famine as a failure of government policy. In democracies, even the very poorest of them, famine is unknown. Famines are the result of poor policy on the part of a colonial power, administration by another foreign country or oppression by an indigenous dictator. He highlights three major famine situations. What was, relative to population, the greatest famine in history was experienced in Ireland in the 1840s and Sen assigns the blame for it to the British central government. According to Sen, 30 million starved to death in China in 1958-1961 as a result of wrong political decisions. The last famine in India was in Bengal in 1943, before independence was achieved in 1947, and

19 ibid.

20 ibid.

claimed 2-3 million lives. Poverty and catastrophes have been experienced in democratic India, but it has been possible to prevent famine. Sen emphasises the ability of democracy to foresee situations, prevent a poor development, change direction, obtain and distribute information, prepare through discussion and argumentation for various alternatives and make decisions for the common and general good. In his view, governments can prevent famines extremely easily if they want to.[21]

What is of essential relevance from the perspective of managing the future is people's everyday survival skills, of which reading and writing are the most important. In this respect, China – just like Korea and Taiwan as well – is in a superior position vis-à-vis the old democracy, India. There has been a very high level of literacy in China for a long time, whereas all India can boast of is that about half of the population is literate. Sen takes the view that three of the basic pillars that are incomparably important opportunities for human success have been inherited from the era of Mao: literacy, land reform and public health care. From the perspective of democracy – on all its levels – China is absolutely in an advantaged position relative to many other countries, because female literacy has been maintained at a high level for several generations.

Virtually uncontrollable situations of collective danger in large cities have already been experienced in Latin America as the middle class loses its wealth in economic crises, young Blacks protest in Los Angeles, poor young people from the suburbs flood onto the streets and smash everything in their path in Paris or Copenhagen, where youths with immigrant backgrounds have gotten mobs onto the streets many times. Also in our neighbouring country Sweden there it is feared that a malignant hatred is smouldering in the suburbs of major cities. In civilised states, keeping the masses quiet can not depend on the coercive force of the police or army other than temporarily.

Another topical example of the difficulty of managing urbanisation is the problem of waste. I visited Naples, where I saw an old European city of commerce and culture inundated under mountains of rubbish. The famous phrase praising the beauty of the city – See Naples and die – was acquiring a whole new meaning. On the Asian trip I reflected to what degree vast seas have provided a salvation as many large Asian cities wrestle with their waste management problems. Then I happened to see TV pictures of gigantic, dense rafts of plastic waste - some of them the size of Australia - that ocean currents had packed together drifting around the Pacific. The oldest eternal plastic bags date from the 1950s.

Urbanisation is advancing at such a pace in Asia that its relationship to democracy and equality is rarely ever even thought about. Looking at the matter long term, however, there is a pressing need to find solutions to mega-class humankind's collective problems, of which income distribution and the environment are the most important. On a visit to Finland, the Chairman of the Intergovernmental Panel on Climate Change (IPCC), Rajendra K. Pachauri, was asked the following from the perspective of Asia: If democracy begins to be an impediment in economic growth, is democracy a good or

21 Hunger is one of the themes that Sen deals with a lot in his output. Another is freedom and human identity.

a bad thing where climate problems are concerned? He replied that, first of all, quick solutions in which democracy may be bypassed are not sustainable. Secondly, he replied that India is a country of so many different regions, population groups, tribes, languages, castes and subcultures that even without new problems it would already have disintegrated and sunk into complete chaos without democracy.[22]

Again, China can be different.

I shall take only one example, continuing to carry the family theme along, of the Chinese way of solving, in a way that takes account of people's needs, massive danger situations resulting from urbanisation. The example is significant in several ways and involves a point of principle. The reader can easily assess the magnitude of the danger. The event was this year's Chinese New Year festival, which is as important a family event as Christmas is to us. At around the time of this year's festival, China was battered by the most severe snowstorm for 50 years. The festival causes one of the world's biggest movements of human masses as people travel to be with their families and relatives. The snow stopped the trains, the roads were blocked and power stations stopped working. Tens of millions of travellers waited days, weeks in railway stations. For many who have migrated to big cities to work, the New Year's dinner with the family is the high point of a year that is otherwise filled with toil. In an interview with international TV journalists a young father said he would wait at the station as long as it took for the train to arrive, because he had no other holiday and a young son had been born at home. The Chinese got to their destinations – including the 800,000 passengers who sat and stood patiently at the station in Guangzhou. How on earth did they do it? Some abandoned their trips to allow others to go instead, the army and the police cleared away snow, power station workers put in overtime, experts in various fields hurried to volunteer their services, quite ordinary people brought food and drink to those waiting at stations and the political leaders forwent their own holidays and got out into the field to encourage their citizens.

The big city panic situation in early 2008 was described by the researcher Anne Wu of Harvard, who followed her parents' 8-day wait and their eventual arrival at their family's home.[23] Having lived in America for years, she feared that with China having embraced the market economy, materialism and doctrines of individual-worship so thoroughly, the age-old Chinese spirit of collectiveness would have disappeared. Through the event, such strong features of Chinese tradition and culture as a sense of common responsibility and collective heroism in contrast to the individual heroism and belief in miracle-performing leaders that prevails in the West were projected into this description of a journey. From the perspective of the themes of this article, what became evident is that size is not necessarily a problem for Asians, nor is governance of metropolises due to size, either (as I later found out, the Chinese language doesn't even have a word for size as a phenomenon). The story also deepened my conception of what family values and sharing can be, at their best, in China. And

22 Challenges of climate change, luncheon conversation at Tanner lecture 14.2.2008

23 Anne Wu: In China, a beacon of heroism. International Herald Tribune, Tuesday, February 26, 2008

what is perhaps most important from the perspective of the main theme of this article is that it provided a foundation for believing that genuine democracy, made and shared by people, expresses itself on many levels of life (viz. *Very Many Democracies*, Committee for the Future publication 4/2008).

Differences between the European and Asian ways of thinking

Study trips can give no more than glimpses of another world. Thus before the trip I looked for a book that would add to my understanding of Asia – one that would be all-round educational in character. I wasn't looking for an answer to the question of what is thought or what should be thought, but to how people think. One publication of this kind that I found is Richard E. Nisbett's *The Geography of Thought. How Asians and Westerners Think Differently...and Why* (2003). The book is based on the results of research by Yale University into differences between the Western and Asian ways of thinking. It looks at the matter in terms of behavioural science, i.e. psychology. Another work that is widely known in the field is Geert Hofstede's comparative study *Cultures and Organizations. Software of the Mind* (1997). He divides the uniqueness of the human mind between three levels: human nature, culture and personality. Culture is linked to a group and learned. Personality, on the other hand, is individual-based and both inherited and learned.

Nisbett begins by simplifying the issue and noting that the world is divided into two parts. Over a billion see themselves as standing on the foundation of the doctrines of Ancient Greece and two billion claim to be the inheritors of the thinking of Ancient China. Both strains of thought were born around the same time, about two and a half millennia ago, and in the same corners of the world, but they differ completely from each other not only in philosophy, but also in social structures and achievements. According to Nisbett, the differences between the Western and Asian cultures are still reflected in ways of thinking. He describes the differences today also in concrete terms in various sectors of life, basing his interpretation on psychological comparisons. I shall highlight only a few general matters that are significant from the perspective of the themes of this article.

In Greek thinking a human being was an individual, who was responsible for his life and free to act as he wished. Participation, democracy and debate – seeking the truth – were everyday life to the citizens of the city-states, who had become familiar with agriculture in its proper sense only a couple of thousand years after the Chinese. Theatre and poetry recitals made life special. Happiness was defined as a free individual's unrestricted opportunity to realise his abilities in the best possible way. Democracy included the opportunity of everyone belonging to the polis (the system did not apply to slaves and women) to participate without representatives or intermediaries in open discourse, present their own opinions, influence the way matters were taken care of and call prevailing conceptions into question. Responsibility meant, among other things, that high offices were rotated. As a model of government, democracy already then brought into the Western cultural tradition such elements as personal

liberty, collective affairs, public exercise of power, a universal franchise, direct democracy, deliberating and making decisions through discussion, explaining the reasons for decisions, majority and minority, freedom to choose one's place of residence and rotation of offices of state and governmental and representative tasks. The latter practice was an effective way of preventing tyranny.

In Chinese thinking, by contrast, a person was a member of a group and strove for harmony and agreement. The Chinese view of life is founded on three philosophical traditions: Confucianism, Taoism and Buddhism, of which the latter represents much later thinking. All of these philosophies emphasise harmony. They do not encourage people to indulge in abstract speculation. Self-restraint and striving for the best performance – for perfection – are valued. In the Chinese tradition, happiness meant living in the countryside in beautiful surroundings, in peace with family, relatives and the other people of the village. In the Confucian way of looking at things, morality meant hierarchic responsibilities between ruler and ruled, parent and child, man and woman, elder and younger brother, and between friends. If the objective in Greek philosophy was to find the truth, the aim in Confucian thinking was to find the path to harmony. The differences between ideals and ways of life can be clearly seen in the art of the period. Grecian vases depict battles, courage, sport and even wild festivals of urban life, whilst Chinese pottery is adorned with illustrations of family happiness and the natural beauty of the countryside. In its own way, language also reveals a difference: for example, there is no word for "individualism" in Chinese. The closest approximation is the word for "selfishness".

From the perspectives of the themes of urbanisation and culture, there are a lot of differences with regard to the way of thinking. Unlike in Greece, criticism and debate were actually inappropriate in China. Calling matters into question was unknown. The Greeks lives in city-states, the Chinese in villages. Greek merchants sailed the seas, were free men and could educate their sons well. Members of the intelligentsia who had lost out in a debate could freely change city-state and continue arguing their case there. People were encouraged to think theoretically, outline the world with the aid of abstractions, be curious, call the existing paradigm into question and be interested in knowledge for its own sake. This tradition has not been inherited from Ancient China. In its place are practices. Abstract phenomena are circumvented in the language. Chinese lacks a word for "size/magnitude" or a word ending equivalent to "-ness" (whiteness is swan white or snow white). China was completely superior to Greece in technology, but science as a public discourse, as argumentation, as a cause-and-effect chain, as presentation of supporting evidence and above all as rhetoric comes from the Greece of Antiquity. A strong right/wrong mentality has been a feature of religion in Western countries from the very beginning, whereas the dominant approach in Asian religiosity has been a both/and one. To the educated of Antiquity moderation was an important thing and anyone who forgot it would suffer eternal punishment by the gods.

To put the matter in a nutshell, in Western thinking the world is relatively simple. This is illustrated by a discovery that has been deemed the greatest achievement of science in Ancient Greece: the definition of nature. Nature is the universe minus people and their culture. No other civilisation has been able to achieve this. Only the Greeks

came up with the idea of distinguishing the external objective world from the internal subjective one. This in turn was possible once the Greeks had acquired, thanks to their tradition of debate, a very strong understanding of subjectivity. Holisticity, diversity and understanding of connections are typical features of Asian thinking. The world is complicated.

One of the worst setbacks for Western civilisation was the Middle Ages, which were an agrarian era. At the same time as a variety of persecutions and religious wars were raging in Europe, the Arabs were discussing Plato and Aristotle and the Chinese were distinguishing themselves in all fields of art. As early as the late Middle Ages, however, the Western city states both in the North and the South began flourishing. The rights of the individual, personal liberty, rationalism, linear thinking and awoke from a millennium of silence and quickly challenged China in progress. In science Galileo and Newton and in morality as well as religion, Luther were manifestations of a new free European way of thinking and conception of the human being. In Christianity, the reformation has proved important in cultural traditions, because old doctrines that have remained unchanged for millennia are still able to guide people's behaviour strongly.

A dearth of debate, criticism and abstract thinking combined with a striving for harmony has affected the development of not only science, but also - and centrally - of another societal institution, i.e. law. The purpose of law in the West is, on a general level and also with the future in mind, to resolve a problem, dispute or inclarity so that in practical situations the final outcome, critically appraising the actions and interests of the various parties and the damages that they have caused or suffered, is just. Especially in American justice, the starting point is that right and wrong exists and there is a winner and a loser. In Asia it is a matter of finding a middle-way solution in a conflict or state of hostility as a concrete situation in a community of people. One of the things that follow from this is that hierarchies and the needs of the group are accepted in the East, whereas in the West the emphasis is on equality and personal status and action. There is a willingness in the West to eschew harmony in the name of justice and moderation. Indeed, it is often said jokingly that Chinese justice is an art and not a science.

Something else that is of essential relevance from the perspective of the democracy theme is the different approaches to human rights. In the West the relationship between individuals and the state is seen as being an individualistic one. In Asia the rights of individuals are founded on the fact that they are members of the community. Individuals get their share of collective rights. In the Western way of thinking human rights are strongly moral matters and are discussed in moralistic terms. What is involved in Asia is not just a different moral code, but also a different conception of the human being. Nisbett points out that it is difficult for Asians to understand for example why, in the name of Western freedom, so much violence, so many crimes or violations of human dignity are shown in television programmes.

Nisbett concludes his psychology-based book by pondering future development prospects, taking two differently oriented predications by two social scientists as his focus of comparison: Francis Fukuama's final triumphal march of capitalism and de-

mocracy and Samuel Huntington's clash of civilisations. Do Asians adopt a way of thinking in accordance with the Western cultural heritage or vice versa? He points out that comparative studies of values show that some Western values, such as equality and independence, have been transferred to the East and manifest themselves there even more powerfully than in the West. Another surprising finding in the survey results is that in the West traits usually associated with Asia, such as self-discipline, loyalty and even respect for traditions and parents were esteemed more highly than they were in Asia itself. He reminds us of how the character of capitalism has changed and of its ability to embrace features from various cultures. In his view, people are bicultural in the social sense. They behave in two ways: part of the time in accordance with the Western cultural heritage and part of the time more in accordance with the Asian. The book concludes with the author expressing his belief that what lies ahead is a convergence of civilisations.

Measurements are held in high regard in American science. Nisbett's low-tech psychological measurements are partially supported by the latest advanced brain research technology. According to brain researchers, the influence of culture is not confined to language and customs, but also to how people perceive the surrounding world. Using a camera metaphor, it is said that individual-centred Westerners see matters through a zoom lens, whereas the collectiveness-emphasising Asians see matters as a panorama. Expressed more precisely, the researchers conclude that people see the same thing, but they think in different ways and interpret what they see differently as well. This is reflected in, for example, how lengths and depths are seen in the West and the East. A detail in brain research that is interesting from the perspective of the family theme is the difference between American and Asian 8-year-olds in their ability to solve jigsaw puzzles and problem games. American children performed better in games that they had themselves selected, whilst Asian children coped best with games that were said to have been chosen for them by their mothers.[24]

The Asian Nobel laureate Amartya Sen's different views

While writing this I remembered a good Asian presentation of cultural heritages that I heard in Washington five years ago. The speaker was the Nobel laureate I have already mentioned, Amartya Sen. He invalidates nearly everything that I have learned in the Western discourse about the differences between the Western and Asian cultures and cultural heritages. I had written one sentence on the duplicated copy of the lecture that had been given to us. "Culture is suddenly being used to explain success and decline."

According to Sen, those who invoke culture overlook the importance of other factors, see culture too narrowly and misunderstand people's identity, which is regarded too emphatically as being founded on religion and the values it creates. People have many identities. He believes it is dangerous to divide people simplistically, especially with the aid of religion-based cultural conceptions, forgetting the great diversity of

24 East and West: Seeing the world through different lenses. Health&Science, International Herald Tribune, 6 March 2008.

things that people themselves see as the foundation of their identity. People belong to different human communities, based on such factors as where they live, nationality, class, occupation, education, hobbies and many others. Alone factors like politics, conceptions of social justice and morality divide and unite people in many ways in all human communities. People choose where they want to belong and have several identities at the same time. Regarding people as having one identity feeds hostility and violence. When the esteem accorded people is based on only one identity, and especially when that basis is religion, we find ourselves in a situation where terrorism is linked with cruel simplicity to Muslims or Arabs. People are categorised stereotypically irrespective of where they come from and what else they are and above all what they themselves want to be and to which group they want, on the basis of numerous choices, to belong. [25]

Sen sounds a warning against all kinds of grand theories and generalisations. Thus he takes apart, on the one hand, the theory of a Western cultural tradition, Max Weber's Protestant ethic and general conceptions of European civilisation and, on the other, the ideas about Asian values that have been so forcefully advanced against the background of Asia's economic upswing. Culture can not be examined in detachment from other sub-factors in society. Culture is not a permanent phenomenon. For this reason also Asia has many cultures and cultural heritages. The tradition of religions is diverse, such as in Japan which is made up of Confucian, Buddhist, Shinto and Christian traditions. He corrects, for example, Huntington, who categorises Indian as a Hindu civilisation. There are 150 million Muslims in India. i.e. more than the combined population of Britain and France or a lot more than almost any other of the peoples or population segments that are defined in Huntington's theory as belonging to the Muslim world. Sen criticises the clash of civilisations theory also on the ground that in it Western culture is seen as a single entity and because a good ability to tolerate others and freedom are emphatically and consistently evaluated as constituting its defining feature.

Claiming the idea of democracy as an exclusively Western heritage is not, in Sen's view, tenably founded. The Greeks received influences and were probably most exposed to the other countries in their immediate region, i.e. with the ancient Iranians, Indians and Egyptians. The administrative model based on elections did not find successors in the West, i.e. from the peoples of what are today France and Germany. By contrast, democratic local government according to the Athenian model can be found in Asia. In Iran, for example, the city of Susa has been administered for centuries with the aid of representative assemblies and councils that are chosen in elections. A culture of open argumentation was flourishing in India as long ago as the third century BC. Indeed, a set of rules for public discussion was even compiled there. The situation was the same in the Muslim cities of the Middle East. In general, claiming freedom, discussion and argumentation as a Western inheritance is a misunderstanding. The linkages between Western science and Chinese, Arab, Indian and many other cultures should be highlighted. When he speaks of the curse of globalisation, he reminds us

25 Especially Amartya Sen: Identity & Violence. The Illusion of Destiny. 2007

that a thousand years ago achievements of science, technology and mathematics were spreading rapidly in the world a thousand years ago, but in a different direction from what we have been led to believe. Such examples of high-tech inventions as the clock, the compass, paper, printing, the magnet and gunpowder were all made in China and spread from there to the rest of the world.

The dominance and self-satisfaction of Western thinking, science and culture have prompted as a counter-force in many cultures an excessive emphasising of one's own cultural tradition. In Sen's view, some have gone so far in this respect that, to their own detriment, they have rejected Western science and art and embraced their own achievements at too weak a standard. Unnecessary dichotomies have led to not only an intellectual fog, but also to intolerance, isolation, hostility and even terrorism.

Sen also cautions against the mantra of multiculturalism. He regards it as a bad thing that the establishment of religious schools (a fresh example being Islamic schools in Britain) is being allowed and encouraged in the name of multicultural and freedom. It is wrong to force children, who have not yet had the opportunity to choose anything from many identities, into one religious school with all of the broad consequences of this. It is a fateful error. Isolation and leaving people alone are, on the whole, a bad thing. Another danger inspired by multiculturalism that Sen recognises is that of seeing participation and exercise of influence through the lens of a single identity. It is a bad mistake to choose a large group of people that are as different from each other as possible, for example from the Arab countries, to represent a narrow single identity – in practice a religion and also from it a spiritual leader who protects the purity of the faith. Doing this lessens opportunities for interaction. These internal differences must be recognised in all cultures.

I wrote in the beginning of this article about the linkage between the family and democracy. A startling analysis of present-day population statistics springs from the pages of Sen's book. According to him, 100 million women, most of whom are Asian, are "absent" from the world. He goes through certain starting points, such as that more boys than girls are born everywhere, wars have reduced the number of men and women's life expectancy is high in several developed countries. Whereas the ratio of women to men is 1.05:1 in the Western world, the figure for Egypt is 0.95, China and Bangladesh 0.94, India 0.93 and Pakistan 0.90. Through a variety of comparisons, he inevitably arrives at the conclusion that 100 million girls and women are "missing" in Asia.

With what does Sen conclude his book Identity & Violence? With hope. With his belief that a global democracy is already among us – in the form of discussion of the environment and a division of world income, public argumentation and protests. There is no need to wait for some or other gigantic democratic global state to appear with all of its institutions.

New: an Asian female researcher's analysis of world power, democracy and the future

After the trip I finally looked for also an Asian interpretation of the big patterns of the world. This time I made sure that democracy is included in the examination. In democracy the majority is an important thing. The majority of people, i.e. women, are still everywhere less in evidence in the field of power, even retrospectively analysing the forms and movements of power. Those who have interpreted the history of the exercise of power have in truth not been women, at least not Asian women. Now, for the first time, the intelligentsia who ponder power in and the future of the world are reading a book of this kind, Yale professor Amy Chuan's bestseller *Day of Empire. How hyperpowers rise to global dominance – and why they fall* (2007). Her parents are Chinese, but have lived in the Philippines and, since 1961, in America. How does she see the development of global powers?

History knows times when the only way to become the richest country in the world was military conquest. Military superiority combined with economic power is still needed to achieve the status of the world's richest, but trade and innovations have become the real motors of wealth. In Chuan's assessment, however, the touchstone for achieving global dominance and of losing it is tolerance, or an ability to accept diversity. She points out that, despite their differences, the world powers of the past - Persia, Rome, Tang China, Mongolia, the Netherlands and the United States – have all been, at least by the standards of their times, unusually tolerant, diverse, open and liberal-minded. All of them allowed gifted groups of people that others rejected to come to their countries. By contrast, Germany and Japan failed to achieve world dominance because of their racial and religious narrow-mindedness and oppression. According to Chuan's theory, multiculturalism and broad tolerance also provided a place for counter-forces or downright aroused them and then the world powers lost their status when they were no longer able to handle the situation. When this happens, the great power's peripheral countries and regions decay and the central power is no longer obeyed. This leads, in turn, to a tightening of discipline and greater intolerance, and that ruins chances of success. In Chuan's view, no global power lasts for ever and she wonders whether the United States is now at the peak of its development.

What does Asia's future look like in the great-power and global hyperpower pattern? Also there, democracy and tolerance belong together. As Amartya Sen has said, the foundation on which the raison d'être and development of the world's biggest democracy, India, are based consists of homogeneity and openness, in which respects it clearly outshines the United States. India has 16 official languages, at least 22 languages are spoken by over a million people, there are thousands of dialects and the country is also home to the world's biggest Muslim population (150 million) after Indonesia. Legislation and politics have been tolerant. However, serious setbacks for democracy and freedom have not been avoided. Something that has also been seen in India is how quickly peaceful coexistence between people can be replaced by hatred and killing. After the 1998 elections India was made a Hindu state and it was only four

years later, in 2002, that thousands of Muslims were massacred. Peace was restored in the 2004 elections, but tensions live on. India has plenty of strengths, of which one of the most important is its young population. Half of India's population are under-25s, whose creative ability is being channelled into new sectors of industry. According to Chuan, the Indians, 71% of whom said in a poll in 2005 that they had a positive picture of America, are not however interested in a great power status, but rather want partnership with America.

It may again be different with China.

Looked at in the light of Chuan's main thesis – that tolerance is a prerequisite for hyperpower status – China would not seem to be in a position to rise to a position of world dominance. With a few exceptional periods, its history is one of being a closed country. In the political sense, the past fifty years of one-party rule have been a period of profound regression. The country's administrative culture has long been authoritarian. Officially China is almost ethnically homogenous and atheistic. There are still more people leaving the country than emigrating to it. However, as Chuan points out, something that the Western countries and also the Chinese themselves have failed to notice is that China has succeeded in building its success on the basis of a long-term policy of strategic tolerance.

In fact, China has over the past 3,000 years succeeded in doing what the European Union is now attempting. Within one political unit it has assembled a vast number of people with very different cultural, language, geographical, ethnic and tribal backgrounds. China has been a meeting place of the greatest imaginable diversity of cultures, religions and customs for millennia. Trade has been one of the most obvious unifying factors. In Chuan's assessment, China has succeeded better in its integration efforts than the architects of the European Union have dared to dream of in their wildest visions. Western experts often say that the Cantonese, Shanghaiites and many other groups should be accorded their own ethnic identity. But not the Chinese. Both at home and abroad they are Chinese with a common language and they all feel they belong to the Chinese nation, i.e. that 92% of them are Han Chinese. In the West, attention is paid to political disputes and discrimination against small religious sects in a situation where the European Union is trying to bring 450 million Europeans together while 1.3 billion Chinese are loyally behind China.

Otherwise, too, China is succeeding in many other things that others are not. Chuan points out that China has rapidly established relations with those rogue states that the Western world has not been able to accept, for example because of violations of human rights, without protest. At the same time, the latest global survey (Pew) revealed that a majority of citizens in Canada, France, Germany, the Netherlands, Russia, Spain and Britain are more favourably disposed towards China than the United States. This can be seen as a great triumph of a strategic tolerance policy rather than as a failure of the image edifice of the USA, as which it is often interpreted.

Allowing for how short a time it has been since China threw open her economy to the world, its achievement of a regional economic leadership role will be surprisingly rapid. Also militarily, its rise from regional-level leader to one of the world's major military powers (official figures for annual growth in military expenditure have been

17% and the latest is 18%) will happen quite soon. If, in addition to this, it is able to resolve its environmental problems even moderately well, the basic prerequisites for achieving global power status will be strong.

Nevertheless, Chuan believes, China will continue for a long time to need the knowledge and skills of other countries and peoples, human and social capital as well as ultimately the most important thing of all, tolerance, if it wants to become a hyperpower. Thus, in order to take its place among the world leaders, China should be able to attract the most precious thing of all; i.e. get the world's best scientists, engineers, infrastructure planners and artists to move there. They should be persuaded to work loyally and with commitment for the new superpower. So far, there is nothing that even indicates a willingness to broaden the concept of Chinese. Instead, the objective of strategic tolerance is to integrate the 55 million expatriate Chinese who live in 160 countries, through whom flows $2 trillion in wealth and who annually make a result equivalent in size to Australia's GDP, $600 billion. China has also been buying enormous numbers of not only production facilities, but also product development establishments and whole training and university institutions from other more developed countries. Chuan does not believe, however, that even this Chinese know-how will be enough to secure world leadership.

As already mentioned, the Chinese identity is a strong unifying factor, but with ascending to world dominance in mind, it is also a weakness at the same time. Indeed, Chuan assesses it as an obstacle. But, as also in the case of India, the question that must be asked is whether the Chinese feel a need to become a hyperpower. Is it enough for them to be one powerful state alongside others – the United States, India, Russia, Brazil, the EU? Also on this level, it is ultimately a matter of democracy and sharing.

What did I learn?

The question one is generally asked after a training day or study trip is generally: "What did you learn?" I knew beforehand that 60% of the world's people live in Asia, but on the trip I learned to understand that Asia's many peoples are made up of numerous different cultures. An Asian person, in common with all of us, always has many identities. To simplify and categorise is not only uncivilised, but also even dangerous.

China's and India's ascent to an economic and perhaps later political leadership status may be pondered more clearly than is now the case as the question of what kinds of traditions and values or what kind of Weltbild, conception of the human being and way of thinking the new powerful states and metropolises of the future will represent. How will democracy fare? As a Western person, I suppose I think, despite warnings, and critically zooming linearily, causally and with objective rationalism, that, as has been the case throughout history, the victors will guide the development. If not war, a slump in the global economy (including China's dollar-linked economy) following the collapse of the dollar, a climate catastrophe or some other major intervening factor could put a stop to development and have implications for a renaissance in the Asian – or more precisely at least the Chinese, Indian and Japanese – conception of

civilisation and way of understanding the world and democracy. With Amartya Sen's doctrines in mind, what this will mean in practice is rather unclear.

The future is made by people – it is the result of politics and the political choices that have to be made.

It is recognised in the Western world that an understanding of diversity will be needed in the successful societies of the future. Features that are emphasised in this thinking are systems intelligence, management of totalities and a sense of community. These traits are strong in Asians. Part of the explanation for why the best students at American universities come from Asia may be attributable to a cultural tradition that lends itself very well to future success and their way of grasping the reins of a new world.

Over the long term, it is possible to see the Greek and Chinese cultural traditions that came into being two and a half millennia ago becoming the foundation for the emergence, through harmony, of something that we simply can not yet outline in our imaginations even as a theory or describe through the medium of language.