Nordic Council of Ministers

Nordic Innovation Monitor 2009

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Nordic co-operation
Nordic cooperation is one of the world's most extensive forms of regional collaboration, involving Denmark, Finland, Iceland, Norway, Sweden, and three autonomous areas: the Faroe Islands, Greenland, and Åland.

Nordic cooperation has firm traditions in politics, the economy, and culture. It plays an important role in European and international collaboration, and aims at creating a strong Nordic community in a strong Europe.

Nordic cooperation seeks to safeguard Nordic and regional interests and principles in the global community. Common Nordic values help the region solidify its position as one of the world's most innovative and competitive.

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Preface

At the 26 and 27 of February 2009, the second Nordic Globalisation Forum will take place in Iceland. The Forum this year will focus on climate, energy and innovation. The Nordic Innovation Monitor will be presented for the first time ever at the Globalization Forum 2009.

The Nordic Innovation Monitor exists in a short and a longer version. This is the full version that gives an in depth analysis of the innovation performance of the Nordic countries compared with leading countries in the world and the frameworks that exists in the individual countries. It allows for a fact based policy, and for learning from those countries in the world that shape the best conditions for innovation. It also allows for a more in depth analysis of each country. You will find the short version at www.norden.org.

The analytical model has been used to help shaping national policies in Finland, Denmark and Holland. It also shows interesting perspectives, when looking at the five Nordic countries together.

The Nordic ministers of Enterprise will in 2009 start the discussions on a new Nordic strategy on innovation. The global economic crisis has enforced the focus on innovation, and the need to constantly improve performance in order to preserve the living standards and welfare systems as we know them in the Nordic countries.

I hope, that the Nordic Innovation Monitor will serve as a fact based platform that will lift the discussion on Nordic innovation to a new level and also serve as an input to discussions of the Nordic Ministers of Enterprise later this year.

I would like to thank the authors Charlotte Kjeldsen Krarup, Henrik Lynge Hansen, Lise Andersen and Rikke Blæsbjerg Nielsen (FORA) for their excellent work. The analysis and conclusions in the Nordic Innovation Monitor are those of the authors and do not necessarily reflect the views of the Nordic Council of Ministers. However, I am convinced that the Nordic Innovation Monitor will be a useful instrument in our future work improving the Nordic conditions for innovation.

Copenhagen, 3 February 2009

Halldór Ásgrímsson

Nordic Innovation Monitor – 2009

The Nordic Innovation Monitor has been written by FORA for the Nordic Council of Ministers. The report will be presented at the Nordic Globalisation Forum in Iceland, February 2009.

The year 2009 marks the starting point of Nordic Innovation Monitor. For the first time, the Nordic countries will get access to a common frame of reference regarding policymaking on innovation. The Nordic Innovation Monitor provides a tool to get an overview of innovation challenges and policy instruments in like-minded countries.

The Nordic Innovation Monitor highlights areas of innovation policy where the Nordic countries could improve their framework conditions for innovation. Nordic Innovation Monitor can also be used to guide the Nordic Council of Ministers in where they could benefit from joining forces to address common challenges enabling them to exhibit better innovation performance in the future.

The engagement and help from the Nordic countries in qualifying the results has been outstanding. In each of the Nordic countries, valuable contributions to the Nordic Innovation Monitor have been given by key policymakers and innovation experts including:

- Anders Hoffmann, Deputy Director, Danish Enterprise and Construction Authority, Denmark
- Arne Eggert, Head of Division, Danish Ministry of Education, Denmark
- Elvar Knútur Valsson, Project Manager, Iceland Innovation Centre, Iceland
- Göran Marklund, Director, Head of Strategy Development Division, VINNOVA, Sweden
- Gudrun Thorleifsdottir, Legal Adviser, Ministry of Industry, Energy and Tourism, Iceland
- Hans Müller, Deputy Director General, Danish Agency for Science, Technology and Innovation, Denmark
- Ivar H. Kristensen, Managing Director, Nordic Innovation Centre, Norway
- Janne Känkänen, Head of Division, Growth Companies, Ministry of Science, Technology and Innovation, Finland
- Jørgen Bang Andersen, Senior Innovation Adviser, Nordic Innovation Centre, Norway
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- Per Koch, Director for Analysis and Strategy Development, the Research Council of Norway, Norway
- Petri Letho, Head of Division, Innovation Department, Ministry of Employment and the Economy, Finland
- Rolf E.R. Næss, Assistant Director General, Ministry of Trade and Industry, Norway
- Thorvald Finnbjörnsson, Head of Analysis, Evaluation and Indicators, RANNIS, Iceland
- Yrjö Sotamaa, Professor, Interior Architecture and Furniture Design, University of Art and Design, Finland

FORA kindly thanks the innovation experts for their helpful contributions. A special thank goes to Jørgen Rosted, Director, FORA, for his valuable contributions to the report.

The report has been compiled by a project team in FORA with the participation of Charlotte Kjeldsen Krarup, Manager, Henrik Lynge Hansen, Economist, Lise Andersen, Analyst, Rikke Blæsbjerg Nielsen, Research Assistant and Mikael Lindholm, Freelance Journalist.

Executive Summary

The world is facing a severe economic crisis. How long and how deep the crisis will be very much depends on the design of future economic policies. A dynamic economic policy is required to alleviate the damages and to secure a strong platform for growth and employment once the crisis is over.

However, the crisis is not only a threat. It also offers opportunities that – if exploited properly – may lead to stronger and more sustainable economic growth. This presupposes that economic policy contributes to solving serious global challenges such as climate change, resource scarcity and social needs.

Innovation is a prerequisite for developing new solutions to global challenges. It is therefore evident that a strong innovation capacity is crucial to a dynamic economic policy. Furthermore, innovation is regarded as one of the main sources of competitive power, value creation and job creation.

The Nordic Innovation Monitor

The Nordic Innovation Monitor measures the innovation capacity of OECD countries and highlights areas where the innovation framework could be strengthened.

Innovation capacity depends on the politically-shaped framework for innovation and how the business community uses framework conditions to innovate. Four framework conditions are believed to have the largest impact on innovation capacity[1]:

- Human resources – because innovation is about promoting human talent and freeing-up resources for innovative thinking
- Knowledge creation – because innovation is about developing new and relevant knowledge and applying knowledge in the proper forum
- Innovation and communication technology (ICT) – because innovation is about utilising the opportunities offered by technology
- Entrepreneurship – because innovation is about commercialising entrepreneurial behaviour

The Nordic Innovation Monitor measures the strength of the four framework conditions as well as their output. The framework conditions are measured using 135 statistical indicators across 42 policy areas. The output, or performance, is measured using 30 indicators across 9 areas. Analyses show that strong framework conditions materialise into strong performance.

Results

Comparing OECD regions the Nordic Innovation Monitor shows that:

The Nordic region performs well in information and communication technology (ICT). Both citizens and businesses master ICT, and the Nordic region offers the world's best framework conditions for ICT.

In the area of knowledge creation – research and technology diffusion in particular – the Nordic region is investing heavily and matches the world's top-performing countries. There is, however, some uncertainty as to whether these investments will help secure all of the key competencies necessary to cope with future competition.

The Nordic region performs well in the area of human resources. In general there is a big pool of talent across the Nordic countries and the framework conditions for education and competence building match the world's top-performers. However the Nordic region has been stagnating in this area, indicating that it will be chal-

1) *Innovation Monitor*, 2004.

lenging to maintain high competence levels in the Nordic workforce.

In the area of entrepreneurship, the Nordic countries lag behind significantly. The Nordic countries have a weak entrepreneurial culture, and there is a shortage of emerging growth entrepreneurs when comparing against the best-performing countries.

The Nordic region is among the world's most competitive and affluent regions. This is quite extraordinary given that the Nordic region has societal frameworks characterised by a large welfare state with high tax levels and extensive regulation; this is in stark contrast to the Anglo-Saxon framework, which has long been regarded as the most successful model for economic growth.

According to the Nordic Innovation Monitor, a large part of the Nordic countries' economic progress can be accredited to investments in policy initiatives that strengthen the framework conditions for innovation.

Hence, it would appear to be a straight-forward exercise to further strengthen these initiatives as a critical element in the drafting of future economic policies. Among other things, this can be accomplished by sizing individual Nordic countries against the world's best on the four framework conditions for innovation. The cultural similarities found among the Nordic countries make it relatively simple to transfer best practice from one country to another.

Denmark

In terms of performance, Denmark is the top-ranked Nordic country and is ranked 4th overall. Denmark has made significant progress over the past five years and is the top-performing country in management and organisation in the area of human resources. However, better access to high-skilled knowledge workers need to be addressed.

When measuring framework conditions, Denmark is a world leader in human resources, particularly in lifelong learning and Denmark has good conditions for organisations. On other indicators of human resources (such as the share of young people in higher education), Denmark's ranking is average. Denmark is also a world leader in the area of ICT. In knowledge creation, Denmark's ranking is average. Two areas are particularly troubling: the attractiveness of the Danish companies to high-skilled foreign knowledge workers where Denmark ranks 21st; and a poor showing in the business financing of public research (17th). In entrepreneurship, Denmark is relatively strong in terms of start-up companies. This was not the case a decade ago but is the result of a dedicated political effort. However, Denmark lags behind in the share of growth entrepreneurs. Denmark also lags behind in the area of entrepreneurship education.

Finland

Finnish performance has been stagnant over the past five years. Finland is now ranked 7th among all OECD countries and second-to-last among the Nordic countries, which have surpassed Finland. Two areas in particular have been in decline: the business community's ability to apply employees' creative and innovative potential, i.e. organisation and management related indicators, and companies' evaluation of the innovation activity level is low.

In terms of framework conditions, Finland belongs to the world elite in human resources when measuring the competence level in the workforce. This is a testament to the strength of the educational system. On the other hand, the business community's ability to use knowledge worker skills has deteriorated in recent years. In general, Finland lags behind in management and organisation, which may help explain the latter. Finland is part of the world elite when sizing knowledge building investments. However, in terms of innovation activity, Finland is only ranked 11th. This would indicate that Finland is not realising the full

potential of its education and research investments. In entrepreneurship, Finland performs well in the area of growth entrepreneurs, but still trails the world's elite.

Iceland

Iceland has improved its performance over the past five years and is part of the world's elite along with the other Nordic countries. Over the past decade, Iceland has made the transformation from a fishery and tourism based economy to a service based knowledge economy. Iceland is investing more in research than any other Nordic country. Iceland is part of the world elite when measuring the share of knowledge workers, and is ranked 2nd in terms of the business community's ability to use their employees' skills.

In terms of framework conditions, Iceland ranks 2nd. The investments in education is average and unless the political focus is maintained, Iceland will likely see cutbacks on these investments and thus weaker framework conditions given the current economic crisis which has hit Iceland hard. Iceland's ICT infrastructure is world-class, but Iceland lags behind the other Nordic countries in terms of the ability to use ICT as an innovation tool. Iceland has the best framework for innovation among all Nordic countries and also has a relatively strong entrepreneurial culture.

Norway

Norway is ranked 15th among all OECD countries in terms of performance. Norway has access to vast amounts of natural resources such as oil, which makes the country less dependent on innovation capacity. It may also be that Norwegian businesses have developed an innovation capacity which is particularly well-suited for this sector. Norway is the top-ranked Nordic country in ICT and is also relatively strong in terms of the ability of businesses to use employee competencies.

Norway's record is mediocre when sizing framework conditions, despite sizable investments in education. The share of highly-educated people in the workforce is low. In the area of entrepreneurship, Norway lags behind in growth entrepreneurs (as is the case across the Nordic region) although framework conditions are quite good. The entrepreneurship culture is not strong. In terms of knowledge creation, research investments are quite substantial, but Norway's track record is mediocre when measuring business executives' assessment of the innovation capacity.

Sweden

Sweden is the world's top-ranked country in human resources – in particular when measuring the share of researchers. Sweden is also ranked well in the area of knowledge building. Sweden remains the only Nordic country to be ranked in the top-5 in both knowledge sharing and knowledge building. This clearly shows that knowledge production is at the core of Sweden's innovation policy.

In terms of its framework conditions, Sweden is ranked 9th world-wide (trailing Denmark, Finland and Iceland). However, the framework conditions for knowledge creation are world-class, and so are the framework conditions for ICT. The framework for entrepreneurship is rather poor although Sweden performs well in the venture capital market. However, Sweden lags behind in the area of growth entrepreneurs. Sweden's position is further eroded by poor showings in entrepreneurship culture, entrepreneurship education, and tax structure.

Emerging Innovation Trends

The Nordic Innovation Monitor measures innovation capacity based on internationally available data. Like in other benchmark models it can therefore be difficult to grasp new trends and practices that impact innovation capacity.

Furthermore, it is not possible to measure the correlation between Nordic cultural values and innovation capacity. It is quite obvious that Nordic values such as a limited distance to power, flexibility, inclusion, environmental consciousness etc. will impact innovation capacity.

The Nordic Innovation Monitor presents some new innovation trends that the Nordic countries are particularly prepared to turn into competitive advantages and sources of growth:

Pace-setting companies around the world have opened up their innovation processes and are now including customers and users in the core innovation process and in production. The so-called user-driven innovation process creates products that are tailored to meet individual users' needs. It is a trend that presupposes strong ICT and collaborative skills – skills that are prominent in the Nordic region. By further developing these competencies, the Nordic countries will be able to build new competitive advantages.

Globalisation has opened the world's knowledge and skills to even the smallest of companies. It is important for companies to be able to take part in global knowledge sharing and have access to specialised knowledge which is relevant to them. It is an important task for Nordic governments to draft policy measures that ensure that the surrounding world is involved in Nordic knowledge building and competence development.

Global issues such as climate change and social needs have had increasing importance as drivers of innovation. More and more companies are putting efforts into building new solutions to these challenges in public/private partnerships. Each of the Nordic countries are well-prepared to develop new solutions to deal with these challenges, but by creating good framework conditions for collaboration in this area, the Nordic countries will be better at exploiting the opportunities on a global scale.

Recommendations

The Nordic Innovation Monitor demonstrates that the Nordic companies and governments are well-positioned to take a leading role in exploring innovation policies and guiding other countries on how to create a strong innovation capacity.

A number of areas stand out when looking into how the Nordic region could prioritise resources if the target is to improve innovation capacity:

Lever Existing Enterprising Behaviour

Entrepreneurship is the most challenging policy area for the Nordic region – hindering its ability to breed growth-oriented entrepreneurs. There could be a growth potential in approaching the challenge from a Nordic perspective.

The Nordic region could initiate a joint effort to define and implement a unique entrepreneurship policy – levering the region's innovative workforce and strong welfare system to support risk.

Educate Young People

Looking at the framework conditions for human resources, the Nordic region is among the global leaders, but the Nordic region is stagnating on this area. A challenge for the Nordic region is to find ways to attract young people to higher education and make them complete their studies. A shared Nordic effort in this area could put focus on developing an educational system that meets the needs of a global world.

Be Attractive to Foreign Talent

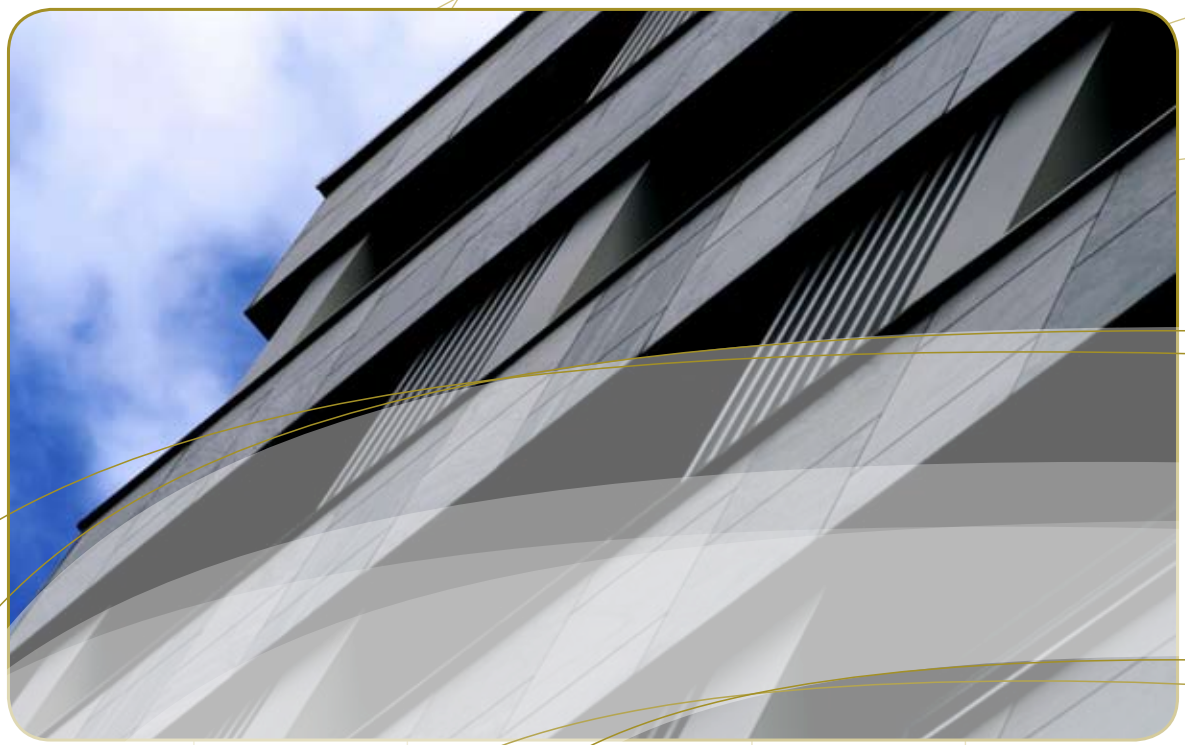
On knowledge creation, the Nordic region faces a challenge in attracting foreign knowledge workers to the region. Joint Nordic effort on how to attract globally sourced knowledge could prove to be effective in overcoming barriers in this area, since the Nordic region can present a wider range of career opportunities, networks of excellence, and cultural diversity than individual countries.

Embrace the New Innovation Trends

The Nordic region could experiment with the implementation of policy frameworks that will enhance private and public entities' capabilities to innovate, e.g. increase their competencies in involving users in the innovation process, engaging in open innovation partnerships where knowledge is sourced globally, and pooling the experiences and research in developing environmental and social solutions made by each country.

Improve Statistics

Finally, there could be a shared Nordic interest in developing the indicators required to make fact-based policy on new innovation trends and the output measures – also highlighting strengths of the Nordic welfare model that have not yet been systematically exposed in relation to innovation capacity.



1. Introduction

The global economic crisis calls for political leadership. We do not know the magnitude of the crisis, but the length and depth will very much depend on policy decisions. The Nordic countries have a more solid economic platform compared to most other countries, and therefore have the opportunity to carry out an economic agenda that will dampen the effects of the crisis and make the Nordic countries better-prepared to meet future global challenges.

Iceland is, as it looks now, faced with particularly dire economic problems that call for more comprehensive measures; however, nobody knows the exact impact of the economic crisis on the other Nordic countries. Should some of the Nordic countries be able to successfully steer through the economic crisis, the other countries' economies, including Iceland's, will undoubtedly benefit from the significant amount of inter-Nordic trade.

The economic crisis has underlined with terrifying clarity the importance of executing a long-term, stable economic policy that precludes extensive borrowing and secures low inflation, stable currency rates and low interest rates. If both private and public debt is allowed to grow, the economy may become vulnerable, and the effect may very well be an economic crisis as market conditions revert. This has happened to the US economy and is currently affecting all countries due to the US' key role in the global economy.

The economic crisis has also underlined the importance of effective markets and a balanced regulation of effective markets. Markets with little or no regulation are neither free nor effective; on the other hand, markets can also be over-regulated.

To achieve the right balance is a political task. And as shown by the current global crisis, there may be severe consequences from a lack of proper regulation of effective financial markets.

Governments across the world have responded swiftly and with great consequence to prevent a meltdown of the financial system. And countries that have felt the consequences of insufficient financial regulation are already, or are at least contemplating, changing their regulation.

In line with the re-building of the financial sector, the economic focus should concentrate on alleviating the effects of the economic recession. And this should be accomplished by implementing initiatives to kick-start economic activity.

It is critical that all countries contribute with dynamic economic policies to avoid a deep and prolonged crisis. However, countries may have different points of departure and should be given the liberty to follow their own dynamic economic agenda.

Public infrastructure investments that are also beneficial to the environment and social needs will probably constitute a significant element in most countries' policy approach. Countries looking to change their tax structures may find that the current economic climate is particularly favourable, as changes may be combined with economic stimulus.

One of the dominating elements in the dynamic economic policy in the coming years could – and should be – the ability of countries to innovate. Global challenges call for innovative solutions. The climate challenge can only be solved using novel environmental technologies that will allow us to re-organize economies from being dependent on fossil fuels to relying on renewable energy sources. Similar global challenges are evident in areas such as lack of clean water, starvation, poverty and security. But the world's affluent countries are also faced with significant domestic challenges that require new solutions such as the ageing of the population and a renewal of welfare services.

Box 1.1: Innovation

Innovation is defined as new solutions which add value to both customers and firms. Innovation takes place within private and public entities.

Innovation policy is defined as the creation of framework conditions which help companies and public entities in their innovation activities.

Innovation capacity is defined as a country's ability to create new valuable solutions. The capacity to innovate hinges on politically-designed framework conditions and companies' utilisation of framework conditions in shaping innovations.

A country's innovation capacity relates to investments in human resources, knowledge, information and communication technology (ICT) and economic structures that promote risk tolerance and entrepreneurship. The building of a country's innovation capacity will be critical for countries to push the frontier of what is possible in the search for solutions and improvements to human challenges.

Today, economists are largely convinced of the importance of innovation on economic competitiveness, jobs growth, and the increased welfare of citizens. Investing in countries' innovation capacity is therefore widely recognised as one of many elements for stimulating the economy. The relevance of innovation policy on growth will be discussed in chapter 2.

In the absence of well-developed theory, international comparisons – also referred to as benchmarks – may support policy development. The idea behind international benchmarks, like the Nordic Innovation Monitor, is to compare innovation capacity across different countries' framework conditions and respond to the following questions:

Are there common denominators in framework conditions among the most innovative countries?

Can framework conditions in the top-performing countries inspire other countries' innovation policies?

The Nordic Innovation Monitor is built on the assumption that good framework conditions will materialise into good performance. Innovation performance is measured by an index based on the output indicators of four drivers of innovation: human resources, knowledge creation, information and communication technology (ICT) and entrepreneurship[2].

2) Analyses show that the Nordic Innovation Monitor has a high explanation on growth compared to other available indices. For an analysis of this correlation between growth and Innovation Monitor, see *Innovation Monitor* 2006 and *Innovation Monitor* 2007.

The Innovation Monitor identifies two separate sets of relevant indicators:

- **Performance indicators:** a number of complex yet coherent activities that are generally believed to have a positive effect on productivity. The performance indicators measure output.

- **Framework condition indicators:** a quantification of policies and factors related to the four drivers of growth. The framework conditions are believed to have an effect on the performance indicators. The framework indicators measure input.

Each group of indicators forms an innovation index. These four indices measure the innovation capacity of OECD-countries.

The ranking of regions – and the ranking of each country on innovation capacity – underscores that the Nordic countries could benefit from learning from each other in order to improve their national innovation capacity. Not only do the Nordic countries share cultural values, most of the Nordic countries also share relatively high rankings in the overall index on framework conditions and innovation performance – making it evident that each country can find best practice experience within the borders of the Nordic region.

The Nordic Innovation Monitor will shed light on the micro-level policy areas needed to be addressed if the Nordic region is to maintain and increase the current level of wealth compared to other global regions. These issues will be addressed in chapter 3.

The Nordic Innovation Monitor can be used as a guide to governments for the strategic prioritisation of resources. This is particularly helpful in current times, when there is a political will to use innovation policy as a tool to increase growth, but there may be lack of knowledge on what the right approach should be. The Nordic Innovation Monitor can provide policymakers with a fact-based foundation to monitor countries' innovation capacity.

Through peer reviews of each of the Nordic countries, the specific challenges of individual countries will be addressed. The innovation capacity of Denmark, Finland, Iceland, Norway and Sweden will be described in chapters 4-8.

However, like all other benchmark models, the Nordic Innovation Monitor's methodology is based on internationally comparable statistics, and is therefore limited by the availability of such data. A key challenge is how to calculate the value created from innovation. No direct measure is available; hence one is forced to apply indirect estimation measures. As a consequence, the US Secretary of Commerce appointed a high-level committee two years ago with representatives from a number of leading US companies and an elite group of researchers. They have presented an interesting proposal for new innovation statistics[3].

Another challenge is the identification of new relevant drivers of innovation. The Nordic countries are currently working strategically with identifying new trends in innovation and analysing the policy implications of these new trends. The policy implications can have high impact on micro-policy within knowledge creation or entrepreneurship.

Based on qualitative findings and previous analysis, the Nordic Innovation Monitor report touches upon some of these new trends of innovation – aiming to pinpoint some areas where Nordic countries hold unique advantages in utilising the future innovation drivers competitively. The hypothesis is that the Nordic countries have the strengths and the fundamentals in order to be global front-runners in the new age of innovation. A detailed description on the values shared by the Nordic countries and the new innovation trends will be presented in chapter 9.

Recommendations based on the results of Nordic Innovation Monitor will be presented in chapter 10.

3) *Innovation Measurement: Tracking the State of Innovation in the American Economy*, the Advisory Committee on Measuring Innovation in the 21st Century Economy, January 2008.

2. The Success of the Nordic Model

The Nordic countries have a long tradition for building strong innovation capacity. This is underlined by the fact that the Nordic countries have received, over the years, strong ratings in various international innovation benchmarks (including the European Innovation Scoreboard, Global Competitiveness Report and the OECD Science, Technology and Industry Scoreboard).

These impressive rankings can have been affected by the ability of Nordic governments to build solid micro-policy frameworks. Another key element has likely been Nordic values such as social security and economic equality, deeply rooted in Nordic culture and societies.

The welfare model in the Nordic countries is strongly-supported by the general public and is regarded as a key element in our everyday life and identity. The welfare model has a long history and has been shaped by years of evolution.

Given that the Anglo-Saxon model has been regarded as the most successful in terms of generating economic growth, the profitability of the Nordic model has been discussed intensely. The sceptics have feared that the Nordic welfare model (focusing on large government sector, social security and economic equality) would be a detriment to innovation and economic growth. However, developments over the past 10 to 15 years have pointed to the opposite. And the economic success of the Nordic countries has caused much surprise and interest.

Differences in economic wealth across countries and regions can often be explained by different economic social models that are set apart by a range of societal and economic parameters. This implies that differences in economic wealth can be explained by differences in policy approaches.

Three political areas help explain differences in economic social models[4]:

- **Macroeconomic stability:** the global economic crisis is a reminder of how important it is to have a stable economy that provides a strong economic platform for the long term. In some parts of the world, the economic fundamentals have been flawed. This has caused an economic crisis, which is impacting countries around the world.

- **Structural policies (well-functioning markets):** stable economic fundamentals do not yield economic growth in itself. Growth also necessitates the building of efficient, well-functioning and competitive labour markets, commodity markets and capital markets.

- **Innovation capacity:** innovation capacity is defined as a country's ability to create new and valuable innovative solutions. The ability to innovate will depend on the building of good micro-policy framework conditions and companies' use of these framework conditions to generate innovation.

4) See Appendix A for a model of political areas that will impact wealth.

Comparisons of wealth in OECD-regions show that over the past decade four groups of countries have seen GDP per capita growth over 2 percent.

Table 2.1: OECD Regions' Growth in Economic Wealth 1997-2007 – GDP Per Capita

Region	Increase in Economic Wealth 1997-2007 GDP Per Capita
Nordic Region	**2,6**
US, UK, Canada	**2,2**
Continental Europe	**1,8**
Ireland, Australia, New Zealand	3,2
Japan, Korea	2,4

Source: OECD Stat, Economic Outlook No 84 – December 2008, and own calculations, FORA, 2009.

Note:
a) The strong increase in economic wealth in the group covering Ireland, Australia and New Zealand can be explained by high Irish growth (5.0 %). When leaving Ireland out, the increase in economic wealth is 2.2 %.
b) The strong increase in economic wealth in the group covering Japan and Korea can be explained by high Korean growth (3.8 %).
c) The focus will be on the Nordic region, the English-speaking countries: US, UK and Canada, and the region covering the continental Europe.

One group covers the English-speaking countries: the US, the UK and Canada. They share a strong tradition for efficient and well-functioning markets. This applies to flexible labour markets, competitive commodity markets and efficient capital markets. The leading English-speaking countries have invested in building a strong innovation capacity, and they have been very successful in creating wealth through innovation.

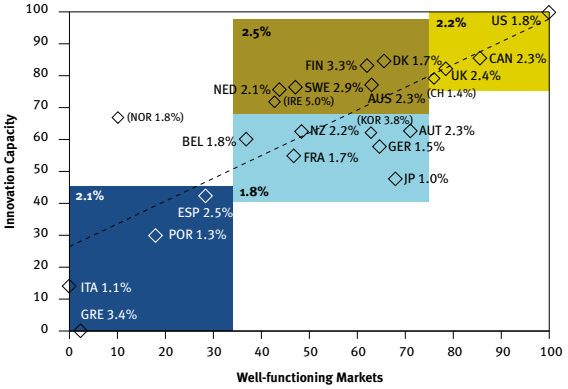
The Nordic countries constitute a region. The Nordic region has an entirely different societal model but has seen a higher average growth in wealth than the US, UK and Canada. The Nordic welfare model focuses on welfare services for everyone, a labour market that gives high priority to worker safety and worker rights, and stresses that regulation in the commodity market prioritises more than just efficient competition. This has drawn attention to the fact that the Nordic markets – from an economic point of view – are not as efficient and well-functioning as markets in the US, UK and Canada. However, more and more evidence suggests that the Nordic countries have invested in building a strong innovation capacity, which at least matches the English-speaking countries. The Nordic countries' innovation capacity has given the region a competitive edge, and has yielded about 30 percent growth in economic wealth over the past decade.

Countries in continental Europe have market structures that in many respects are comparable to the Nordic region. However, this group of countries has not been able to match the Nordic countries in terms of allocating sufficient resources to build a strong innovation capacity. This has most likely dampened the increase in economic wealth in continental Europe and has resulted in approximately 30 percent loss of wealth over the past decade when comparing to the English-speaking countries and the Nordic region.

Therefore, innovation capacity must be critically important to the annual average increase in economic wealth.

The correlation between well-functioning markets and innovation capacity is illustrated in Figure 2.1[5].

Figure 2.1: Well-functioning Markets and Innovation Capacity



Source: FORA, 2009.

Note:
a) Each colour illustrates a box covering countries with similarities in well-functioning markets and innovation capacity.
b) In each box the average GDP Per Capita for the countries belonging to this box is calculated and illustrated in each box.

The gap between the Nordic region and continental Europe in terms of average annual growth in economic wealth can be explained by differences in innovation capacity, emphasising the importance of innovation in securing future prosperity and wealth.

The proven impact of innovation capacity on economic wealth calls for policy initiatives if the Nordic region is to preserve its economic wealth.

The Nordic Innovation Monitor provides a tool to guide policymakers across the Nordic countries to identify the biggest challenges faced by the individual countries and address opportunities for improvement if they are to maintain a high innovation capacity.

5) Well-functioning markets and innovation capacity is two of the three political areas explaining differences in economic social models, mentioned above.

3. Nordic Innovation Monitor

The Nordic Innovation Monitor is an innovation model rating countries' innovation capacity against other countries across the OECD. There are a number of international indicator systems measuring country performance in the global competition[6]. They serve a range of purposes and therefore measure different factors.

The Nordic Innovation Monitor 2009 differs from other international indicator systems because of its core purpose: to identify initiatives that can improve framework conditions, thereby affecting overall innovation performance. By distinguishing between performance and framework conditions, it is possible to pinpoint the framework conditions and thereby the policy areas that are vital to country performance. On that basis, one can identify the critical framework conditions (i.e. areas that need to be addressed) for each country.

Moreover, the Nordic Innovation Monitor 2009 distinguishes itself from other indicator systems by applying a broader definition of innovation. Other indicator systems primarily define innovation through knowledge building and ICT, whereas the Nordic Innovation Monitor also emphasizes entrepreneurship and human resources as drivers of innovation.

The Nordic Innovation Monitor consists of two composite indices summarising performance and framework conditions for ICT, human resources, knowledge creation and entrepreneurship. The high correlation between the indices gives reason to believe that changes in framework conditions will potentially impact a country's performance[7].

There are no explicit rules on how many indicators can be used in a benchmark model. However, in general, the broader the purpose the more indicators that are needed to capture all aspects of whatever the indicator system is trying to measure. The Nordic Innovation Monitor 2009 is the most comprehensive in terms of measuring innovation. It encompasses 165 indicators; 30 are used to measure country performance, and 135 are used to describe framework conditions for innovation.

The composite indicator for performance covers 9 performance areas based on the 30 indicators measuring the four drivers of innovation. The composite indicator for framework conditions covers 42 policy areas based on the 135 indicators, covering the four drivers of innovation. The indicators are collected from valid sources including OECD, WEF, IMF, IMD, ILO and Eurostat.

The model compares country performance over a period of 5 years and has been updated annually since 2003 – allowing the tracking of national innovation performance over time.

The Nordic Innovation Monitor provides the first comprehensive model for comparing the innovation capacity of the Nordic region against other industrialised regions in the world. The collective innovation capacity of the Nordic region may constitute a competitive edge in the global knowledge society that can be taken advantage of. The cultural community and comparable social models found in the Nordic region have, over time, inspired the Nordic countries to learn from each other in order to create the optimal framework conditions for increased welfare.

6) The World Economic Forum: Global Competitiveness Report (WEF); IMD Business School, World Competitiveness Centre: World Competitiveness Yearbook (IMD); The World Bank: Knowledge Economy Index (KEI); The EU Commission: European Innovation Scoreboard (EIS); The Economist: Economist Intelligence Unit: Innovation – Global ranking of countries (EIU); FORA: Nordic Innovation Monitor (NIM).

7) See Appendix A for more information on the analytical design of the Nordic Innovation Monitor and Appendix C for a list of indicators.


Indiga
Nizhnyaya Pesha
POLUOSTROV KANIN
Nes
M Obornyy
Ponoy
M Svyatoy Nos
Gremikha
KOL'SKIY POLUOSTROV
MURMANSKAYA OBLAST
Severomorsk
MURMANSK
Kirovsk
Lovozero
Kandalaksha
Kovdor
Alakurtti
Kalevala
Utsjoki
Ivalo
Inari
Vuotso
Sodankylä
Kemijärvi
Rovaniemi
Kemi
Oulu
FINNLAND
Hammerfest
Alta
Kautokeino
Enontekiön
Kolari
Kiruna
Gällivare
Luleå
Boden
Piteå
Skellefteå
Vaasa
Bodø
Lofoten
Vestfjorden
Barents Sea
Gulf of Bothnia

The 25 OECD countries included in the monitor have been grouped in accordance to cultural and geographical considerations[8]:

- Leading English speaking countries: US, UK and Canada
- The Nordic region: Denmark, Finland, Iceland, Norway, Sweden
- Japan and Korea
- Other English speaking countries: Australia, Ireland, New Zealand
- Continental Europe: Austria, Belgium, France, Germany, Italy, Netherlands, Portugal, Spain, Switzerland

For each region, the total innovation capacity has been measured. This provides an indication as to which regions are best-equipped to cope with the current financial crisis[9].

This sort of benchmarking analysis highlights the Nordic region's strengths and areas of improvement – providing them with a common vision on where national governments could unite efforts to provide improved framework conditions for innovation for their citizens.

The Nordic Region's Overall Innovation Capacity

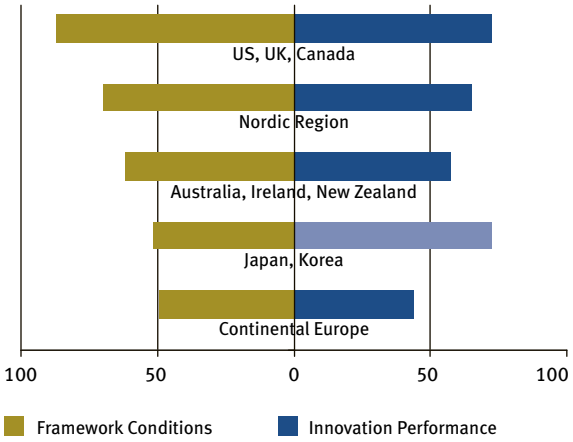
The Nordic region is strongly positioned in the area of innovation, and the region constitutes one of the world's leading innovative geographic areas[10].

Comparative analyses of the regions show that the US, UK and Canada form a group that constitutes the world's most innovative region. These countries are followed by the Nordic Region. The third most innovative region is the other English-speaking countries: Australia, New Zealand and Ireland (see Figure 3.1).

The Asian region comprising Japan and Korea has mediocre framework conditions but has extraordinary high performance on the innovation performance indicators. The high performance is caused by a very high performance on an indicator measuring the share of growth entrepreneurs for Korea and very high performance on an indicator measuring knowledge creation by Japan. Since the performance is in strong contrast to the modest framework conditions these two countries hold, it is not obvious what the Nordic region can learn from these countries[11].

Continental Europe lags the other regions when measuring the overall innovation capacity.

Figure 3.1: OECD Regions' Innovation Capacity



Source: FORA, 2009.

Note:
a) The extraordinary high performance by Korea and Japan is illustrated by a blurred index.
b) Framework conditions and innovation performance are constituted by composite indices made up of 165 indicators; see Appendix C for a detailed list of indicators and Appendix A for the correlation between framework conditions and innovation performance.
c) Framework conditions and innovation performance are weighted in relation to GDP and standardised on a scale from 1–100; see Appendix A for a detailed description of the standardisation.

The superiority of the leading English-speaking region has to do with the very high US performance (constituting around 97 % of the overall innovation capacity in this group). Good practice lessons from this region will be used as references in the following sections.

Innovation Capacity of Regions

Dividing the indices into separate drivers of innovation (human resources, knowledge creation, information and communication technology (ICT) and entrepreneurship) gives a deeper understanding of where new initiatives could improve Nordic innovation capacity.

The overall conclusion is that the Nordic region could reap most rewards by improving its performance on its ability to create growth entrepreneurs by addressing the framework conditions for entrepreneurship. However, general improvements of the performance on the other innovation drivers will secure a higher competence level among the Nordic population, and will create a professionalism that may become a unique competitive factor in the future.

8) Greece, Mexico and Turkey are not included in any of these groups. This has to with the fact that these three countries are in the bottom of the rankings on both performance and framework conditions. Furthermore, they are different from the other 22 OECD-countries in several of the indicators. The Nordic countries will not learn much from comparing themselves with these three OECD-countries.

9) Each country's ranking is weighted in accordance to how much value the country creates out of the region's total value creation, estimated on the basis of each of the countries' GDP.

10) Please note that the statistics used in the Nordic Innovation Monitor 2009 covers data up till 2008. The influence of the current economic crisis will not be directly reflected in the indicators.

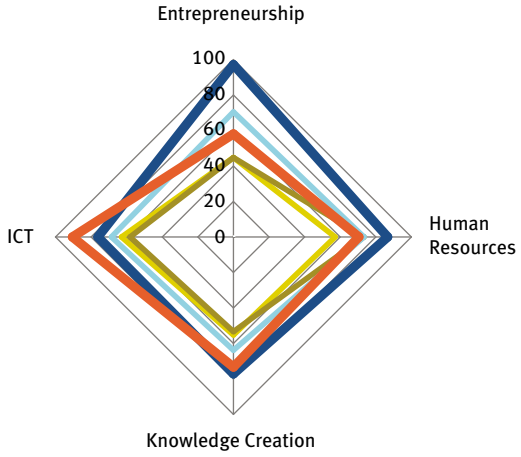
11) Korea and Japan are outliers when correlating innovation performance and framework conditions, indicating that if the Nordic Region should learn from best practice from these countries, more knowledge on the countries' societal and innovation systems should be acquired.

Figure 3.2: Regional Differences in Innovation Performance

Source: FORA, 2009.

Note:
a) The spider web illustrates the five regions' performance on 9 policy areas composing innovation performance.
b) See Appendix C for innovation performance indicators.
c) There are no available data on Start-ups in Japan and Korea. Thus, they do not figure on this indicator.
d) Australia, Ireland and New Zealand perform well on Start-ups. However, there are no data available on this indicator for Ireland and Australia. Thus, this indicator should be evaluated with care.

Figure 3.3: Regional Differences in Framework Conditions



Source: FORA, 2009.

Note:
a) The spider web illustrates the five regions' framework conditions on the four innovation drivers composing innovation framework conditions.
b) See Appendix C for framework conditions indicators.

Information and Communication Technology

The Nordic region is the world's top-performing region when it comes to ICT use in the business community, in the government sector and among the general public. The Nordic region has improved performance in this area over the latest five-year period, indicating that this has been a prioritised policy area for national governments (see Figure 3.4).

The ability to use technology in developing new products can provide regions with a competitive advantage vis-à-vis other regions, as ICT is used on a larger scale in providing people with new solutions.

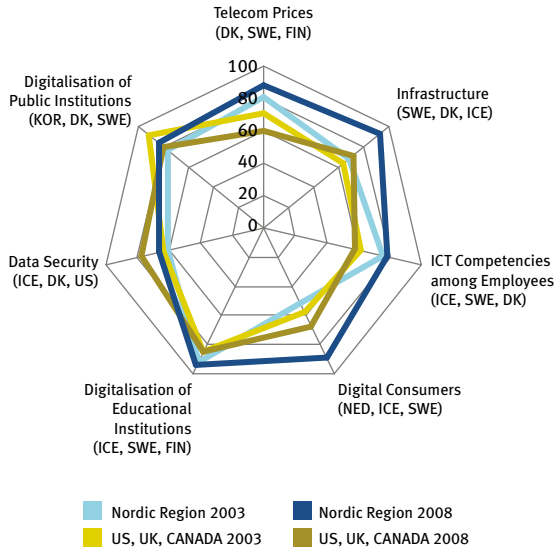
The Nordic region is unique in its ability to utilise the opportunities for innovation offered by ICT. The strong Nordic position in this area should be ascribed to high competence levels among citizens in terms of the use of ICT. The Nordic region especially performs well on citizens using the internet to interact with public authorities, internet banking and e-commerce. The performance on Corporate Digitalisation is also strong, with high levels on enterprises using e-learning applications. However, one should expect that other regions across the world will catch up in the area of ICT in the coming years. The US, the UK and Canada are already performing well in the area of Corporate Digitalisation (see Figure 3.2).

On framework conditions for ICT the Nordic Region outperforms the other OECD regions (see Figure 3.3). The Nordic countries are all in top 5. However, the leading English-speaking region is still relatively strong in this area.

Indicators show that Nordic citizens are among the world's most active users of the internet. Especially when it comes to the competence level on ICT among employees, the Nordic region outperforms the English-speaking countries. The Nordic Region also has the best digital consumers, especially due to a high level of households with internet access. Furthermore, the public sector in the Nordic region is very advanced when it comes to digitalisation of services compared to other regions, though the US is also in top 5 (see Figure 3.4).

A political assessment is necessary to determine if and how the Nordic region should continue making investments in framework conditions for ICT and increase the current competence level of ICT use in the population.

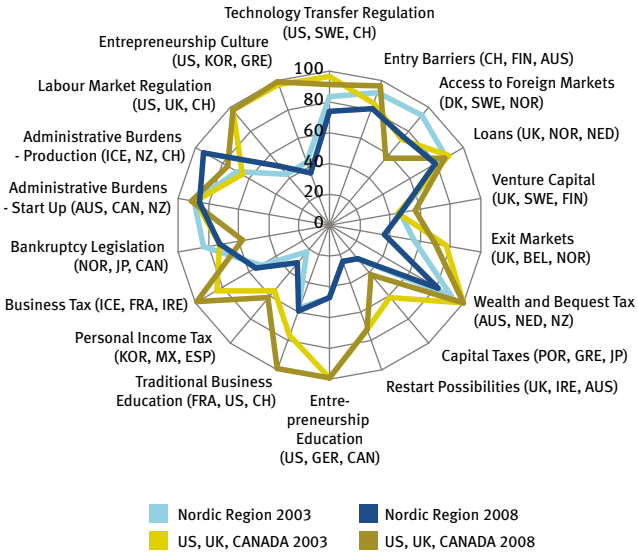
Figure 3.4: Framework Conditions on ICT



Source: FORA, 2009.

Note:
a) The spider web illustrates the Nordic region and the leading English-speaking countries development in framework conditions on 7 policy areas composing ICT framework conditions.
b) Top 3 consists of the top three performing countries on each of the 7 policy areas composing ICT framework conditions.
c) See Appendix C for ICT framework conditions indicators.

Figure 3.5: Framework Conditions on Entrepreneurship



Source: FORA, 2009.

Note:
a) The spider web illustrates the Nordic region and the leading English-speaking countries development in framework conditions on 18 policy areas composing entrepreneurship framework conditions.
b) Top 3 consists of the top three performing countries on each of the 18 policy areas composing entrepreneurship framework conditions.
c) See Appendix C for entrepreneurship framework conditions indicators.
d) The indicator measuring restart possibilities was constructed in 2005 and has not been updated since.

Entrepreneurship

The entrepreneurship area is – in contrast – the weakest policy area in the Nordic region. US, UK and Canada are miles ahead of the Nordic region both on entrepreneurship performance and framework conditions for entrepreneurship (see Figure 3.2 and Figure 3.3).

The presence of a strong entrepreneurial culture is particularly relevant in terms of getting the most out of knowledge and creativity built up in educational and knowledge institutions across society. Entrepreneurial behaviour creates new business opportunities and significantly improves existing products, services, organisations, etc. Compared to the other innovation drivers, entrepreneurship is the most important driver to a country's innovation capacity[12]. Hence, implementing a policy that will increase the impact of enterprising behaviour on growth rates could have high impact in overcoming the challenges of the economic crisis.

The difference on entrepreneurship performance between the Nordic region and the three leading English-speaking countries can be accredited to relatively low growth rates among Nordic entrepreneurs. On the other hand, all of the Nordic countries have high start-up rates, also when comparing to the US, the UK and Canada. Statistics indicate that the Nordic region does not have a problem with the number of companies, but with realising growth potential in new companies[13] (see Figure 3.2).

The poor results on entrepreneurship performance can, to some extent, be explained by poor framework conditions. The three leading English-speaking countries exhibit the best framework conditions for entrepreneurship, and the Nordic countries lag far behind (see Figure 3.5).

The US has the best framework conditions for entrepreneurship while the UK ranks 2nd and Canada 5th. The US superiority especially has to do with the country's strong environment for innovation, which generates high skills and willingness to take risks among the entrepreneurs themselves, but also the advisers available and the network they operate within.

However, there is a lack of knowledge on how a strong entrepreneurship culture is created. The question raised is how much of the enterprising behaviour is embedded in the societal structure, and how much can be influenced by policy decisions. The world's largest foundation dedicated to entrepreneurship, the Ewing Marion Kaufmann Foundation from the US, has made the case that it is possible to change the entrepreneurship culture via policy measures[14]. The area of bankruptcy legislation is highlighted as impor-

12) *Correlation between innovation drivers and changes in MFP-growth*, June 2004. See www.foranet.dk

13) Because of the missing data on start-ups in the Asian Region, though best-performing, Korea and Japan will not be included in the analysis of the entrepreneurship activity level.

tant in promoting a country's entrepreneurship culture. Other areas could be policy initiatives to enforce the enterprising behaviour of citizens through the educational system or the tax system.

The Nordic region performs well on indicators measuring the legislation on bankruptcy. The time and resources spent for closing down a business are limited. This is also the case in the English-speaking countries. On the other hand, it is still so that it is difficult for an entrepreneur to start another company if he or she has failed once. The general impression among all of the English-speaking countries is that a dynamic entrepreneurial culture should support the possibilities for restarting, seeing experience with business start-up as an additional qualification (see Figure 3.5).

When measuring entrepreneurship education, there is also evidence that the US, UK and Canada have much more emphasis on this policy area than the Nordic region does (see Figure 3.5).

When directly measuring entrepreneurial culture, it is quite obvious that the Nordic countries trail the leading English speaking countries (see Figure 3.5). Conclusions on this should be taken with caution, though. There are significant differences in the regions' social structures, which may explain differences in entrepreneurial culture. Differences in tax structures could for instance influence the entrepreneurial behaviour. The Nordic Region holds some of the highest taxes in both personal income taxes as well as business taxes, whereas the US and UK lies in top 10 on business tax while Canada is ranked 5th on personal income tax.

The challenge for the Nordic governments is to identify what could stimulate a specific Nordic entrepreneurial culture so that the innovative and creative potential of the Nordic people materialises into the commercialisation of innovative ideas. The enterprising behaviour of Nordic citizens is high. The question is how to get the most value out of this enterprising behaviour.

The Nordic countries could realise potential wealth if they joined forces and identified what specific aspects of the Nordic set of values should be enforced to create stronger Nordic enterprising behaviour and a higher willingness to take risk.

Human Resources

When it comes to the quality of a region's human resources, the Nordic region is roughly at a level with the US, the UK and Canada (see Figure 3.2).

The difference between regions is primarily explained by a high US score for the indicator measuring knowledge workers[15] i.e. the share of professionals in the workforce as well as business enterprise researchers. The Nordic region does not have such a high share of professionals in the workforce. Competition on high skilled knowledge could therefore be challenging for the Nordic region in the future (see Figure 3.2).

In terms of the organisation and management of employees' innovative skills, the leading English-speaking countries trail the Nordic region (see Figure 3.2). The Nordic countries generally perform very well on organisation and management with Denmark ranking 1st, Iceland 2nd and Sweden 4th. This should be accredited the Nordic workplaces which are characterised by low distances of power, which typically enforces employees' creativity and innovative skills.

Box 3.1: Leadership in the Nordic Region

Today, every company needs independently-thinking employees who push their ideas and talents and constantly strive to develop new and better products and processes. Employee-driven innovation is a Nordic competitive advantage, which can be further developed[16].

The Nordic countries are believed to be characterised by a management style that is highly process-oriented and where responsibilities are delegated. The Nordic approach to management motivates and involves knowledge workers – creating flat organisations – as opposed to hierarchic organisations. Several analyses show that the return on investments in "modern" organisations is almost three times higher compared to "traditional" organisations[17]. A multitude of American management experts advocate a management approach and a work environment similar to those found in many Nordic workplaces[18].

The Nordic management approach and collaborative culture are built on a set of Nordic values including equality, a limited distance to power, and work ethics[19]. While there is some variation among the Nordic countries, there is a strong notion that everyone is created equal, regardless of social status in the labour market. Among other things, this implies that an employee may approach management and share his or her ideas[20].

The Nordic countries could strengthen the Nordic social management model and collaborative culture by promoting research and development of the management model.

14) Schramm, Carl: *Building entrepreneurial economies*, Foreign affairs, July/August 2004.

15) Professionals cover physical, mathematical, engineering and teaching professionals etc.

16) *Innovation Danmark* 2008, Rådet for Teknologi og Innovation, Denmark 2008; *Medarbejderdreven innovation*, FTF og Rambøll Management, 2006; *Undersøgelse af medarbejderdreven innovation på private og offentlige arbejdspladser* – Casesamling, February 2006, LO; *Medarbejderdreven innovation på private og offentlige arbejdspladser* – Dokumentationsrapport, February 2006, LO.

17) PLS Rambøll Management, 2003.

18) *The Scandinavian Leader*, Mandag Morgen, 2004.

19) *Norden som global vinderregion*, Mandag Morgen, 2005.

20) Dobbin, Frank; Boychuk, Terry: *National employment systems and job autonomy: Why job autonomy is high in the Nordic countries and low in the United States*, 1999.

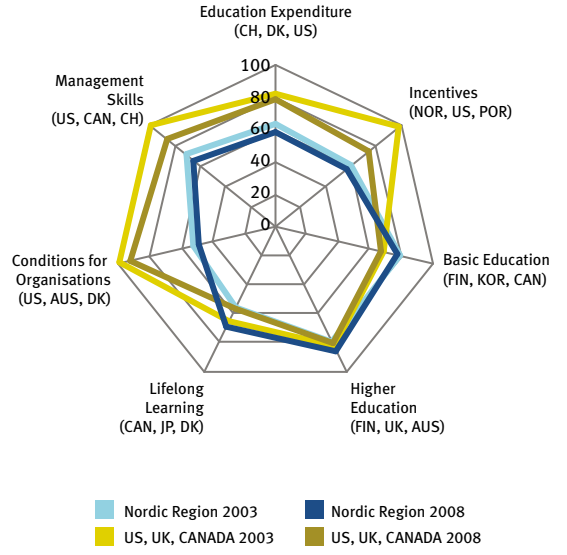
Measuring framework conditions on human resources, the English-speaking region is at the top. Canada and the US have the best framework conditions and are followed closely by Denmark and Sweden in the Nordic region (see Appendix B).

The Nordic countries and the English-speaking countries have, over time, had a substantial focus on talent development and education. However, data states that there is a wide difference in how the Nordic countries prioritise investments of their educational systems.

All of the leading countries, both among English-speaking and Nordic countries, perform well on basic and higher education. The US, UK and Canada are all in top 10 on magnitude and quality of higher education and the share of population with higher education is high in the Nordic countries as well as in the US (ranking 3rd) and Canada (ranking 1st) (see Figure 3.6).

However, the increased importance of highly-skilled knowledge workers in the global knowledge economy has not been represented in a similar improvement in framework conditions on education over the latest five-year period for the Nordic region. On basic and higher education, the framework conditions are the same. This is also the case for the group of leading English-speaking countries (see Figure 3.6).

Figure 3.6: Framework Conditions on Human Resources



Source: FORA, 2009.

Note:
a) The spider web illustrates the Nordic region and the leading English-speaking countries development in framework conditions on 7 policy areas composing human resources framework conditions.
b) Top 3 consists of the top three performing countries on each of the 7 policy areas composing human resources framework conditions.
c) See Appendix C for human resources framework conditions indicators.

Box 3.2: Talent Mobilisation in the Nordic Region

Compared to the rest of the world, the Nordic countries are frontrunners when it comes to mobilising the female talent mass. This allows the Nordic countries to tap ideas, creativity and competencies in a broader and more diversified section of the population, which will be a significant advantage in the innovation-driven economy.

The Nordic welfare services – free education, accessible day care, maternity leave schemes etc. have opened the labour market to women. The high labour participation rate among women has long contributed to Nordic wealth. However, the growing share of highly-educated women also represents a new competitive advantage in the innovation-driven economy evolving around knowledge, talent and ideas.

At the same time, it is a well-documented fact that a higher level of diversity will strengthen innovation processes and deliver better economic results[21]. An uneven distribution of men and women in the labour market will jeopardize a country's diversity. Sweden and Norway have taken the initiative to remove this barrier by passing a quota system that with time should ensure a higher share of women on company boards.

The Nordic countries may support their innovative power by ensuring that women are given even better opportunities to pursue a professional career. This could be achieved via improved maternity leave schemes and improved child care, helping to secure equal opportunities and curb gender discrimination.

Such stagnation could potentially be a challenge for the Nordic region. Data show that there has been a decrease in the share of pupils starting an education in the Nordic countries, or at least several other countries have passed the Nordic countries, indicating that the future focus should be on attracting and keeping young people in the educational systems.

It is far from enough that the educational system produces graduates and students that are capable of working with innovation. It is equally important that workplaces provide good framework conditions for employees. These framework conditions are difficult to measure, as much of it has to do with leadership and cultural values, and these areas cannot yet be measured (see chapter 9 for a description of this).

21) *Innovation og mangfoldighed*, Forsknings- og Innovationsstyrelsen, Denmark, 2008.

According to available data, some of the Nordic countries have room for improvement in the areas of management skills and conditions for organisations (see Figure 3.6). The high adaptability of the US workforce to new challenges explains most of the differences between regions. Except for Sweden and Iceland the Nordic countries are not in top 10 on the framework conditions for management skills. This stands in contrast to the high performance on the output indicator on management.

Box 3.3: Flexicurity in Denmark

A strong set of basic competencies and the continued development of skills is a precondition for innovation. As global competition heats up, and as the amount of knowledge and new products grow, so does the demand for companies to further develop existing products and re-organise production to meet the changing conditions. Companies that have access to a labour market with a competent workforce, which can be hired and fired in line with production, will gain a significant competitive advantage in the innovation economy.

Among the Nordic countries, the Danish labour market model is best suited for the demands of the innovation economy and is highlighted by the IMF, the OECD and the EU as a role model for the future labour marke[22]. The Danish model is built on negotiated solutions and a close collaboration between employers, employees and the government. A high level of employer flexibility is matched by a high level of economic security and competence-building on the side of the employees. The core principles for the model were founded in 1899 (The Great Agreement), where the employees recognised the employers' right to manage and divide labour. The model is heavily anchored on Nordic values like equality, trust and a limited distance to power, i.e. that the best solutions are reached when meeting at eye level and engaging in a constructive dialogue, where both parties' views are recognised in order to reach a consensus that is in the interest of both.

The Nordic countries may strengthen the labour market's institutional competitive power in the global innovation economy by drawing on inspiration from the Danish model.

There is reason to believe that increased knowledge on the Nordic social management model and collaborative culture could be beneficial for the Nordic region, in identifying institutional competitive advantages more strategically to develop a strong innovation capacity. As it is right now, the uniqueness of the Nordic management style cannot be captured by statistics.

Stagnation on human resources could eventually be a common Nordic challenge, and the Nordic region could benefit from exchanging experiences on how to create an attractive learning environment around educational institutions to maintain a competent and talented workforce.

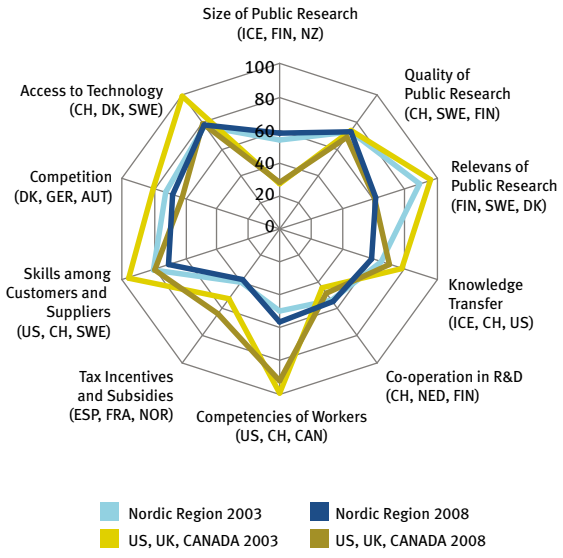
Knowledge Creation

In the area of knowledge creation, the Nordic Region and the leading English-speaking region are on equal levels, although the leading English-speaking countries have been declining in the area of knowledge sharing, whereas the Nordic region has improved performance on this indicator.

Generally speaking, both the Nordic region and the leading English-speaking countries have put great emphasis on providing optimal framework conditions for knowledge creation, and have made knowledge creation an important part of their innovation strategies.

The impact of knowledge creation on increased prosperity will, to some extent, depend on the enterprising behaviour of highly-skilled workers. Knowledge creation is, so to speak, the raw material of the global knowledge economy. The task

Figure 3.7: Framework Conditions on Knowledge Creation



Source: FORA, 2009.

Note:
a) The spider web illustrates the Nordic region and the leading English-speaking countries development in framework conditions on 10 policy areas composing knowledge creation framework conditions.
b) Top 3 consists of the top three performing countries on each of the 10 policy areas composing knowledge creation framework conditions.
c) See Appendix C for knowledge creation framework conditions indicators.

22) *Kommissionens meddelelse: På vej mod fælles principper for fleksibilitet og sikkerhed på arbejdspladsen: flere og bedre jobs ved at kombinere fleksibilitet og sikkerhed*, IMF Working Paper No. 07/36, OECD Employment Outlook, 2007.

23) See chapter 9.

of governments has traditionally been to make sure that "hot spots" of research activities are created and that there is a substantial spill-over effect of the excellence created within universities to commercial innovation environments.

This political rationale on knowledge creation will continue to be extremely important. However, in the area of knowledge creation new types of knowledge creation evolve, e.g. from knowledge sourced globally and open innovation and user involvement. Based on statistical data, we cannot tell how the Nordic countries perform in these areas, although there are reasons to believe that the Nordic region will have some comparative advantages in these areas. In the Nordic Innovation Monitor, these issues will be addressed when looking into new trends in innovation policy[23].

The good performance on knowledge creation is therefore only measuring the effect of more traditional knowledge creation: the amount of patents and trademarks taken (measuring knowledge building) and companies' level of technology absorption (measuring knowledge sharing). On these areas, the Nordic region performs close to the US, UK and Canada (see Figure 3.2).

The good performance on knowledge creation is also reflected in the framework conditions on knowledge creation, where the Nordic region and the leading English-speaking region are on par. Canada and the US are top performers in this area, while the UK trails (see Figure 3.7).

The Nordic region has been inspired by the US, Canada and the UK in how to construct good framework conditions. Investments in companies' access to technology, knowledge transfer systems and the quality and relevance of public research are made on a broad scale.

The Nordic region invests relatively more in public research than the US, UK and Canada, which may partly be explained by differences in the societal structure of these regions.

However, in terms of competencies of workers the Nordic region is far behind the leading English-speaking countries. This is mainly due to a low attractiveness of foreign knowledge workers to Nordic countries. Only Japan and Korea are less attractive to foreign knowledge workers than the Nordic region.

The Nordic region could benefit from collaborating on how to attract foreign knowledge workers and providing incentives for them to stay in the Nordic region.

Box 3.4: Customer Skills

Knowledge creation also includes users and customers. The Nordic countries are characterised by highly-educated and resourceful consumers. The Nordic countries also hold some of the world's best test markets because the Nordic consumer is quick to adapt to new products. This poses a huge advantage for innovative companies, which need access to test the validity of an idea which has been developed into a new product[24].

Companies with access to high quality test markets with critical and resourceful customers may gain a significant competitive advantage in an innovation-driven market. A long range of large, international corporations therefore use the Nordic countries as test markets.

The Nordic consumer is highly influenced by the Nordic values related to adaptability, sustainability and aesthetics. These values cover a sense of curiosity related to the new, value-oriented requirement for content, design and functionality. In line with a stronger focus on user-driven innovation the sophisticated Nordic consumer is becoming an increasingly-interesting competitive factor.

The Nordic countries can further develop the critical and competent consumer as a Nordic institutional competitive advantage by working purposefully to develop the Nordic region as a global test market and thus become a global "living lab" with a strong focus on user-driven innovation[25].

24) Gerard Tellis: *Analysis*, University of Southern California, 2005.

25) Søren Salomo: *The concept of Lead Markets*, Center for Technology, Economics & Management, DTU, 2008.

Conclusions on the Nordic Region's Innovation Capacity

The Nordic region shares overall challenges and strengths in creating an innovation capacity that will enforce future prosperity. Peer reviews will guide national policy-makers in how to strengthen the national innovation policies[26]. But if the Nordic countries collaborate to join forces overcoming some of the generic challenges of the Nordic region it could improve innovation capacity significantly – regionally and nationally.

The greatest challenge of all is how the Nordic region can get the full effect of enterprising behaviour of the Nordic citizens through growth-focused start-up companies. There could be a wealth potential for the Nordic countries to join forces, identifying what specific aspects of the Nordic set of values should be enforced to create a stronger Nordic enterprising behaviour and a willingness to take risks.

Despite a poor entrepreneurship environment the Nordic region shares a strong innovation capacity due to good framework conditions on ICT, human resources and knowledge creation, although improvements in each area will be necessary to hold a leading global position on innovation in the future.

The Nordic region is global leader in ICT. A political assessment will determine if and how the Nordic region should continue making investments in framework conditions for ICT, thereby increasing the current competence level of ICT use in the population.

On human resources, the Nordic region is performing well, although stagnating over the past five years. Such stagnation could potentially be a challenge for the Nordic region, as the region is very dependent on a highly-educated workforce as the backbone of the Nordic welfare model. Experiments are taken all over the Nordic region to attract and keep young people at educational institutions. Sharing knowledge on what kind of initiatives that works and what does not would be beneficial for all Nordic countries in securing the region's high competence level and attractiveness for global companies.

Knowledge creation is central – and important – for the innovation policies in the Nordic region, and so is it for the leading innovative countries in the world. If the Nordic region is to absorb the knowledge produced globally one way is to attract foreign knowledge workers to a higher degree. As it appears it is not attractive to come and live in the Nordic region for high skilled knowledge workers compared to other regions.

There is a separate analytical challenge of the Nordic region to create new indicators to measure innovation. The hypothesis is that the Nordic region holds some comparative advantages in grasping new tendencies in knowledge creation, e.g. involvement of users in the innovation process. It is not yet possible to capture these drivers on innovation due to statistical limitations. Data is also missing on other areas important for innovation, e.g. in identifying characteristics of the social management model and collaborative culture embedded in Nordic workplaces. As it is right now, the uniqueness of the Nordic management style cannot be captured by statistics. A joint Nordic effort could take over from a similar US initiative where politicians, researchers and business leaders came up with a proposal on new innovation statistics[27].

Ranking in the Nordic Innovation Monitor

The Nordic region can explore some of the above-mentioned challenges together. However, even though the Nordic region constitutes a relatively coherent cultural region in global terms, the Nordic countries have taken different approaches to innovation policy and will therefore perform differently when measuring the innovation capacity of each country.

Individual country rankings underscore the fact that the Nordic countries could benefit from more systematic exchange of experiences when building a world-class innovation capacity. Most of the Nordic countries share relatively high rankings in the overall index on framework conditions and innovation performance – making it evident that the Nordic countries can find best practice experience within the borders of the Nordic region.

Innovation Performance

Korea, the United States, Japan and Denmark were the world's most innovative countries in 2008. They are followed by a group comprised of 6 countries that trail the top-4 by some distance: Sweden, Iceland, Finland, Canada, the United Kingdom and the Netherlands. The lower group comprises 15 countries: Germany, Switzerland, Australia, New Zealand, Norway, Ireland, Belgium, Austria, Spain, France, Portugal, Turkey, Italy Greece and Mexico (see Table 3.1).

The US was also among the top-performing countries in 2003. The most significant progress in terms of performance is found in Denmark, Canada, Japan, Germany, Korea, Norway, Austria, Portugal and Turkey, whereas Sweden and Iceland only have improved their rankings by one. New Zealand, Australia, Finland, Ireland, Belgium, Italy and Greece have dropped substantially in their rankings. For the residual countries, there are limited changes in the overall performance index.

Overall, the Nordic countries are ranked relatively high – with Denmark and Sweden in the top-5. Iceland is ranked 6th, Finland 7th and Norway 15th.

The model's explanatory power is solid, as the countries with the best performance are, to some extent, also the countries with the best framework conditions for innovation. The Nordic Innovation Monitor report shows a high correlation between framework conditions and innovation performance[28].

26) See chapters 4-8.

27) *Innovation Measurement: Tracking the State of Innovation in the American Economy, the Advisory Committee on Measuring Innovation in the 21st Century Economy*, January 2008.

28) See Appendix A.

Framework Conditions on Innovation

Three countries in particular show significant improvements on the overall index for framework conditions: Denmark, Iceland and Switzerland. The Netherlands, Norway, Austria, Korea, Japan and Portugal have also improved their rankings (see Table 3.2).

The US and Iceland have the best framework conditions conducive to innovation in 2008. In 2003, the US also had the best framework conditions, closely followed by Finland which has lost significant ground by dropping three places in the overall ranking. Also the United Kingdom, Australia, Sweden, Ireland, New Zealand, Belgium, Spain and Italy have dropped in the rankings.

In the Nordic region, Iceland, Denmark, and Finland are ranked in the top five, whereas Sweden is ranked 9th and Norway 12th (see Table 3.2).

Table 3.1: The OECD Countries' Individual Ranking in the Nordic Innovation Monitor – Performance

Performance	Ranking 2008	Index 2008	Index 2003	Change in rank 2003-2008
Korea	1	73	63	3
United States	2	73	71	0
Japan	3	72	55	5
Denmark	4	71	52	8
Sweden	5	68	56	1
Iceland	6	66	56	1
Finland	7	66	66	-4
Canada	8	65	49	6
United Kingdom	9	64	55	0
Netherlands	10	63	53	0
Germany	11	60	44	5
Switzerland	12	60	53	-1
Australia	13	58	57	-8
New Zealand	14	57	73	-13
Norway	15	56	40	2
Ireland	16	55	50	-3
Belgium	17	52	45	-2
Austria	18	43	29	2
Spain	19	42	38	-1
France	20	41	35	-1
Portugal	21	36	14	2
Turkey	22	17	8	2
Italy	23	15	19	-2
Greece	24	11	14	-2
Mexico	25	8	7	0

Source: FORA, 2009.

Note:
a) The Nordic Innovation Monitor model ranks 25 OECD countries.
b) See Appendix A for the analytical design.
c) See Appendix B for individual rankings on each of the four innovation drivers.
d) See Appendix C for the list of indicators.

Table 3.2: The OECD Countries' Individual Ranking in the Nordic Innovation Monitor – Framework Conditions

Framework Conditions	Ranking 2008	Index 2008	Index 2003	Change in rank 2003-2008
United States	1	87	93	0
Iceland	2	79	68	4
Canada	3	77	77	0
Denmark	4	77	64	6
Finland	5	75	80	-3
Switzerland	6	75	63	4
United Kingdom	7	75	76	-2
Australia	8	70	69	-3
Sweden	9	69	66	-2
Netherlands	10	68	61	2
Ireland	11	67	64	-2
Norway	12	62	55	2
Austria	13	61	53	2
New Zealand	14	61	66	-6
Korea	15	60	53	1
Belgium	16	59	58	-3
Germany	17	58	50	0
France	18	55	47	0
Japan	19	51	38	1
Spain	20	44	45	-1
Portugal	21	35	27	1
Italy	22	26	30	-1
Greece	23	16	16	0
Turkey	24	11	5	0
Mexico	25	5	5	0

Source: FORA, 2009.

Note:
a) The Nordic Innovation Monitor model ranks 25 OECD countries.
b) See Appendix A for the analytical design.
c) See Appendix B for individual rankings on each of the four innovation drivers.
d) See Appendix C for the list of indicators.

Overall, the Nordic region performs well on both innovation performance and framework conditions. Denmark, Finland, Iceland and Sweden are among the top-10 most innovative countries in 2008 whereas Norway, though improving, is trailing the other Nordic countries by some distance.

On framework conditions, the picture is almost the same. Iceland, Denmark and Finland are the leading Nordic countries, while Sweden is still in the top-10. Again, Norway is trailing the other Nordic countries by some distance. However, due to improvements on three of the four innovation drivers (knowledge creation, ICT, entrepreneurship), Norway is catching up to the other Nordic countries.

The improvement and decline on the four innovation drivers (for both innovation performance and framework conditions) for each of the Nordic countries will be analyzed in-depth in the following peer reviews on each of the five countries in the Nordic region[29].

29) See appendix B for individual rankings on the four innovation drivers on both performance and framework conditions.

4. Denmark

The strong focus in recent years in developing the important drivers of innovation (human resources, knowledge building and knowledge sharing, ICT and entrepreneurship) has led to a significant improvement in the Danish innovation capacity. While Denmark is well-prepared for the challenges of globalisation, a number of issues remain to be addressed in order to maintain Denmark's unique position.

The Danish government introduced the Globalisation Strategy in 2006 and, with that, a number of initiatives in education, technology transfer and entrepreneurship. The focus of this strategy is on improving the efficiency of public spending on education and research and on increasing competition and internationalisation in the Danish economy as a whole.

The Danish government is expected to launch an Innovation Strategy in 2009.

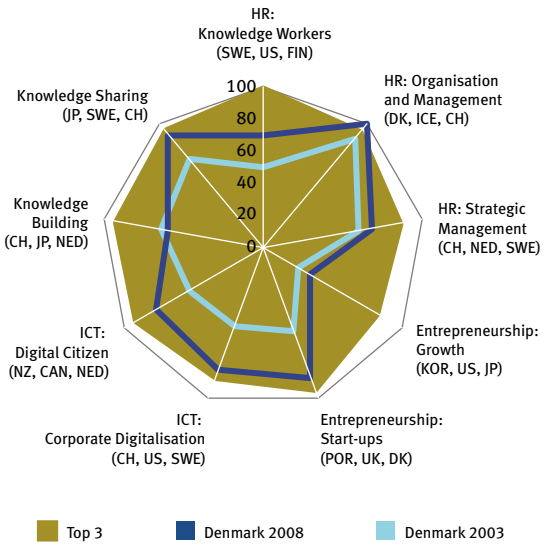
Performance

On overall innovation performance, Denmark is a top-performing country ranked 4th (see chapter 3). The country is particularly strong on organisation and management, on company start-ups, and on ICT usage among enterprises and citizens. The main challenges for Denmark are the lack of growth entrepreneurs and high-skilled knowledge workers in the working-age population.

Compared to other OECD countries, Denmark has made the most significant progress by improving 8 spots from 2003 to 2008. Denmark has witnessed significant progress in ICT performance and start-up activity, but concerns remain with regards to knowledge building due to a stagnant performance over the five-year period.

Denmark is ranked 4th in the overall human resource performance index. In one key area, Denmark has continuously been the top-performing country: organisation and management. The area is measured using three indicators with Denmark being a perennial top-performer in all three areas. For instance, Denmark is ranked 1st in employee motivation (see Figure 4.1).

Figure 4.1: Innovation Performance – Denmark



Source: FORA, 2009.

Note:
a) The spider web illustrates Denmark's performance on the 9 policy areas composing innovation performance.
b) Top 3 consists of the top three performing countries on each of the 9 policy areas composing innovation performance.
c) See Appendix C for innovation performance indicators.

Another aspect of performance on human resources is measuring the share of knowledge workers. In the knowledge workers index, Denmark is ranked 7th. This is due to a top-5 performance on the share of researchers in companies. However, Denmark has a weakness on the share of high-skilled knowledge workers in the working-age population, which is still too low compared to its peers. Thus, Denmark is only ranked 12th on the indicator measuring the share of professionals (i.e. physical, mathematical, engineering and teaching professionals etc.) in the working-age population (see Figure 4.1).

In the area of ICT, Denmark is – like the rest of the Nordic countries – among the best-performing countries. Denmark is ranked 4th in corporate digitalisation (i.e. companies' use of the internet), and is particularly strong in companies' product sales over the internet (where Denmark ranks 2nd) (see Figure 4.1).

Denmark also performs well in start-up activity on entrepreneurship performance, and is ranked 3rd behind Portugal and the UK. This was not the case 10 years ago. However, a strong and sustained political focus, and the introduction of a number of initiatives, have materialised into solid Danish start-up activity.

One of Denmark's biggest challenges is to create more growth entrepreneurs. Denmark is ranked 13th and is significantly lagging behind the best-performing countries: the US and Korea.

While the performance on knowledge sharing is among the best (4th), there is room for improvement with regards to knowledge building where Denmark is ranked 11th. For instance, Danish performance on registered trademarks per million inhabitants is mediocre (13th).

Framework Conditions

In the Danish Globalisation Strategy, it is stated that *"Denmark should be the world's most competitive society by 2015"*[30]. To meet such an ambitious goal, Denmark's innovation framework conditions should be among the world's best by 2010 (since it must be expected that improved framework conditions only materialise into better performance after a time lag of 3 to 5 years). The analysis of Denmark in the Nordic Innovation Monitor shows that the overall framework conditions have improved over the last five years, and Denmark is ranked 4th in 2008. This could indicate that Denmark will reach its goal of being among the world's most competitive societies by 2015.

30) *Progress, Innovation and Cohesion Strategy for Denmark in the Global Economy* – Summary, p. 8. The Danish Government, April 2006.

ICT

With respect to ICT framework conditions, Denmark is the best-performing country. Denmark has succeeded in creating strong conditions and is ranked within the top-5 in all areas constituting the index on ICT framework conditions (see Figure 4.2).

Human Resources

Denmark is ranked 3rd in the index for framework conditions for human resources (see Appendix B). The top performance is the result of top-rankings in conditions for organisations, lifelong learning and education expenditure.

In the area of conditions for organisations, Denmark performs well in flexibility of hiring and firing employees. Denmark is ranked 3rd overall in conditions for organisations which correlates well with Denmark's strong performance in the area of organisation and management. Denmark has made good progress in conditions for organisations since 2003 and has climbed five spots. This is explained by improvements in workforce flexibility and adaptability (position improved from 14th to 6th) (see Figure 4.3).

In lifelong learning, Denmark is particularly strong in participation in job-related training and the supply of specialised training. Overall, Denmark is ranked 3rd in lifelong learning. This area has a long history in Denmark – where individuals are encouraged to participate in lifelong learning, given that their employers provide such an opportunity. Denmark has climbed 9 spots from 2003 to 2008 (see Figure 4.3).

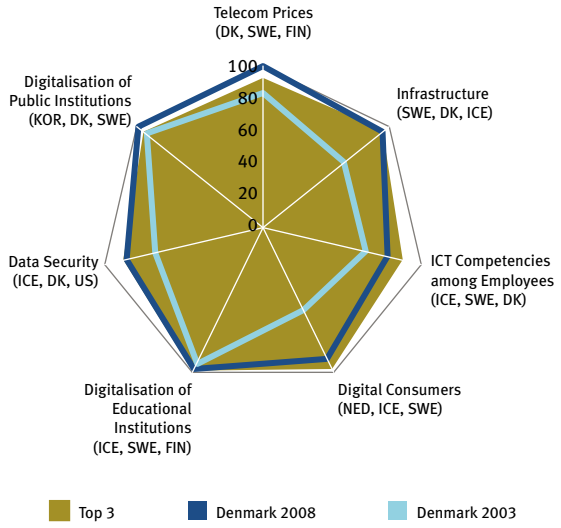
Denmark is ranked 9th in terms of the share of young people with a degree from higher education. The country will have to improve in this area if the solid performance on the share of the population with a degree from higher education (where Denmark currently ranks 6th) is to be maintained. One of the goals in the Danish Globalisation Strategy is that 50 percent of all young people will complete a higher education in 2015. Moreover, Denmark's performance on the share of PhDs is mediocre (ranked 16th). Nevertheless, Denmark has improved its position in higher education from 19th in 2003 to 13th in 2008, but further progress is needed if the country wants to be among the best (see Figure 4.3).

A concern is a high drop-out rate in the Danish secondary educational system. One in four pupils drops out of the educational system being among the highest rates in the EU[31]. A decisive factor for a high skilled workforce is that young people complete their education. The Danish government is conscious of the problem and has taken initiatives to meet this problem, e.g. strengthening of guidance to pupils, mentor arrangements and the introduction of special education courses allowing for high flexibility in the educational system.

A shortage of highly-educated people may force Danish companies to move innovation and research abroad. The challenge is to identify the reasons behind the lack of motivation to pursue higher education. Is it perhaps an issue related to a lack of economic incentives? Another option could be to attract foreign students to Denmark and provide them with various incentives to stay in the country following the conclusion of their education.

31) Ritzau's Bureau, January, 2009. www.ritzau.dk

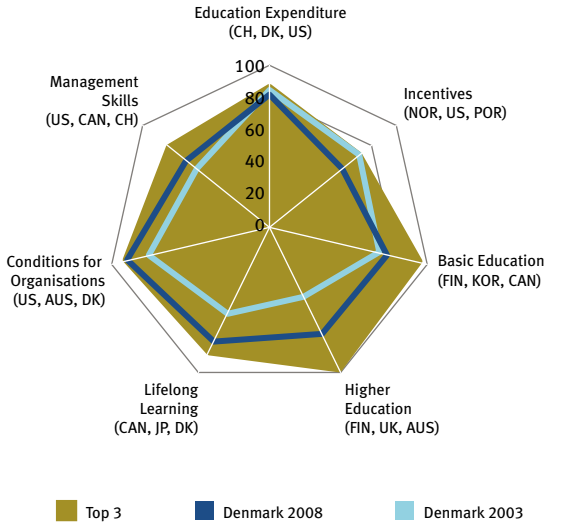
Figure 4.2: Innovation Framework ICT – Denmark



Source: FORA, 2009.

Note:
a) The spider web illustrates Denmark's framework conditions on the 7 policy areas composing ICT framework conditions.
b) Top 3 consists of the top three performing countries on each of the 7 policy areas composing ICT framework conditions.
c) See Appendix C for framework conditions indicators.

Figure 4.3: Innovation Framework Human Resources – Denmark



Source: FORA, 2009.

Note:
a) The spider web illustrates Denmark's framework conditions on the 7 policy areas composing human resources framework conditions.
b) Top 3 consists of the top three performing countries on each of the 7 policy areas composing human resources framework conditions.
c) See Appendix C for framework conditions indicators.

Entrepreneurship

In the area of entrepreneurship, Denmark has strong conditions for start-up activity. This correlates well with a strong performance in terms of start-up activity. Denmark is very well-positioned in the following areas: administrative conditions, bankruptcy legislation, low entry barriers and access to foreign markets.

Denmark has made significant progress in bankruptcy legislation. This is first and foremost the result of a considerable reduction in the time spent on closing a bankrupt business, and Denmark is now ranked 6th in the area. The Danish government changed the bankruptcy legislation in 2005, which made it easier to gain debt-restructuring, and, in 2007, made the processing of an insolvent estate more efficient. In terms of restarting possibilities (which covers access to aid and debt rescheduling for financially distressed companies), Denmark performs less well (13th). However, the results of the Danish governments' initiatives are not captured in the indicator measuring restarting possibilities (see Figure 4.4).

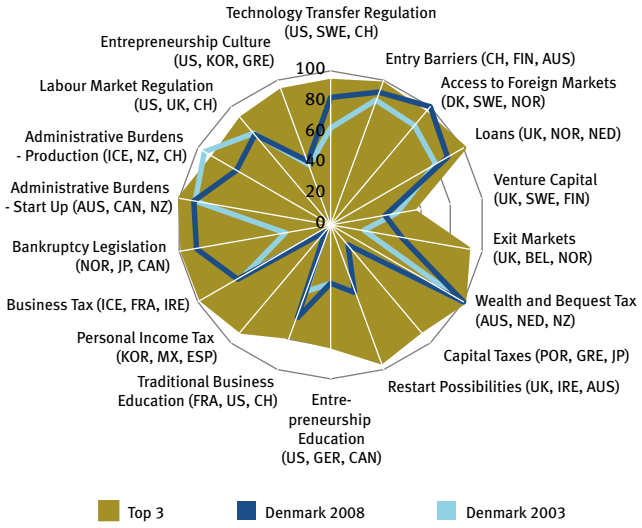
In early stage venture capital, Denmark is ranked 4th. There has been some political focus to make capital available for start-up companies, which in turn has yielded a stronger performance in the area. Overall, Denmark is ranked 7th in venture capital, which is the result of a modest showing in expansion stage capital (16th). There is far less expansion stage capital in Denmark, and the challenge is to motivate funds (i.e. pension funds) to make expansion stage investments in Danish companies. It must be expected that the current economic crisis will have an impact on venture capital availability, and in light of this the ranking of the countries must be interpreted with care (see Figure 4.4).

In terms of framework conditions conducive to a high share of growth entrepreneurs, Denmark lags behind in personal income tax (24th), corporate taxation (15th) and capital tax (23rd). Thus, Denmark trails far behind the best-performing countries in terms of providing favourable tax conditions. A common Nordic challenge is that the prevalent tax structure is not optimal for company start-ups or the creation of growth entrepreneurs (see Figure 4.4).

Moreover, Denmark is ranked low in entrepreneurship culture, i.e. image of entrepreneurs and the desire to become an entrepreneur. This can be tied to entrepreneurship education, where Denmark's performance is also mediocre (16th). Entrepreneurship education is relevant to the development of competent entrepreneurs and the creation of an entrepreneurial culture in Denmark. For instance, Denmark could benefit from the establishment of entrepreneurship centres at Danish universities, similar to the ones offered by renowned universities in the United States.

The greatest challenge for Denmark on entrepreneurship remains to be on how to improve the areas that have an impact on the ability to create growth entrepreneurs. The Danish government has a strong focus on high-growth entrepreneurs, but the positive outcome of policy initiatives has yet to materialise into a better performance on growth.

Figure 4.4: Innovation Framework Entrepreneurship – Denmark



Source: FORA, 2009.

Note:
a) The spider web illustrates Denmark's framework conditions on the 18 policy areas composing entrepreneurship framework conditions.
b) Top 3 consists of the top three performing countries on each of the 18 policy areas composing entrepreneurship framework conditions.
c) See Appendix C for framework conditions indicators.

Box: 4.1: The Accelerace Program

Accelerace is a fast action, internationally-focused business development program for potential high-growth entrepreneurs and start-ups looking to increase their commercialization success.

Accelerace is an initiative targeted to improve the frame work conditions for entrepreneurship in Denmark.

Accelerace is an elite program for the 20 best Danish companies (up to 30 employees) and entering companies will still have to compete for their spot as stage gates which will be administered throughout the program. Accelerace provides action-learning and concrete tools to entrepreneurs in order to gather insight into customers, market and competitors and helping them develop a concrete and realistic go-to-market strategy — enabling them to meet with investors, sign up partners or sell.

The Accelerace Program consists of five concrete elements:
1) Five 2-day thematic camps delivered by international experts focused on delivering frameworks and methodologies to help the companies think about their business
2) A CEO-in-residence who works with the company one day a week with focus on applying frameworks to the specific company
3) Access to international network of industry experts and technology experts that can provide insight in to markets, customers and competitors
4) Potential customer and investor meetings to give the company concrete understanding of customer needs and opportunities
5) Execution financing in order to build resources to execute on the plan developed in the program.

Source: www.accelerace.dk, 2009.

Knowledge Creation

In terms of framework conditions conducive to knowledge creation, Denmark lags behind in the knowledge building index compared to other countries (see Appendix B). Over the last couple of years, the Danish Government has undertaken several initiatives to improve framework conditions on knowledge creation based on experience from the US, e.g. establishing knowledge transfer centres. The future will show if this will prove efficient for Danish progress.

Some of the poor performance on framework conditions related to knowledge building can be ascribed to measures of how attractive the Danish companies are to high-skilled foreign knowledge workers, where Denmark is ranked as low as 21st. From 2003 to 2008, Denmark has climbed six spots in the area of competencies of workers, but not enough to claim a top spot (see Figure 4.5).

Denmark will also need to address R&D cooperation (given its current ranking in the lower half – 15th). This is explained by a poor showing in the business financing of public research (17th).

In order to improve framework conditions for knowledge building, Denmark could benefit from a strong political focus on the possibility of improving the attractiveness of the country to high-skilled foreign knowledge workers.

Box 4.2: Overall Conclusions on Denmark's Innovation Capacity

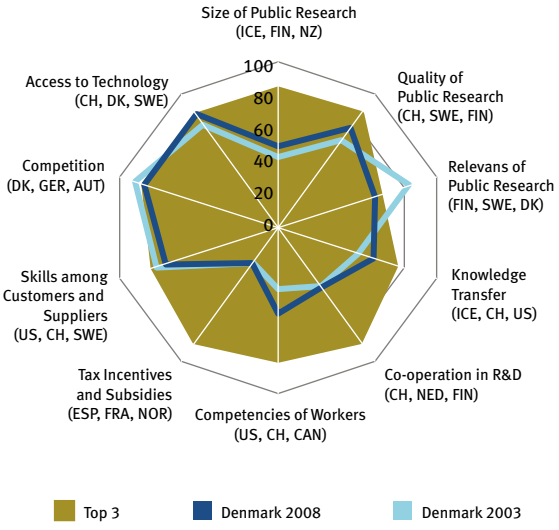
Denmark has made significant progress in innovation capacity during the latest five years. Improved framework conditions have materialised into solid innovation performance.

Denmark is challenged by the declining competence level of young people where high drop-out rates can be a potential problem for maintaining a high competence level of the Danish workforce.

Denmark holds a potential for improvement on innovation in securing a higher share of growth-oriented start-up companies.

The Danish Globalisation Strategy includes some initiatives to address new drivers of innovation, e.g. user-driven innovation. New initiatives may be taken in the forthcoming innovation strategy (see Box 9.3).

Figure 4.5: Innovation Framework Knowledge Creation – Denmark



Source: FORA, 2009.

Note:
a) The spider web illustrates Denmark's framework conditions on the 10 policy areas composing knowledge creation framework conditions.
b) Top 3 consists of the top three performing countries on each of the 10 policy areas composing knowledge creation framework conditions.
c) See Appendix C for framework conditions indicators.

5. Finland

Finland's strong ability to create innovation has been declining in recent years, and the development of Finland's innovation capacity has come to a halt. Therefore, the Finnish government is working on a number of initiatives which will help improve micro-policy framework conditions conducive to generating innovative solutions in the coming years.

Finland's national innovation strategy was launched in 2008. It is intended to strengthen Finland's innovation capacity and in turn secure a sustained and balanced development of the Finnish society and economy by focusing on the global challenges faced by Finland: an aging population, technological progress and the need for sustained progress in innovation. The strong focus on R&D in technology-intensive industries has been replaced by a broader, user-driven innovation policy focusing on the entire innovation process: education, research, science, technology and innovation.

The government will – in collaboration with organisations and companies – prepare a range of measurement tools that will help secure a successful implementation.

Performance

Finland is ranked 7th on overall innovation performance. The main strength is on the number of knowledge workers where Finland is top-performing. Furthermore, among the Nordic countries, Finland is the best performer on growth entrepreneurs although still lagging well behind the leading countries. Weaknesses include areas related to applying employees' creative and innovative potential, i.e. organisation and management related indicators, and companies' evaluation of the innovation activity level.

Finland's overall performance on the four innovation drivers has deteriorated in recent years. In 2003, Finland was ranked 3rd. This can be explained by the fact that Finland has failed to improve its innovation capacity, resulting in a significant drop in the overall performance ranking. In particular, Finland has experienced a worsening in human resources and knowledge building and knowledge sharing in the latest five-year period.

On human resources, Finland is still in the top-3 when measuring the share of knowledge workers (i.e. researchers in companies), and the share of professionals (i.e. physical, mathematical, engineering and teaching professionals etc.) in the working-age population. However, on the measures for organisation and management, Finland ranks 14th. Despite a high share of knowledge workers, Finland fails to apply the employees' creative and innovative potential. Therefore, Finland is facing a number of challenges related to a decline in the following areas: employee motivation, managers' ability to delegate decisions, and companies' ability to adapt to changes (see Figure 5.1).

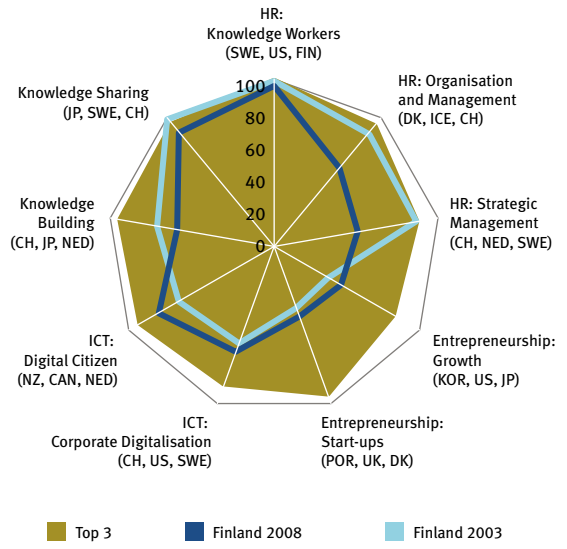
Among the Nordic countries, Finland has seen the highest share of high-growth entrepreneurs. However, compared to the top-performing countries (the US and Korea), Finland lags behind. Though in the top-10, Finland – along with Sweden – has the lowest share of start-ups in Scandinavia. However, the problem does not relate to the number of new companies, but rather Finland's ability to produce growth entrepreneurs (see Figure 5.1).

Finland is investing heavily in knowledge and is ranked among the leading OECD countries. However, when companies are asked to evaluate the innovation activity level under knowledge building, Finland is ranked 11th, which would indicate that Finland may not be harvesting the full potential of the investments made in new knowledge (see Figure 5.1).

In general, the Nordic region is very ICT capable. However, private Finnish companies lag behind other Nordic companies in terms of ICT corporate digitalisation (i.e. enterprises' use of the internet) (see Figure 5.1).

Finland's lack of progress in the four innovation drivers has had significant impact on the Finnish innovation strategy. The government is conscious about the problem and has launched several reforms which will respond to the identified challenges.

Figure 5.1: Innovation Performance – Finland



Source: FORA, 2009.

Note:
a) The spider web illustrates Finland's performance on the 9 policy areas composing innovation performance.
b) Top 3 consists of the top three performing countries on each of the 9 policy areas composing innovation performance.
c) See Appendix C for innovation performance indicators.

Framework Conditions

The Finnish innovation strategy has entered phase II and is to be implemented over the coming years. Among other things, this will carry with it a number of comprehensive reforms in education and entrepreneurship, which through the drafting of new micro-policy framework conditions will impact Finland's future innovation capacity.

The analysis of Finland in the Nordic Innovation Monitor shows that the overall framework conditions have declined over the last 5 years, and Finland is ranked 5th in 2008.

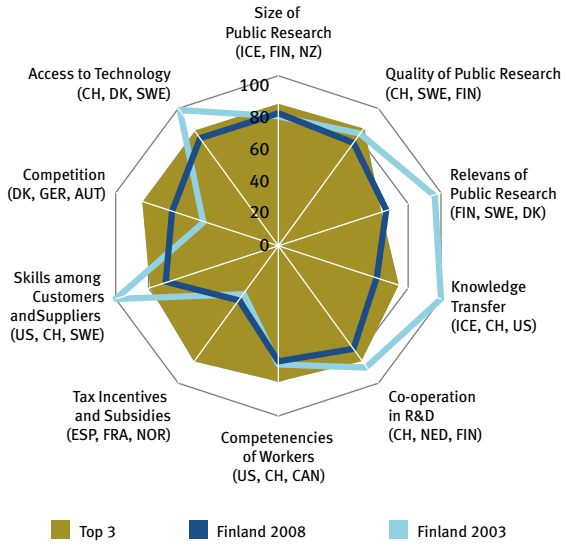
Knowledge Creation

Over the years, Finland has invested heavily in R&D and ranked 2nd in 2008. New knowledge investments have traditionally been technology-intensive. Finnish companies are somewhat reluctant when evaluating the actual outcome of the knowledge investments made. This reluctance can be explained by the need for investments in the "softer" knowledge areas, like social sciences.

Finnish businesses point to a lack of knowledge transfer between universities and companies. Though Finland ranks 3rd on the indicator measuring the cooperation between universities and businesses, Finland has to improve this cooperation even further to increase the knowledge transfer processes, to maintain a position in top-3 on this area (see Figure 5.2).

The lack of output from Finland's R&D investments will be addressed in the new university reform which is intended to improve knowledge transfer between universities and companies through stronger cooperation between the business community and the university (see Box 5.2).

Figure 5.2: Innovation Framework Knowledge Creation – Finland



Source: FORA, 2009.

Note:
a) The spider web illustrates Finland's framework conditions on the 10 policy areas composing knowledge creation framework conditions.
b) Top 3 consists of the top three performing countries on each of the 10 policy areas composing knowledge creation framework conditions.
c) See Appendix C for framework conditions indicators

ICT

Finland has good framework conditions on ICT, despite a decline from 1st in 2003 to 4th in 2008. ICT skills among the general public are solid, and the Finnish educational institutions are among the worlds most sophisticated in terms of digitalisation (see Figure 5.3).

Entrepreneurship

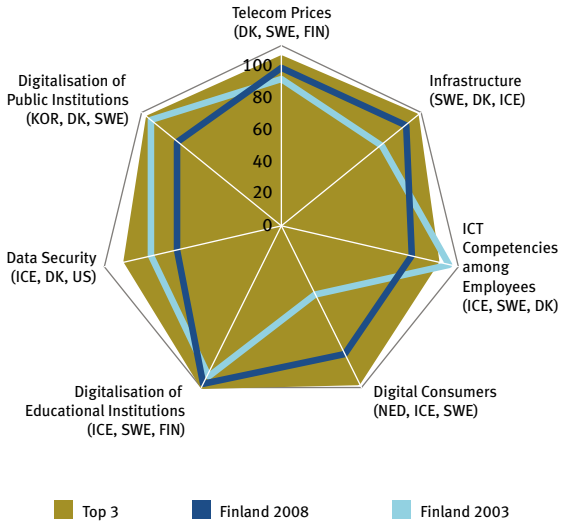
Finland has good framework conditions on entrepreneurship. However, when compared to the US, Finland is facing a number of challenges. This is particularly evident when it comes to generating growth entrepreneurs.

Finland is well-positioned when sizing the framework conditions related to administrative procedures (Finland is ranked 2nd in entry barriers, 4th on administrative burdens and 4th in bankruptcy legislation) (see Figure 5.4).

One of Finland's biggest challenges in the area of entrepreneurship is the nature of the entrepreneurship culture as is the case across the Nordic region. The US is ranked 1st on this indicator, which helps explain the dynamic entrepreneurship environment in US. Finland ranks 17th in entrepreneurship culture, and performance on some of the sub indicators in this area – such as image of entrepreneurs (15th) and entrepreneurship among management (13th) – is not encouraging for improved entrepreneurial behaviour.

The Finnish tax structure influences the entrepreneurial culture and is one of the key challenges faced by all Nordic countries. Finland has initiated an in-depth review of the country's tax system based on the tax conditions of growth entrepreneurs. The goal is to identify a number of

Figure 5.3: Innovation Framework ICT – Finland



Source: FORA, 2009.

Note:
a) The spider web illustrates Finland's framework conditions on the 7 policy areas composing ICT framework conditions.
b) Top 3 consists of the top three performing countries on each of the 7 policy areas composing ICT framework conditions.
c) See Appendix C for framework conditions indicators.

opportunities which will create economic incentives and hence strengthen risk tolerance and the number of growth entrepreneurs in Finland.

In continuation of this, Finland is trying to develop and strengthen the financing scheme for growth entrepreneurs by focusing on venture capital. Finland is ranked in the top-3 in terms of venture capital framework conditions, but strongly believes that they can improve further. The initiatives aim at boosting international venture capital attracted by finish companies by encouraging growth enterprises to expand their business internationally, and by making them more attractive to venture capitalists. A new investor-driven "Incubation System" focusing on rapid growth will increase the level of cooperation between national and international business managers.

The potential of growth entrepreneurs to expand beyond the national borders will be further supported by a range of initiatives for a new and improved service system which exclusively targets growth entrepreneurs.

Human Resources

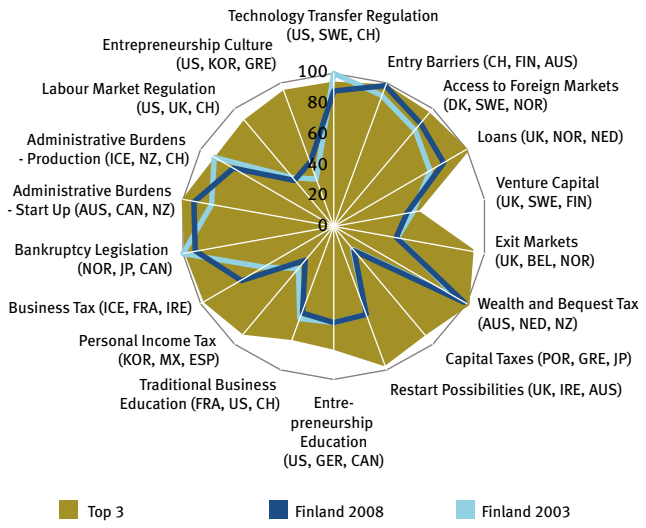
Traditionally, Finland has been ranked in the top-5 on framework conditions on human resources. However, the framework conditions for human resources have declined, and Finland ranked 9th in 2008 (see Appendix B).

Finland continues to be the world's top-ranked country in terms of the scope and quality of basic and higher education. This is remarkable given that Finland is only ranked 16th in education expenditure (see Figure 5.5).

Finland's very unique education system has produced a large number of knowledge workers. Unfortunately, the organisation and management of Finnish workers seems to be modest, with low rankings on the indicators on management skills and conditions for organisations. This would indicate that Finland has failed to exploit the full potential of the Finnish educational system.

Finland's excellent education framework conditions are not reflected in the area of lifelong learning, where Finland has come to a halt and is currently ranked 11th. A number of countries have improved significantly in terms of offering lifelong learning, while Finland has been constant (see Figure 5.5). If this trend continues, the government will be faced with a challenge.

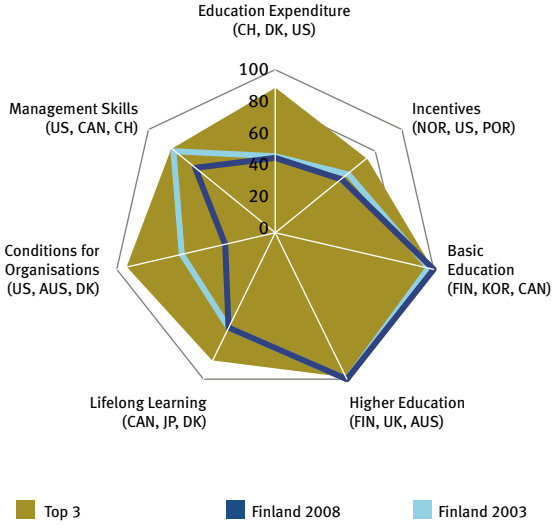
Figure 5.4: Innovation Framework Entrepreneurship – Finland



Source: FORA, 2009.

Note:
a) The spider web illustrates Finland's framework conditions on the 18 policy areas composing entrepreneurship framework conditions.
b) Top 3 consists of the top three performing countries on each of the 18 policy areas composing entrepreneurship framework conditions.
c) See Appendix C for framework conditions indicators.

Figure 5.5: Innovation Framework Human Resources – Finland



Source: FORA, 2009.

Note:
a) The spider web illustrates Finland's framework conditions on the 7 policy areas composing human resources framework conditions.
b) Top 3 consists of the top three performing countries on each of the 7 policy areas composing human resources framework conditions.
c) See Appendix C for framework conditions indicators.

Box 5.1: Overall Conclusions on Finland's Innovation Capacity

Finland's strong ability to innovate has come to a halt. Therefore, Finland could benefit from initiatives that improve the micro-policy framework for innovation, which in turn will re-establish a solid innovation capacity.

Human resources are an important prerequisite for innovation. Compared to other Nordic countries, Finland's education system is very strong. However Finland does not get the full potential of the talent base.

Finland could benefit from putting more effort into better-utilising R&D investments so that the Finnish business community can benefit from the knowledge generated by knowledge institutions.

There is a potential for improvement in innovation capacity in securing growth in newly-established companies.

The current university reform in Finland is designed to address some of the above mentioned challenges in the Finnish innovation system. The reform should make higher education more focused thereby utilising the full potential of the Finnish educational system. Furthermore it should increase the cooperation between the business community and universities and increase the number of growth entrepreneurs, which in turn could result in international expansion and hence contribute to job creation and economic prosperity in Finland.

Box 5.2: The Aalto University

Finland's investments in R&D have not generated the desired output. Hence the goal of the new university reform has been to improve the ability to transform knowledge into economic growth and to successfully respond to global challenges. This will be accomplished through closer cooperation between the business community and universities to make it more attractive for companies to invest in universities. Universities will be given a much more autonomous role in terms of economic independence.

The university reform marks the outcome of a bottom-up process, where the Finnish government has given the universities the opportunity to make changes and create success through an entrepreneurial spirit, instead of creating adversity to future change. All of this has materialised into a much lower number of universities.

The Aalto university marks the first actual outcome of the university reform. It is a new innovation university, which is based on three existing universities in Helsinki: the University of Technology, Helsinki School of Economics and the University of Art and Design. The core idea is to turn innovation away from being technology-driven to become user-driven.

The idea was first presented in September of 2003. However, the initiative dates back several years and is founded on the premise that company departments often fail to collaborate. Therefore, it was seen as a prudent idea to bring students from various disciplines together and strengthen their abilities in inter-disciplinary academic areas. The goal is to create an inter-cultural learning platform where students, researchers, entrepreneurs and business professional can meet at design factories and learn from each other.

This is a model that the Helsinki School of Economics has worked with for several years by putting together teams from the three Aalto universities. The project is based on "learning-by-doing" through close collaboration between the business community and the university. Students are provided with knowledge from each area and will thus possess an entirely different and broad knowledge profile. This will strengthen their ability to become entrepreneurs and will thus improve the quality of Finland's entrepreneurial education.

Source: Interview with Yrjö Sotamaa, Professor, Interior Architecture and Furniture, University of Art and Design Helsinki, Finland.

6. Iceland

Over the past decade, Iceland has seen the strongest growth in wealth in the Nordic Region. Iceland's economy has been transformed from a resource-based economy based on fishery and tourism into a knowledge-based economy focusing on the services sector. At the same time, the innovation debate has intensified, and innovation has become an important issue on the political agenda. This has resulted in a restructuring of Iceland's entire innovation system. In 2003, the new Science and Technology Policy Council (STPC) was introduced as part of the effort to make the Icelandic innovation system more effective.

Iceland's ability to create innovation has been on the rise in recent years. The further development of the country's innovation capacity has been a key focus area. Innovation initiatives over the past decade have improved the micro-policy framework for innovation. This has materialised into better innovation performance.

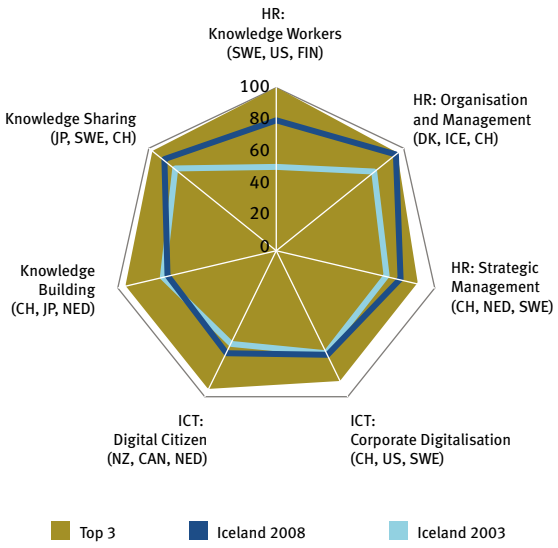
At the moment, Iceland is witnessing a financial downturn because of the global economic crisis. The current challenges Iceland faces will not be reflected in the statistics included in the Nordic Innovation Monitor. It is obvious that some of the data will be influenced by the global economic crisis, as it will for other countries. The stabilisation of macro policies is the most important issue in Iceland at the moment. However, innovation capacity remains important for growth. Therefore, innovation is an important part of the political agenda, as innovation will significantly impact future wealth in Iceland.

Performance

Iceland's overall innovation performance was a rank of 6th in 2008. The country is performing really well in the area of human resources both in terms of number of knowledge workers and in organisation and management (see Figure 6.1). Furthermore, performance on knowledge creation and ICT is solid, although there is room for improvement.

In 2003, Iceland was ranked 7th in the overall performance index. Significant progress has been made in all of the human resource areas over the five-year period. On the other hand, a stagnant performance on ICT has led to a lower ranking in 2008 compared to 2003.

Figure 6.1: Innovation Performance – Iceland



Source: FORA, 2009.

Note:
a) The spider web illustrates Iceland's performance on the 7 policy areas composing innovation performance.
b) Top 3 consists of the top three performing countries on each of the 7 policy areas composing innovation performance.
c) See Appendix C for innovation performance indicators.
d) Please note that there are no data available on Iceland's entrepreneurship performance.

When measuring the share of knowledge workers of the workforce, Iceland is a top-performing country[32] (ranked 4th) and on indicators measuring the companies' use of their employees' creative and innovative skills (organisation and management), Iceland ranks 2nd. This has to do with a high level of worker motivation and the Icelandic companies' ability to adapt to new market changes. Furthermore, Icelandic managers have a lot more international experience compared to other Nordic countries (see Figure 6.1).

Iceland ranks 5th in the area of knowledge creation. However, Icelandic companies are rather hesitant in their evaluation of the innovation activity level in Icelandic companies, where the country is ranked 16th (see Figure 6.1).

Even though Iceland has improved its ICT performance, Iceland ranks lower than the other Nordic countries on the innovation driver measuring ICT use among citizens and enterprises. All countries perform well in the area of ICT, and are closely stacked in the standardised index – resulting in significant and common fluctuations in terms of overall ranking if some of the countries experience small changes in framework conditions on ICT. Hence Iceland being ranked 9th in 2008 (and 5th in 2003) is not bad, but average.

No internationally comparable data is available to measure Iceland's activity level in entrepreneurship. Therefore, Iceland's overall performance on the four innovation drivers is determined by the performance in the three other innovation drivers and the average Nordic performance in entrepreneurship, as the latter is comparable across the Nordic countries.

Framework Conditions

In 2006, the STPC presented a range of strategic priorities to improve the micro-policy framework for innovation. The goal was to make Iceland an international pacesetter in innovation through coordinated initiatives focusing on both the public and the private sector and collaboration between the two.

In 2008, Iceland ranked 2nd on framework conditions and thus has some of the best framework conditions in OECD.

32) Growth in the financial sector has been tremendous in recent years. The banking sector has soaked up a lot of knowledge, and wages in the financial sector have been much higher compared to other parts of the Icelandic economy. Therefore, a large share of Iceland's knowledge workers has been employed in the banking sector. Due to the current financial crisis and several bankruptcies among large Icelandic banks, knowledge worker unemployment has exploded. In 2009, unemployment had reached 13 000 – the largest number ever. http://www.vinnumalastofnun.is/english

ICT

As is the case in the other Nordic countries, Iceland has good framework conditions in the area of ICT. In 2003 Iceland ranked 4th but has since climbed the ranking, and is now 2nd on ICT.

Iceland is ranked in the top-3 in five of the seven indicators measuring ICT framework conditions. Despite great distances and deserted areas, Iceland has some of the best digital infrastructure in the world, and the educational institutions are among the most digitalised in the world (see Figure 6.2).

On the other hand, the digitalisation of public institutions lags behind the rest of the Nordic region (ranked 16th). The Icelandic business community offers a rather negative view of how ICT is prioritised by the Icelandic government. However, data is from 2005, and the assessment may have changed since then. Furthermore, in response to the current economic crisis, the Icelandic job centre has set up a digital portal for job applicants so that job seekers do not have to show up in person.

One of Iceland's key challenges in the area of ICT is the lagging performance given the strength of the framework conditions. It could be the case that the implemented measures have yet to materialise into stronger ICT use. However, it could also be linked to the above-mentioned fluctuations in performance as most countries perform relatively well in ICT.

Entrepreneurship

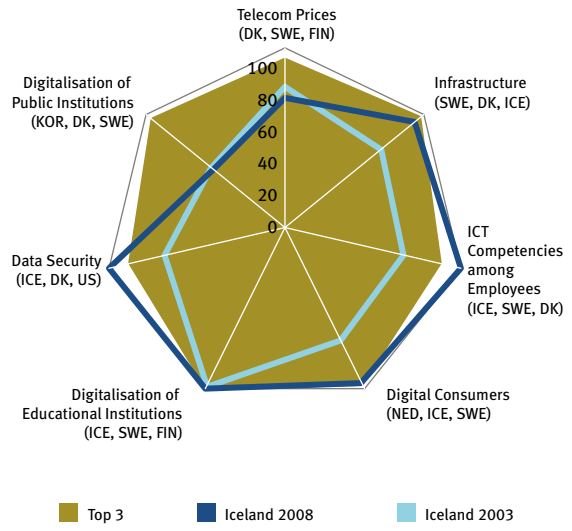
Iceland is ranked in the top-5 when measuring the framework conditions for entrepreneurship. This marks an improvement from 2003 when Iceland was ranked 7th.

On framework conditions conducive to entrepreneurship culture, Iceland ranks 9th and is the top-performing Nordic country. However, compared to the Unites States, which has the world's strongest entrepreneurial culture, there is still a considerable way to go for Iceland (see Figure 6.3).

Compared to other Nordic countries, the prevalent tax structure in Iceland is much more favourable towards entrepreneurs. Iceland is ranked 4th in terms of access barriers and the administrative procedures for entrepreneurs are also quite lenient. The time spent on starting a business is limited (see Figure 6.3).

While Iceland has improved its ranking in most of the indicators measuring the framework conditions for entrepreneurship, there is one indicator where Iceland has lost considerable ground: venture capital. In 2003, Iceland ranked 1st in venture capital. In 2008, Iceland had dropped to 16th, trailing the rest of the Nordic region extensively (see Figure 6.3). The setback is the result of several things. First of all, the venture capital market was hit hard by the burst of the IT bubb le which had a negative impact on the amount of capital in the market. Investment funds became much more conservative in terms of their investment portfolio. Secondly, the venture

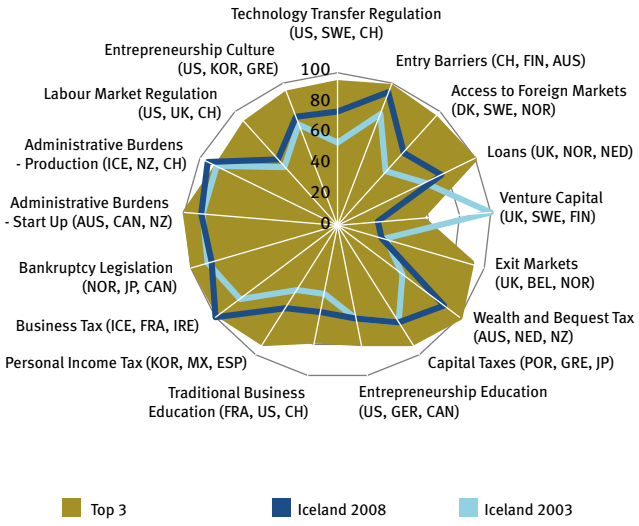
Figure 6.2: Innovation Framework ICT – Iceland



Source: FORA, 2009.

Note:
a) The spider web illustrates Iceland's framework conditions on the 7 policy areas composing ICT framework conditions.
b) Top 3 consists of the top three performing countries on each of the 7 policy areas composing ICT framework conditions.
c) See Appendix C for framework conditions indicators.

Figure 6.3: Innovation Framework Entrepreneurship – Iceland



Source: FORA, 2009.

Note:
a) The spider web illustrates Iceland's framework conditions on the 18 policy areas composing entrepreneurship framework conditions.
b) Top 3 consists of the top three performing countries on each of the 18 policy areas composing entrepreneurship framework conditions.
c) See Appendix C for framework conditions indicators.

capital market was hit hard again in 2008 in response to the current financial crisis.

An initiative called "Seed Forum Iceland" is aimed at helping new companies and, in particular, growth enterprises with funding through building ties with potential investors to help "plant a seed"[33].

Furthermore, the Icelandic innovation centre has developed an incubator centre. IMPRA supports and assists start-up companies, offering innovative business ideas and business plans to "push" innovation into companies. The project has been expanded to strengthen entrepreneurship at the regional level. Across Iceland, the entrepreneurship focus is targeting the unique regional strengths of the individual regions. This allows for a local adjustment of the entrepreneurship strategy.

Knowledge Creation

Iceland has made significant improvements in the innovation driver applied for sizing the ability to generate new knowledge. Iceland was ranked 13th in 2003, but has since then climbed to 5th in 2008.

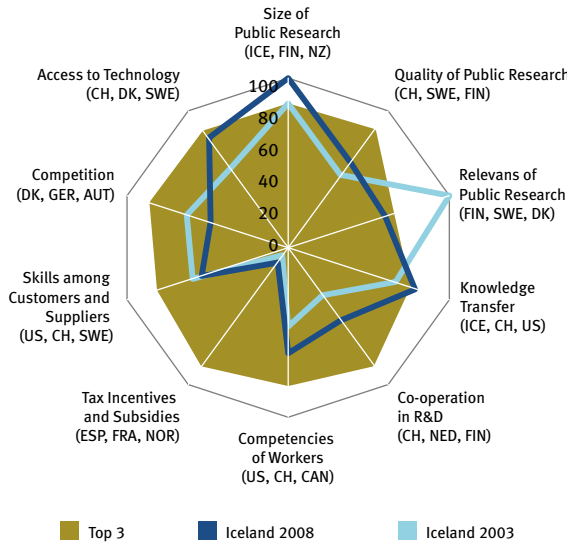
For some years, Iceland has been the world leader in R&D investments in percentage of GDP. Furthermore, Iceland's business executives offer a very positive assessment of the knowledge transfer between universities and companies and ranks 1st in this area. On the other hand, the assessment of the relevance of research has declined (see Figure 6.4).

The STPC is strengthening collaboration and knowledge transfer between educational institutions and the business community to make research more relevant. Among other things, this has been accomplished through a number of "Science Parks", where regional universities collaborate with regional companies. One such example is fish breeding, where the university is working together with fishing companies to create the best possible framework for fish breeding. It is, however, RANNIS' assessment that there is still much room for improvement in terms of the level of collaboration between knowledge institutions and the business community.

When sizing the indicator measuring R&D subsidies, Iceland is only ranked 24th. However, the STPC is now focused on targeting the public system towards supporting companies, and SME's in particular, in their R&D efforts. While Iceland has maintained a strong focus on technology-intensive R&D investments, there is a trend towards investing in softer values such as social sciences.

33) http://www.seedforum.is/seedforumprocess/

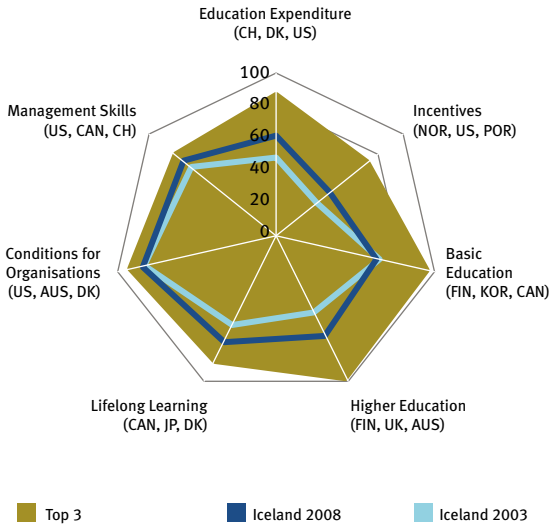
Figure 6.4: Innovation Framework Knowledge Creation – Iceland



Source: FORA, 2009.

Note:
a) The spider web illustrates Iceland's framework conditions on the 10 policy areas composing knowledge creation framework conditions.
b) Top 3 consists of the top three performing countries on each of the 10 policy areas composing knowledge creation framework conditions.
c) See Appendix C for framework conditions indicators.

Figure 6.5: Innovation Framework Human Resources – Iceland



Source: FORA, 2009.

Note:
a) The spider web illustrates Iceland's framework conditions on the 7 policy areas composing human resources framework conditions.
b) Top 3 consists of the top three performing countries on each of the 7 policy areas composing human resources framework conditions.
c) See Appendix C for framework conditions indicators.

Human Resources

In terms of the framework conditions for human resources, Iceland has improved its performance. However, Iceland is currently facing a number of challenges in this area.

Iceland is investing heavily in the area of education, as is the rest of the Nordic Region. However, due to the current economic crisis, investments across Icelandic universities have been cut by 3 %. This will have a significant impact on the future of Iceland's universities. Since the number of university applicants had grown by 10% from 2007 to 2008, this cut will result in a decline in education expenditure per student across higher education.

Iceland lags behind in the area of education. In terms of the scope and quality of basic and higher education, Iceland trails the other Nordic countries. Iceland is ranked 19th in scope and quality of basic education and 17th in scope and quality of higher education. The latter is explained by low completion rates in Iceland; only a limited share of the Icelandic population has a higher education degree. This signals that Iceland may not be harvesting the full potential of the resources invested in the area of education (see Figure 6.5).

In the strategy paper from 2006, the STPC takes initiatives towards better education. Unfortunately, this has yet to pay off in terms of higher quality in education. However, quality can be measured in a myriad of ways, and compared to Norway and Denmark, Iceland is not that far behind.

Iceland has made considerable progress in the area of lifelong learning and is now ranked 4th. In general, Iceland performs well on human resources and has made significant progress. However, Iceland should maintain a strong focus on the quality of higher education as reductions in education expenditure may negatively impact Iceland's performance in the longer term.

Box 6.1: Overall Conclusions on Iceland's Innovation Capacity

ICT – and ICT use – is an important prerequisite for innovation. Among all Nordic countries, Iceland has the second-best framework conditions for ICT.

Iceland could benefit from focusing on the quality of the education system and work strategically to make the funding materialise in a high excellence education system.

Iceland could benefit from focusing on re-establishing the venture capital market and other areas supporting an increased number of high-growth entrepreneurs.

Iceland went through a structural reform in terms of the overall management of innovation in 2003, when the new STPC was founded. The Council has provided a new platform for innovation policy, which has grown in stature on the political agenda. The systematic policy planning of innovation has taken the front seat. However, much remains to be done in terms of implementation.

Today, more than ever, there is a need to support innovation as a driver of economic prosperity. Perhaps a stronger focus on the implementation of innovative solutions will help guide Iceland during the global economic crisis.

7. Norway

Norway can be regarded as an economy that relies more heavily on the production and sales of raw materials compared to other highly-developed countries. Therefore, it can be argued that Norway has been less dependent on a strong innovation capacity, or – rather – that Norwegian industry has developed innovative capabilities that are well suited to the needs of this kind of companies. Whether this will hold true in the future remains a crucial question.

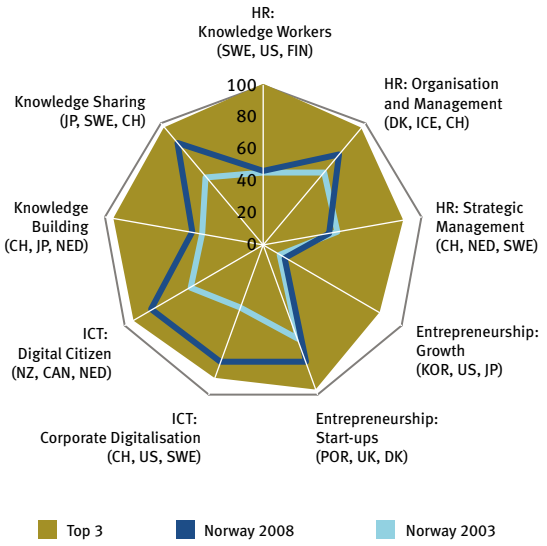
In December 2008, the Norwegian Government published the White Paper *An Innovative and Sustainable Norway*[34]. The paper deals with important areas for innovation. The focus is on establishing favourable conditions for increased innovation in Norway. The initiatives in the White Paper shall provide long-term sustainable wealth creation.

Performance

On overall innovation performance, Norway is ranked 15th. Main strengths lie in the areas of ICT, organisation and management, and start-ups of companies (see Figure 7.1)[35]. However, Norway is weak on growth entrepreneurs, and there is also room for improvement in knowledge building.

Norway belongs to a group of countries which have improved their overall performance over the past 5 years (ranking 17th in 2003). However, Norway still lags behind the other Nordic countries. In the five-year period, Norway has progressed significantly on the drivers ICT and knowledge building and knowledge sharing, yet still lags far behind the best concerning the latter.

Figure 7.1: Innovation Performance – Norway



Source: FORA, 2009.

Note:
a) The spider web illustrates Norway's performance on the 9 policy areas composing innovation performance.
b) Top 3 consists of the top three performing countries on each of the 9 policy areas composing innovation performance.
c) See Appendix C for innovation performance indicators.

34) Norwegian Ministry of Trade and Industry, 2008.

35) Norway also obtains a high standardised score on knowledge sharing, but so do other countries – leaving Norway trailing at 10th spot.

Norway is the top-performing Nordic country in the area of ICT (see Figure 7.1). Norwegian businesses are ranked in the top-3 in terms of the level of business sales via the internet and business executives' assessment of the extent to which ICT meets the business community's requirements. Similarly, Norwegian citizens are very sophisticated ICT users and perform well in home banking and E-commerce.

On human resources, Norway also performs well when it comes to organisation and management and was ranked 6th in 2008 (see Figure 7.1). Managers are particularly strong in delegating decisions (4th). Norway was ranked 14 in 2003, and has thus climbed 8 spots since then. This finding may point in the same directions as recent studies of "the Nordic Model", that argue that Nordic firms and organisations have "autonomous employees" who are good at learning and networking.

Norway is ranked low in the share of professional knowledge workers. This can be explained by an economy which is heavily dependent on raw materials. Thus, Norway has a high share of people – one in four – employed as technical staff and associate professionals (in the oil industry, among other things). These categories are not included in the Monitors' assessment of knowledge worker performance (see Figure 7.1).

On entrepreneurship, Norway performs well on start-ups (5th). As is the case in the other Nordic countries, Norway's performance is weaker in the area of growth entrepreneurs. Here, Norway is ranked 19th (see Figure 7.1).

In terms of knowledge creation, Norway ranks 15th on knowledge building and 10th in knowledge sharing (see Figure 7.1). In the area of knowledge building, Norway is ranked 12th when measuring business executives' assessment of the innovation capacity, which is lagging Sweden (4th), Finland (5th) and Denmark (7th). There is a strong potential for an improvement in the ranking in this area when sizing government investments in R&D per capita which is high for Norway. The assessment of the innovation capacity could indicate that Norway is not realising the full benefits of the invested funds (see Figure 7.1).

36) *An Innovative and Sustainable Norway*, Norwegian Ministry of Trade and Industry, 2008.

Framework Conditions

Norwegian initiatives in the coming years focus on creating better conditions for SME's, strengthening of the education system and increased research investments in the public sector[36]. Among other things, strategy councils for SME's and environmental technology are to be established.

The above-mentioned initiatives seem to be well placed in terms of improving innovation conditions. On the overall framework conditions, Norway is only ranked 12th. This is still an improvement compared to 2003 (14th). The future will show if these initiatives are ambitious enough.

ICT

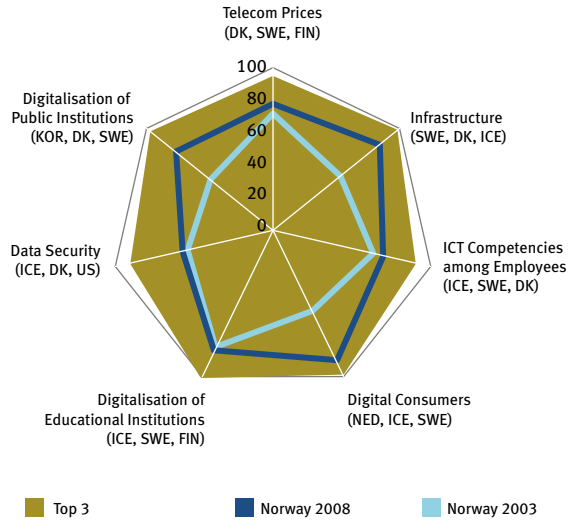
Norway performs well when measuring the ICT framework (6th). Norway is particularly strong when measuring employees' basic ICT skills, digital consumers and access to government services on the internet. From 2003 to 2008, Norway has seen strong improvements in broadband access, households with access to the internet, and the government's prioritisation of ICT (see Figure 7.2).

Human Resources

In the area of human resources, Norway is ranked at the very top in education incentives. This is due to a strong showing in student aid. In the Nordic Innovation Model, education expenditure is calculated as a percentage of GDP. This leads to a low ranking for Norway in this area (given that GDP is much higher than normal due to high oil prices and oil exports). On the other hand, Norway remains one of the biggest spenders on education per student measured in absolute values and when adjusting for purchasing power[37]. Hence, one can easily under-estimate Norway's ranking in education expenditure. Nevertheless, Norway's performance on magnitude and quality of basic education (18th) and higher education (8th) is not among the best countries (see Figure 7.3).

37) *Education at a Glance*, p. 202, OECD, 2008.

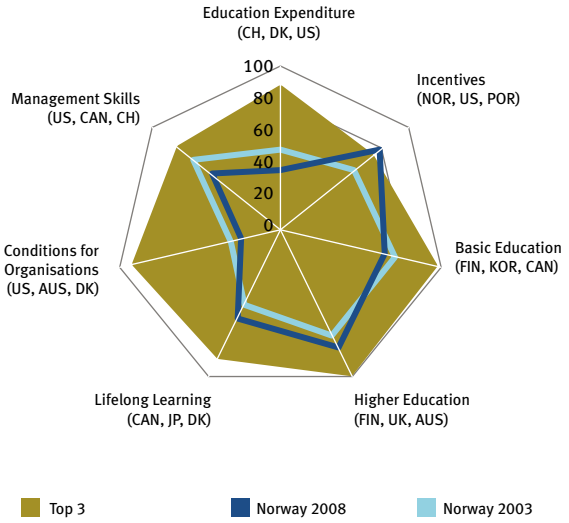
Figure 7.2: Innovation Framework ICT – Norway



Source: FORA, 2009.

Note:
a) The spider web illustrates Norway's framework conditions on the 7 policy areas composing ICT framework conditions.
b) Top 3 consists of the top three performing countries on each of the 7 policy areas composing ICT framework conditions.
c) See Appendix C for framework conditions indicators.

Figure 7.3: Innovation Framework Human Resources – Norway



Source: FORA, 2009.

Note:
a) The spider web illustrates Norway's framework conditions on the 7 policy areas composing human resources framework conditions.
b) Top 3 consists of the top three performing countries on each of the 7 policy areas composing human resources framework conditions.
c) See Appendix C for framework conditions indicators.

Entrepreneurship

Norway is ranked 13th in entrepreneurial framework conditions. Generally speaking, the framework conditions for start-up activity are good. These include administrative conditions and access to foreign markets.

Norway is ranked first in bankruptcy legislation. Among other things, this can be explained by very low costs associated with closing an insolvent business. Norway was ranked second in 2003. Closely tied to bankruptcy legislation are restarting possibilities, which covers access to aid and debt rescheduling for financially-distressed companies. Although top-performing in terms of bankruptcy legislation, Norway lags significantly in the area of restarting possibilities (ranked 20th). The problem of having strong bankruptcy legislation is that it might be difficult for an entrepreneur to restart. There could be limitations to debt rescheduling, or creditors may be able to claim funds from the bankrupt estate, which can be limiting for an entrepreneurial culture.

As is the case across the other Nordic countries, Norway lags behind in entrepreneurship culture and is ranked 20th. More specifically, Norway lags in terms of the extent of entrepreneurship in the business world and the desire to become an entrepreneur (see Figure 7.4)

Entrepreneurship is a focus area by the Norwegian Government, and the proposal is to develop better conditions for female entrepreneurs and establishing strong framework conditions for commercialising good business ideas.

The question remains if these initiatives will influence entrepreneurship activity, especially the creation of growth entrepreneurs. However, focus on the area is critical given that the connection between innovation and entrepreneurship is strong.

Knowledge Creation

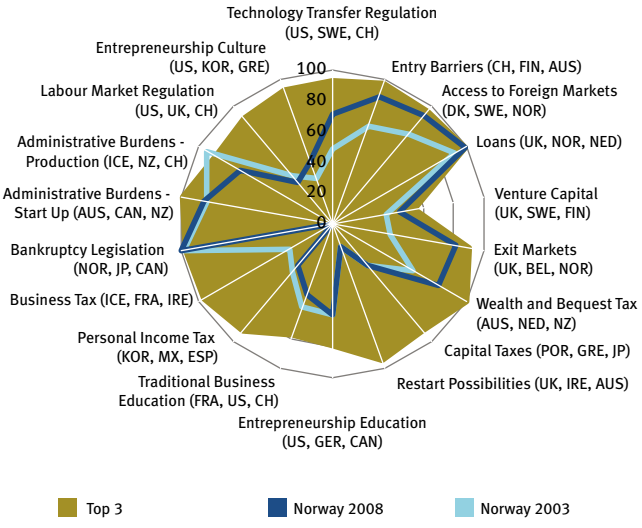
In 2008, Norway is ranked 12th on framework conditions for knowledge building and knowledge sharing. The size (percent of GDP) of public R&D investment is the lowest among all Nordic countries, which is the measure used for comparison purposes in the Nordic Innovation Monitor. When adjusting for purchasing power and calculating per capita, Norway was ranked first among the Nordic countries when measuring the size of public R&D in 2006[38].

No matter measurement methods Norway is facing some challenges with respect to the quality of research, R&D cooperation, knowledge transfer and competencies of workers.

While Norway is among the top-performing countries in scientific articles (6th), Norway is ranked in the lower half when measuring business executives' assessment of the quality of research institutions. Overall, Norway is ranked 12th in quality of public research and is thus trailing the other Nordic countries (see Figure 7.5).

38) The Research Council of Norway, 2008 and own calculations on OECD data.

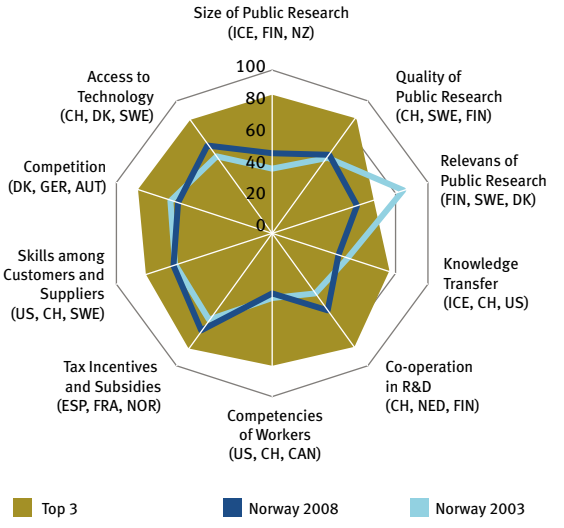
Figure 7.4: Innovation Framework Entrepreneurship – Norway



Source: FORA, 2009.

Note:
a) The spider web illustrates Norway's framework conditions on the 18 policy areas composing entrepreneurship framework conditions.
b) Top 3 consists of the top three performing countries on each of the 18 policy areas composing entrepreneurship framework conditions.
c) See Appendix C for framework conditions indicators.

Figure 7.5: Innovation Framework Knowledge Creation – Norway



Source: FORA, 2009.

Note:
a) The spider web illustrates Norway's framework conditions on the 10 policy areas composing knowledge creation framework conditions.
b) Top 3 consists of the top three performing countries on each of the 10 policy areas composing knowledge creation framework conditions.
c) See Appendix C for framework conditions indicators.

After Finland, Norway (ranked 8th) is the best-performing Nordic country in R&D cooperation. When measuring the business community's financing of public research, Norway is ranked 4th. On the other hand, Norway is lagging when measuring business executives' assessment of the level of cooperation between the business community and universities (14th). However, the assessment has improved from 2003 to 2008. The indicator does not, however, account for the level of cooperation between businesses and government research institutions, which play an important role in the Norwegian innovation system (see Figure 7.5).

In terms of business executives' assessment of the level of knowledge transfer from universities to the business world, Norway is ranked 16th (see Figure 7.5). But again this measure does not account for the cooperation taking place between the business community and government research institutions. Nevertheless, one of the initiatives in the White Paper is to contribute to a stronger cooperation between industry and research "hot spots".

Norway has a pool of highly-educated labour available in science and technology. However, Norway is faced with the challenge of maintaining a satisfactory level of educated labour in the longer term. In terms of education skills, Norway should address its ability to attract knowledge workers to the domestic business world (16th) and to work towards a higher quality in management schools (16th).

Knowledge building is, in general, highly prioritised in the White Paper. Besides initiatives to increase cooperation between industry and research, the government has taken initiatives to establish a strong framework for long-term knowledge building by increasing investments in research equipment and strengthen regional research activities.

If these initiatives prove successful, it is the assessment that Norway will be well prepared to improve performance on knowledge building in the longer term.

Box 7.1: Overall Conclusions on Norway's Innovation Capacity

ICT – and ICT use – is an important prerequisite for innovation. Among the Nordic countries, Norway is top-performing in ICT.

Norway could benefit from creating better framework conditions for growth entrepreneurs and improve competencies in the national entrepreneurship ecosystem.

Norway faces a challenge in harvesting the effect of resources invested in R&D and letting them materialise in a strong knowledge building.

In terms of new forms of innovation, the White Paper also mentions open innovation. It is acknowledged that innovation in the service sector takes place in a more open environment where customers, suppliers and competitors enter into the innovation process. However, the term user-driven innovation is not as well-addressed by policymakers in Norway.

8. Sweden

The right amount – and use – of human resources and talent is a very important driver of innovation and wealth. Many researchers and knowledge workers are employed in Swedish industries. Sweden invests heavily in new knowledge, and in contrast to most other Nordic countries, the companies offer a very positive evaluation of the innovation activity level across industries.

In its latest budget, the Swedish government has placed strong emphasis on innovation by increasing the overall appropriation for research and development. Thus, the total appropriation amounts to 2.4 billion SEK in 2009 and further funds are expected for the years ahead. According to the Government, a high effort in the area of research is very important for a strong competitive society in the long term. Only the future will show whether high investments in research will be sufficient to secure progress in innovation capability.

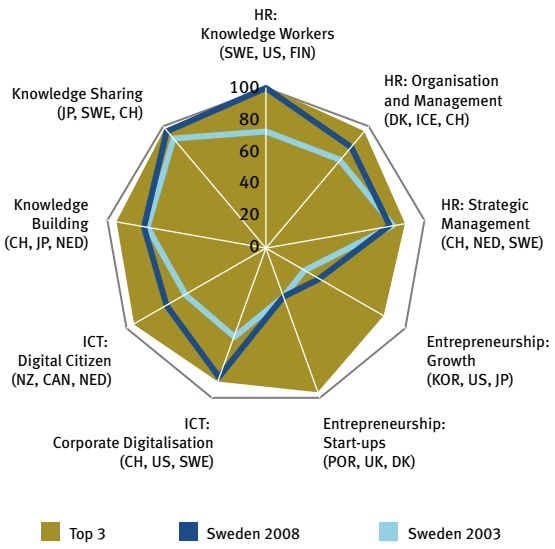
Performance

On overall innovation performance, Sweden is ranked 5th. The country is a very strong performer in 3 out of 4 innovation drivers. Only entrepreneurship performance is lacking in comparison with other countries (see Appendix B).

Sweden has made progress in all but a few of the innovation areas from 2003 to 2008 thus improving its overall performance and advancing one spot over the period. A stagnant performance on start-ups of companies contrasts with an improvement in growth entrepreneurs. However, Sweden is far behind leading OECD-countries in both areas.

Sweden is particularly strong in human resources and is ranked first on the overall index for human resources. When measuring the number of knowledge workers, Sweden is ranked among the best. The number of knowledge workers is measured as the share of researchers in businesses and the share of professionals (physics, mathematicians, economists, engineers, teachers among others) among employees. Sweden is ranked first when measuring the share of researchers and in the top-5 on the share of professionals (see Figure 8.1).

Figure 8.1: Innovation Performance – Sweden



Source: FORA, 2009.

Note:
a) The spider web illustrates Sweden's performance on the 9 policy areas composing innovation performance.
b) Top 3 consists of the top three performing countries on each of the 9 policy areas composing innovation performance.
c) See Appendix C for innovation performance indicators.

In knowledge building and knowledge sharing, Sweden claims third place. A strong level of knowledge building is a prerequisite for successful knowledge sharing. Sweden is the only Nordic country that is ranked in the top-5 in both knowledge building and knowledge sharing in 2008. This was also the case in 2003 (see Figure 8.1).

As is the case in the other Nordic countries, Sweden performs well in ICT and is ranked 5th overall. Sweden's strength is particularly evident when measuring corporate digitalisation, where Sweden is ranked 3rd. Swedish business executives offer a strong assessment of the extent to which ICT developments meet the demands of the business community (1st), and Sweden is also strong on the size of corporate internet use (2nd). When measuring the citizens' use of the internet, Sweden is ranked 7th (see Figure 8.1).

As stated, Sweden's weaknesses on innovation performance are found in entrepreneurship activity. Here, Sweden is ranked 15th on the overall index. Sweden is ranked 11th in start-up activity, which is the lowest ranking among all Nordic countries. Furthermore, Sweden's ranking in growth entrepreneurs is modest. However, ranked 9th, Sweden is edging out both Denmark and Norway.

Framework Conditions

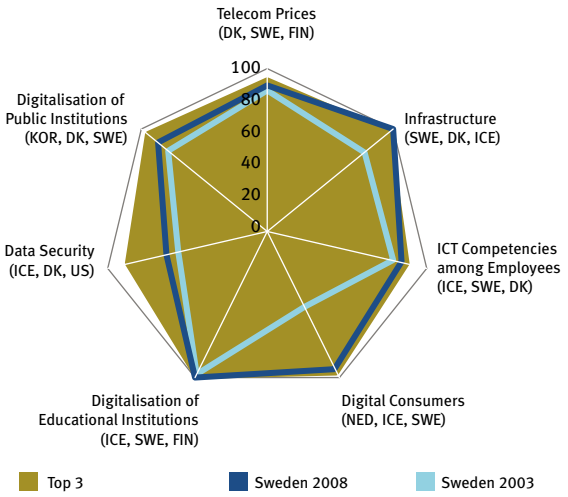
The strong emphasis on knowledge- and research-based innovation in Sweden is – other things being equal – conducive to framework conditions related to human resources and knowledge building. However, on overall framework conditions, Sweden is ranked 9th in 2008 (which is 2 spots lower than in 2003). The high ranking on innovation performance is not reflected in the framework conditions, and the decrease in ranking could give reason to concern.

ICT

Sweden has good framework conditions for ICT and is ranked 3rd among all countries. Sweden is ranked in the Top-3 in 6 of the 7 areas (see Figure 8.2).

Sweden is ranked first in ICT infrastructure. The only area where Sweden is not a top-performer is on data security (7th). Progress in the latest five-year period is primarily seen in the policy area digital consumers resulting in an improvement from 6th to 3rd. Overall, ICT framework conditions are world class (see Figure 8.2).

Figure 8.2: Innovation Framework ICT – Sweden



Source: FORA, 2009.

Note:
a) The spider web illustrates Sweden's framework conditions on the 7 policy areas composing ICT framework conditions.
b) Top 3 consists of the top three performing countries on each of the 7 policy areas composing ICT framework conditions.
c) See Appendix C for framework conditions indicators.

Knowledge Creation

In terms of framework conditions for knowledge building and knowledge sharing, Sweden is ranked 4th. This correlates well with Sweden's performance in the area.

Sweden is ranked in the top-5 in 5 of the 6 areas that cover knowledge building, i.e. policy areas related to research, knowledge transfer and competencies of workers. When measuring the policy areas quality and relevance of research, Sweden is ranked as high as 2nd. Sweden is ranked 3rd on the indicator measuring public expenditure in R&D (in percent of GDP) (see Figure 8.3).

However, on co-operation in R&D there is room for improvement with regards to business financing of public research (20th). Moreover, the attractiveness of the country to foreign knowledge workers is not high (19th).

In knowledge sharing related policy areas, Sweden performs particularly well in access to technology and skills among customers and suppliers. In both areas, Sweden is ranked 3rd. Sweden has climbed the ladder from 2003 to 2008, which however is mostly a consequence of other countries losing ground.

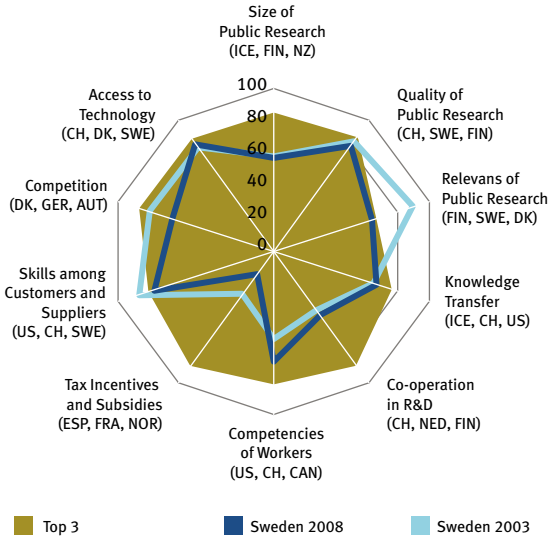
Human Resources

Compared to the other Nordic countries, Sweden's ranking is average when measuring the framework conditions for human resources (7th). Denmark and Iceland are ranked 3rd and 6th, respectively. The mediocre ranking of Sweden is rather surprising given Sweden's ranking as number 1 on performance on human resources. Either has Sweden managed to focus on the most important framework conditions conducive to a high performance on human resources (like for instance higher education) or rather, a broad effort in the area of human capital has turned Sweden into a top-performing country (see Figure 8.4).

Sweden's primary strength is found in higher education, where Sweden is ranked 5th. Among the Nordic countries, only Finland outperforms Sweden when measuring the scope of higher education.

In the area of higher education, Sweden performs well in interaction between companies and universities (2nd), enrolment in higher education (4th), and the share of PhDs (4th). On the other hand, Sweden's performance in share of population and share of young people with a degree from higher education is less impressive (12th). In the longer term, this may jeopardize Sweden's strong position in scope of higher education. At the same time, completion rates in higher education are relatively low. Sweden was ranked 2nd in scope of higher education in 2003 and has since dropped 3 places.

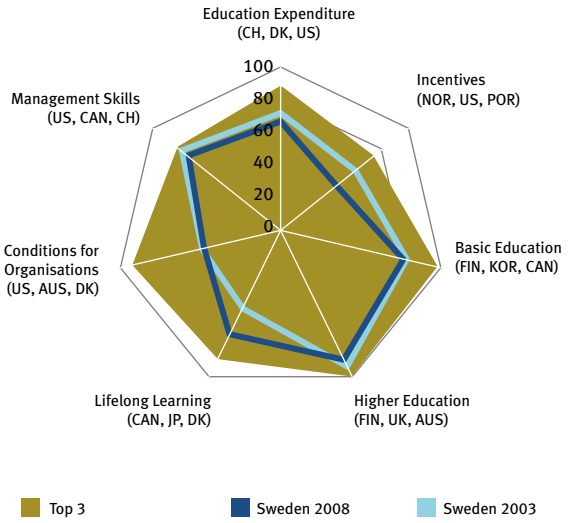
Figure 8.3: Innovation Framework Knowledge Creation – Sweden



Source: FORA, 2009.

Note:
a) The spider web illustrates Sweden's framework conditions on the 10 policy areas composing knowledge creation framework conditions.
b) Top 3 consists of the top three performing countries on each of the 10 policy areas composing knowledge creation framework conditions.
c) See Appendix C for framework conditions indicators.

Figure 8.4: Innovation Framework Human Resources – Sweden



Source: FORA, 2009.

Note:
a) The spider web illustrates Sweden's framework conditions on the 7 policy areas composing human resources framework conditions.
b) Top 3 consists of the top three performing countries on each of the 7 policy areas composing human resources framework conditions.
c) See Appendix C for framework conditions indicators.

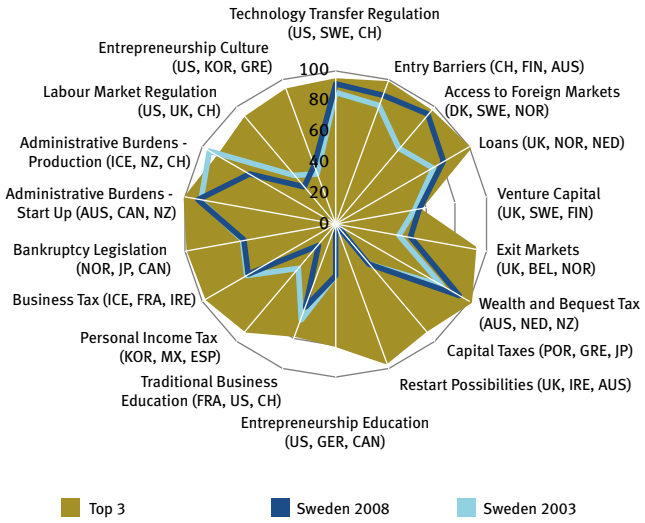
Entrepreneurship

Sweden is ranked 17th in entrepreneurship and this policy area remains Sweden's weakest in the overall framework index. However, some of the areas conducive to entrepreneurship are doing well for Sweden, in particularly those that are vital to enterprise start-up. Still, this has yet to materialise into a strong showing when measuring start-up activity on the overall performance index.

Sweden's performance is quite good in venture capital, access to foreign markets, administrative burdens (start-up) and entry barriers. In venture capital – early stage – Sweden is ranked first. In access to foreign markets, Sweden is ranked 2nd. Here, Sweden has made remarkable progress since 2003, where it was ranked 10th (see Figure 8.5).

In terms of the conditions for growth entrepreneurs, Sweden lags behind in the area of bankruptcy legislation. Sweden is ranked 15th and trails the other Nordic countries considerably. The poor ranking is explained by the higher costs incurred when closing a bankrupt enterprise, the time spent on closing a company, and the fact that the creditors on average are granted a lower share of their claims. Sweden holds the poorest framework conditions on restart possibilities of all countries indicating that access to aid and the possibility of debt-rescheduling is weak. The whole area of bankruptcy could potentially be a focus area for the Swedish government if it is to support a stronger entrepreneurial mindset (see Figure 8.5).

Figure 8.5: Innovation Framework Entrepreneurship – Sweden



Source: FORA, 2009.

Note:
a) The spider web illustrates Sweden's framework conditions on the 18 policy areas composing entrepreneurship framework conditions.
b) Top 3 consists of the top three performing countries on each of the 18 policy areas composing entrepreneurship framework conditions.
c) See Appendix C for framework conditions indicators.

In other areas that impact the share of growth entrepreneurs, Sweden is also lagging behind. This applies to entrepreneurship culture, tax structure and entrepreneurship education.

As is the case for the other Nordic countries, Sweden's ranking is poor in entrepreneurship culture (21st) and entrepreneurship education (18th). Sweden is ranked in the lower half among all countries when measuring tax structure, i.e. personal income tax; corporate taxation; capital tax and wealth and bequest tax (see Figure 8.5).

The question is how Sweden prioritises the above-mentioned areas. As mentioned earlier, Sweden has a long track record for investing heavily in R&D. There is an ongoing debate in Sweden as to the positive impact on wealth from the invested resources. In that respect, focus has been on the country's entrepreneurship performance e.g. lowering the amount of administrative burdens and securing access to venture capital.

Entrepreneurship is highlighted in the government's 2008 proposition. The proposition states that entrepreneurs are vital to innovation. Therefore, research on entrepreneurship has been given a high priority. More specifically, the government will grant additional funds to research on entrepreneurship starting in 2009 in order to strengthen the knowledge of entrepreneurship and its correlation with higher wealth.

Sweden has a relatively high number of researchers and research "hot spots" in the entrepreneurial area. The Stockholm School of Entrepreneurship is highlighted as an example of an institution, whose purpose is to be a leading authority in entrepreneurship research.

Box 8.1: Overall Conclusions on Sweden's Innovation Capacity

Sweden is the top-performing country in share of knowledge workers, which is a critical driver of innovation.

Sweden is the Nordic country that prioritises and invests most heavily in knowledge creation.

Sweden could benefit from emphasis on improving entrepreneurship conditions to both start-up activity and growth.

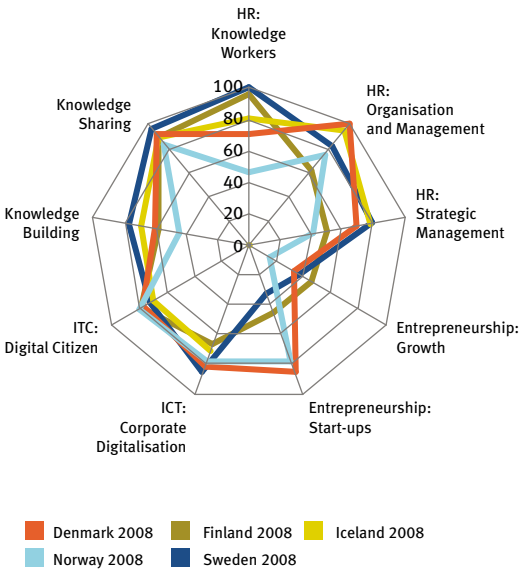
Visualisation of the Nordic Countries' Innovation Capacity

Box A: The Innovation Capacity in The Nordic Countries

The conclusions on national level show similarities among the Nordic countries performances and framework conditions on the four innovation drivers. But there are also decisive differences among the Nordic countries.

The figures A, B, C, D and E illustrate the Nordic similarities and differences. Looking at the figures underscores the fact that the Nordic countries could benefit from learning from each other when trying to improve their national innovation capacity. The Nordic countries share relatively good innovation performance and framework conditions – making it evident that each country may be able to find best practice experience within the borders of the Nordic region.

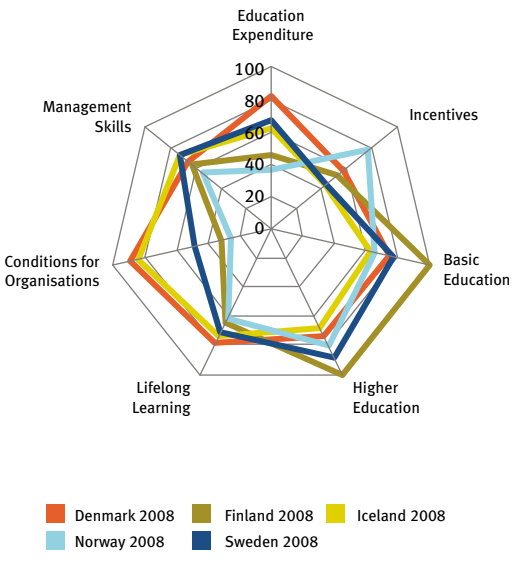
Figure A: Innovation Performance – The Nordic Region



Source: FORA, 2009.

Note:
a) The spider web illustrates the Nordic countries framework conditions on 9 policy areas composing innovation performance.
b) See Appendix C for performance indicators.
c) There are no data available on Iceland's performance on entrepreneurship. Thus, Iceland does not figure on these two indicators.

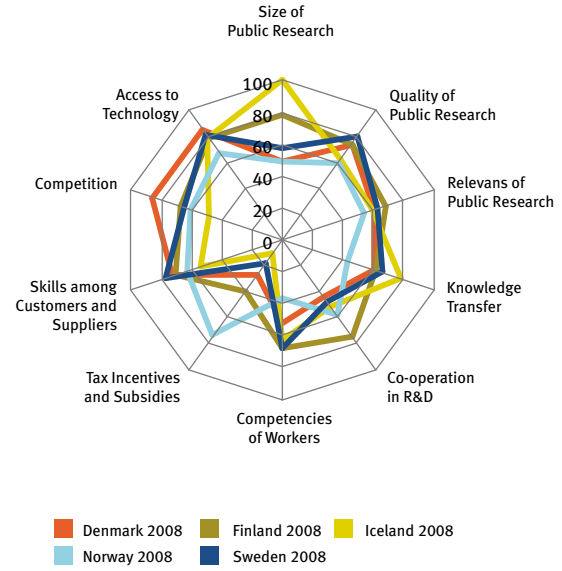
Figure B: Innovation Framework Human Resources – The Nordic Region



Source: FORA, 2009.

Note:
a) The spider web illustrates the Nordic countries framework conditions on 7 policy areas composing Human Resources framework conditions.
b) See Appendix C for human resources framework conditions indicators.

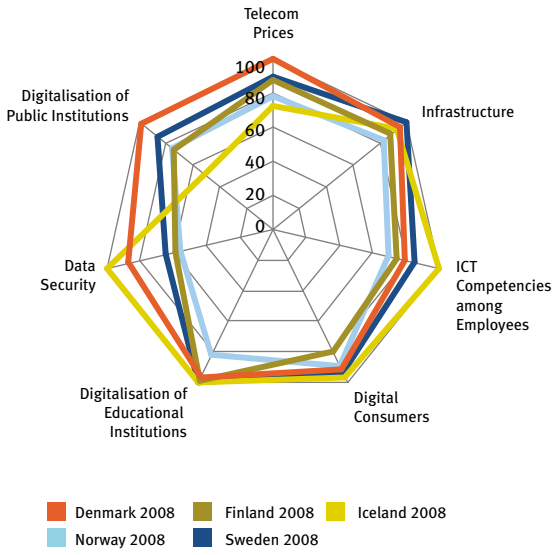
Figure C: Innovation Framework Knowledge Creation – The Nordic Region



Source: FORA, 2009.

Note:
a) The spider web illustrates the Nordic countries framework conditions on 10 policy areas composing Knowledge Creation framework conditions.
b) See Appendix C for knowledge creation framework conditions indicators.

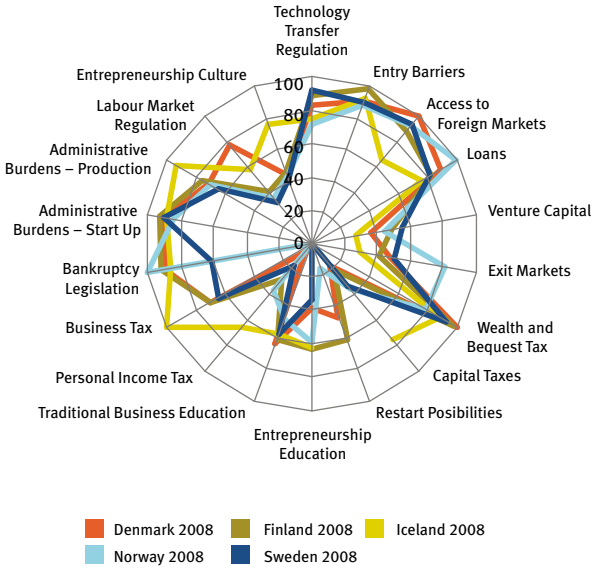
Figure D: Innovation Framework ICT – The Nordic Region



Source: FORA, 2009.

Note:
a) The spider web illustrates the Nordic countries framework conditions on 7 policy areas composing ICT framework conditions.
b) See Appendix C for ICT framework conditions indicators.

Figure E: Innovation Framework Entrepreneurship – The Nordic Region



Source: FORA, 2009.

Note:
a) The spider web illustrates the Nordic countries framework conditions on 18 policy areas composing Entrepreneurship framework conditions.
b) See Appendix C for entrepreneurship framework conditions indicators.
c) There are no data available on Iceland's framework conditions on restart possibilities. Thus, Iceland does not figure on this indicator.

9. The Nordic Competitive Advantages

The analysis of national and regional challenges will serve as a fact-based platform for making decisions on innovation policy in the Nordic region.

The Nordic Innovation Monitor thereby guides governments in improving national micro-policies through initiatives aimed at improving areas where countries lag behind, with the expectation of a high impact on innovation performance. Such improvements of policy areas will contribute to strengthening each country's innovation performance and the entire Nordic region's innovation capacity in the future.

However, the Nordic Innovation Monitor faces the same limitations as all other benchmark studies: conclusions made are restricted by the availability of statistics. Some areas are not covered – often because they are not measurable. Every year, the Nordic Innovation Monitor model is updated, and new relevant data is included in the benchmark model. The ambition is, over time, to contribute to the development of new indicators of innovation and to the ability to measure the new drivers of innovation.

For a more nuanced evaluation of each country's innovation capacity, this year's Nordic Innovation Monitor has highlighted some of the trends in the future innovation landscape.

Most of the Nordic countries are already engaged in identifying the policy implications of these new innovation trends. The ambition here is not to point to entirely new areas, but rather to suggest a reference framework that national governments may operate within the development of a strong and competitive innovation capacity in the future.

The new trends which are highlighted in the Nordic Innovation Monitor include:

- The ability to co-create value with customers and involve users in the innovation process
- The ability to source knowledge globally
- The ability to explore new business opportunities responding to social and environmental challenges

The selection of these trends is based on three criteria: a survey of existing research in the area (including the drafting of OECD's future innovation strategy); interviews with Nordic innovation and policy experts (who have pointed to the mentioned areas as particularly important); and finally in contemplating the unique skills found among the Nordic countries (which are the result of a unique cultural community and a range of institutional skills).

The hypothesis is that the Nordic countries share unique values and institutions, giving the Nordic countries advantages in competing on the new innovation trends that are evolving[39].

These values and institutions which cannot be imitated by other countries and which will contribute to innovation and wealth are expected to be the source of stronger welfare in a global knowledge economy. If we are not conscious of how these values contribute to innovation capacity, we are at a risk of not gaining the full potential and making decisions which erode or undermine the competitive power of national uniqueness.

39) D*ansk institutionel konkurrenceevne i den globale økonomi*, John L. Campbell, Department of Sociology, Dartmouth College, USA, and International Center for Business and Politics Copenhagen Business School, Denmark, and Ove K. Pedersen, International Center for Business and Politics Copenhagen Business School, Denmark.

Currently, governments develop strategies that are focused on strengthening national competitive power through the prioritization of existing strongholds. New policy initiatives could be even more effective if 'cultural strongholds' were also taken into consideration[40].

Nordic Cultural Values

The Nordic countries are by no means alike; however, in a global context, the countries form a cultural community. In terms of values, previous Nordic analyses show that the Nordic countries share a set of cultural values which impact innovation capacity[41].

The cultural values can be summarised under the headlines equality, trust, low distance to power, inclusion, flexibility, environmental consciousness, work ethics and aesthetics.

While it is not yet possible to empirically determine a direct cause and effect correlation between the Nordic values and the Nordic business and innovation strongholds, there are nonetheless a number of distinct couplings, proposed in the following sections.

Equality

The ideal of equality is fundamental to the Nordic region. The ideal evolves around the notion that each individual is unique and should be treated with respect. The tightly knit social safety net is built on this value and so is the welfare production attached to it – elderly care, education, health, child care, work environment – which all contribute to a positive sense of security.

The welfare production delivers a range of competencies that can be transformed into products and solutions in the global market place, where health and care services are in growing demand.

Furthermore, the concept of equality in the Nordic region has materialised into the highest share of women in active employment and has also led to the Nordic countries having the world's best-educated women.

This will be a significant advantage in the innovation economy, where competition is all about mobilising ideas and talent in the workforce.

Limited Distance to Power

We meet each other as equals. This creates a sense of respect and attentiveness to others, which in turn supports the exchange of knowledge and new thinking. At the same time, the low distance to power across the Nordic region has led to a democratic managerial style built on respect and the delegation of responsibility. This has created a culture where employees are committed, competent and receptive to change. Therefore, Nordic companies are often organised as "modern" horizontal network organisation with a great deal of work autonomy as opposed to more bureaucratic "traditional" hierarchies.

In the innovation economy, where competition is decided on new ideas and the ability to apply new ideas, the limited distance to power and the Nordic working culture represent distinctive competitive advantages.

40) Inglehart, Ronald F.; Weizel, Christian. *Modernization, Cultural Change and Democracy*, Cambridge University Press, 2005 – baseret på data fra World Value Survey.

41) For a more thoroughly description of the values of the Nordic region see *Norden som global vinderregion*, Mandag Morgen, 2005.

Trust

Trust – the fact that we trust each other – is fundamental to the Nordic region. Trust and security are decisive prerequisites for effective social interaction and creativity and, correspondingly, decisive preconditions for successful innovation processes[42].

Trust, combined with a limited distance to power, will contribute to an atmosphere that fuels everyday innovation. Across the Nordic region, it is easy to investigate, test and be inspired by new opportunities and technologies.

Inclusion

Common to the Nordic countries is that we want to have everyone onboard. Involvement or inclusion is a strong value, which is characteristic to the Nordic educational system, where focus is on education for everyone and development of human capital.

This approach to education has materialised into a broad talent mass and a competent recruiting platform.

Flexibility

Flexibility is a value shared by the Nordic countries. Flexibility – the ability to change and the ability to adapt – is driven by the recognition that we are small nations in a large world which does not necessarily conform to our perception of things. This flexibility presupposes that we are extroverted, open – or curious – and ready to navigate in new situations which we do not control. Among other things, this implies that we quickly adapt to new technology and that we focus on user-driven innovation, which draws on the requirements and needs of our own community.

In the global innovation economy, new solutions quickly substitute existing solutions. Therefore a large degree of flexibility and a strong ability to change represent strong competitive advantages.

Environmental Consciousness

Another distinct common Nordic value is respect for the environment. Among other things, this has materialised into a quest for sustainability, which have been incorporated as values in Nordic products and solutions as well as innovative solutions in climate technology and environmental production.

As environmental considerations, resource scarcity and ethics grow in importance on a global scale; this Nordic value represents a competitive advantage.

Work Ethics

In the Nordic region, there is a strong work ethic which revolves around personal responsibility and individual initiative. Work has a strong impact on our identity. It contributes to a sense of internal motivation and a high level of commitment.

As individually-organised, innovation-orientated activities grow in scope and importance, the value of the Nordic work ethic becomes increasingly important to maintain a competitive edge.

Aesthetics

Common to the Nordic region is that we appreciate the harmonic, simple expression related to functionality. This is often expressed in the concept of "Scandinavian design", but actually covers more than the visual aesthetics, which is embedded in a product's appearance and functionality.

Design processes are becoming increasingly important in creation of solutions to peoples needs, e.g. in service and concept designs[43]. The Nordic sense of aesthetics could prove to be an important capacity in developing new solutions on social needs.

Box 9.1: From Nordic Culture to Global Competitive Advantages

The Nordic values can be converted into a range of global business strengths. To the extent that the values represent a competitive advantage, they deliver a valuable contribution to the competitive edge and innovation capacity of the Nordic countries.

Nordic cultural strengths	▶	**Global business strengths**
Equality	▶	Innovative solutions to societal problems – benefiting everyone
Limited distance to power	▶	Fuelling everyday innovation
Trust	▶	Creativity as a source of innovation
Inclusion	▶	Broad and strong talent base
Flexibility	▶	Adaptability to change
Environmental consciousness	▶	Innovative solutions to secure sustainable production
Work ethics	▶	An engaged and committed workforce
Aesthetics	▶	Design as an innovation tool

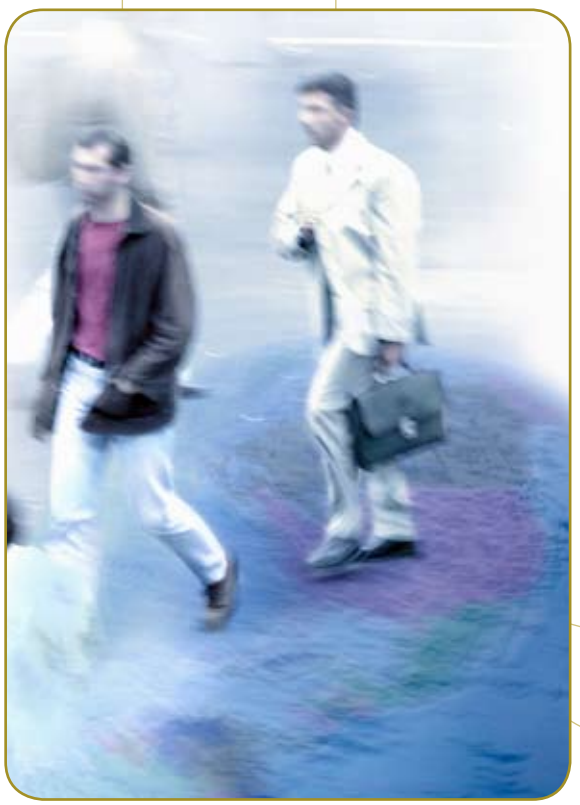
Source: FORA, 2009.

42) *European Innovation Scoreboard*.

43) *Concept Design*, FORA, 2007.

The Nordic countries embrace a range of cultural competitive advantages which greatly impact the potential of the business community and society as a whole. These values are also embedded in the framework conditions constituting the micro-policies of innovation.

For the Nordic region to hold the comparative advantages in the next decade, it is essential that the Nordic governments employ strategies that promote these values as a future source of wealth.



New Innovation Trends

Countries work strategically with implementing innovation strategies and systems all over the world, but the innovation environment gets increasingly complex, and new generations of innovation policies must be created to support the transition from an old innovation paradigm to an emerging one.

Besides investigating the implementation of the best micro-policies as we know them, new trends in innovation should be identified, and the policy implications of these new trends should be analysed. The policy implications of new innovation trends can be important for e.g. policy on knowledge creation or entrepreneurship, or for the identification of new policy areas that may evolve over time.

Based on qualitative findings and previous analysis, the Nordic Innovation Monitor report touches upon these new innovation trends, aiming to pinpoint some areas where the Nordic countries hold unique competitive advantages in utilising the future innovation drivers competitively. The hypothesis is that some of the unique Nordic values described above give the Nordic countries an advantage necessary to be global front-runners in the new age of innovation.

The three new innovation trends mentioned at the start of this chapter[44] will be analysed in relation to the unique Nordic values in the following.

User Involvement in the Innovation Process

Traditionally, company innovation has taken place in R&D departments where inspiration was found in new technology. Another driver of innovation was the need to cut costs and create innovations which were cheaper than those of the competitors. The traditional way of working with innovation revolved around internal skills and various types of market research.

However, a new driver of innovation is inspiring companies and the public sector in the creation of products and services – user driven innovation[45]. Entities are increasingly realising that by understanding user behaviour and needs, they will gain an understanding of which problems the users face and thereby how to solve them. The drivers of innovation are shifting from technology creation and price reduction towards understanding which problems should be solved for users.

In order to understand user behaviour and needs, companies and public institutions are employing new methods in the innovation process. Methods range from ethnographic research, observations and interviews, to involving users in the development process through e.g. internet communities or as lead users.

Private and public entities make products and services customisable, letting unique solutions be mass produced. The individual solutions often require an extensive partnership network and significant ICT resources, which in turn poses a set of competence requirements to management, workforce and not the least, users[46].

44) Co-create value with customers and involve users in the innovation process; Source knowledge globally; and Explore new business opportunities responding to social and environmental challenges.

45) *User-driven innovation – results and recommendations*, FORA 2005.

46) Prahalad, C.K.; Krishnan, M.S. *New Age of Innovation*, 2008.

Box 9.2: Jordan – a Case Study of User-driven Innovation

In 2004 the Norwegian company Jordan, marketer and producer of oral care products, decided to involve users in the development phase of building a new innovation platform for the company. Jordan was feeling the pressure from market giants Procter & Gamble (Oral B) and Palmolive-Colgate (Colgate), whose R&D expenditure is higher than Jordan's total revenues.

Jordan decided to involve users in the development phase of building a new innovation platform. Using among other things ethnographic studies Jordan built an innovation platform, which helped shape a new understanding of what a toothbrush is, how it is designed and how to position the toothbrush in the market place.

The study of the users' non-recognised needs revealed that women in particular divide personal care into hygiene and care. Hygiene is all about the short-term and about removing the symptoms of poor care. Care is a long-term preventive measure. The oral care industry primarily focuses on expensive technical hygiene solutions. Hence there was a potential for Jordan to move into the care category and to move away from the expensive technology race.

Based on the new innovation platform the brand positioning concept "Love your Teeth" was developed. At the same time a range of physical products were developed, products that women could carry with them at all time and which could be left everywhere as a care product and not as a more private hygiene product.

Jordan's change of innovation platform led to increased market shares across the Nordic Region. At the same time, the company has become more attractive among young people.

Source: Jordan and FORA, 2008.

By further developing and applying these skills, the Nordic countries can identify new needs which will expose new solutions and new production. The critical part is to create the optimal framework conditions that will support companies and public entities in experimenting with different models of integrating users in the innovation process.

Box 9.3: Programme for User-driven Innovation

The Danish government has implemented a Programme for User-Driven Innovation with the purpose of strengthening user-driven innovation in enterprises and public institutions.

User-driven innovation is, in this context, defined as taking a systematic approach to the development of new products, services, processes, forms of organisation, that is based on the exploration or involvement of users.

The term 'users' refers to consumers, customers, employees, enterprises, collaborating partners, suppliers or citizens in a broad sense.

Under the programme, grants are made to projects promoting user-driven innovation in Denmark.

100 million DKK are made available each year during the period 2007-2010. The programme is under the auspices of the Ministry of Economic and Business Affairs.

The programme is supplemented by a similar programme under the auspices of the Ministry of Science, Technology and Innovation. This programme is specifically devoted to supporting research projects on user-driven innovation.

Source: Danish Agency of Business and Housing, executive order on project grants under the programme for user-driven innovation, 2007 and FORA 2009.

The Nordic countries have a strong set of competencies in collaboration: with each other internally, with partners on an external scale and with customers and users. The Nordic values of inclusion, equality and trust enhance collaborative skills. Thus it is evident to further develop and apply collaborative skills by involving users in the innovation process.

The hypothesis is that the Nordic countries have some competetive advantages in exploring the full potential of user-driven innovation, where users' recognised and unrecognised needs are explored and new development opportunities are exposed.

Source Knowledge Globally

Multinationals have always sourced knowledge globally, but in the future, every company, even the smallest one, has the opportunity to source knowledge on a global scale – and they need to do so to manage the global competition on innovation.

In earlier days, companies usually searched for knowledge from renowned experts and institutions. Today, companies locate knowledge everywhere, even from individuals with a background and location that may appear less than obvious, but who nonetheless are highly relevant when attempting to solve a specific innovation challenge.

The new global search for knowledge bears important policy implications. In the industrial era, the free movement of commodities and capital was, and still is, crucial, but in the global knowledge economy, the free movement of knowledge workers will be critical. Codified knowledge can be shared at a distance, but tacit or hidden knowledge can only be shared through physical presence.

It is equally important for a country's or a region's wealth that companies take active part in global knowledge sharing. It is also important that a country or region create unique knowledge which is attractive to companies abroad. Deciding how to accomplish this is a challenging political task.

The Nordic countries are well-prepared to develop and mobilise the talent mass and to supply companies with a work force tailored to the challenges offered by the current age of innovation. Values such as work ethics, flexibility and aesthetics contribute to a highly-innovative labour force, and the welfare state undergoes a continuous evolution to secure the best possible conditions for every single individual.

At the same time, it is necessary to ensure that talent from across the globe becomes part of the talent pool that Nordic countries can mobilise – providing knowledge and ideas, and being motivated and engaged, and carrying out research in the Nordic countries. However, this will depend on the ability of the Nordic countries to find new solutions in terms of including the surrounding world in future Nordic competence building[47].

Box 9.4: Mobile Heights – a Swedish Initiative to Develop and Attract Global Talent

The Nordic countries' ability to find new solutions by involving skills from the surrounding stakeholders is crucial to the future competitiveness of the Nordic region. In this matter, the ability to attract global talent is critical for the Nordic countries. The right talent is important to come up with ideas and innovative research that match the best in the world.

The importance of attracting global talent is one of the main focus areas in Mobile Heights – a new cluster initiative in Southern Sweden.

Mobile Heights has been initiated by a group of leading organisations and companies in South-ern Sweden (Region Skåne, Sony Ericsson, Lunds Tekniska Högskola, Malmö Högskola, Telia Sonera and Ericsson Mobile Platforms) with the overall purpose of bringing together world-class partners from the mobile industry and academia as well as institutions from the public sector to create world-class research and education and to create a foundation for internationally competitive and growing companies in mobile communications.

Mobile Heights has been funded by VINNOVA and has, among other things, launched a campaign to attract more students to the engineering faculties in Southern Sweden. Furthermore, Mobile Heights has focused on establishing and formalizing service innovation research in the mobile industry.

With a wide range of leading partners, Mobile Heights is a good example of a partnership between government institutions, academic institutions and private companies. The partners hope that Mobile Heights can help attract global talent to Southern Sweden and thereby make the region a global hot spot for innovation and research in the area of mobile technology.

So far, initiatives taken by Mobile Heights have been a success. One example is the initiative aimed at increasing applications to technical faculties, which resulted in a 20 to 30 percent increase in the number of applications filed to Lunds Tekniska Högskola – improving the prospects for talent mobilisation in the future in Southern Sweden.

Source: FORA, 2009.

47) There is already made attempts to identify a policy model for a Nordic collaboration in this area, e.g. FinNode and Innovation Centre Denmark in Silicon Valley, see *Establishment of Nordic Innovation Centres in Asia*, Norden, 2008.

Social and Environmental Challenges

Global challenges such as climate change, access to clean water and various social needs have, until now, been regarded as a political challenge and not a business challenge, implying that the responsibility for finding solutions rested with the political world. In the Nordic countries, the same was true for most welfare services. The governments held ownership of most welfare institutions and were responsible for welfare production.

It seems more and more obvious that the private/public demarcation is being challenged by a myriad of private and public entities that offer new solutions to problems caused by mankind's behaviour on earth. And they address challenges in the welfare sector where citizens ask for better and more individualized services. Both private and public entities open their innovation processes and create new solutions in collaboration with their partners.

The emerging demarcation also has repercussions for the role of governments. Public servants will have to collaborate in new ways with private companies. This requires a new set of skills and perhaps also a new culture in the public sector. At the same time, the Nordic welfare system provides a broad range of excellence that can be used as a key to innovation in social services if the framework conditions for innovating and cooperating with relevant partners are in place.

The Nordic countries are well-prepared to respond to the global demand for new environmentally-friendly, alternative energy sources such as wind power and much more. The Nordics' strong respect for nature has contributed to the Nordic region's leading position in alternative energy. Still, there is a strong need for a pronounced political effort to secure that the Nordic countries remain pace-setters in developing new sustainable energy solutions.

Also responding to social challenges and health issues, the Nordic welfare system (based on values of inclusion, equality and aesthetics) makes the Nordic countries well-prepared to develop new social services, which may cover everything from tele-medication to disease prevention and activation, and solutions to needs where the purpose is to atomise care, prevent diseases and mobilise elderly people to be part a supplement to the workforce.

Box 9.5: Iceland – a Pioneer in Alternative Energy Sources

Since the beginning of the 20th century Iceland has maintained a strong focus on alternative energy sources. Iceland's distinct interest in alternative energy stems from the country's geographic location, its unique and abundant natural resources and the simple fact that the country does not possess fossil fuels. Starting with hydroelectric power and later geothermal energy Iceland has produced excellent results in alternative energy.

Today, the utilisation of alternative energy sources in Iceland has become so effective that Iceland is more than capable of meeting its demand for electricity. All of Iceland's electricity comes from alternative energy sources. Altogether 80 percent of Iceland's total energy consumption stems from alternative energy sources. Fossil fuels are imported exclusively for means of transportation.

Iceland's extraction of alternative energy is so effective – and electricity so cheap – that the country has been able to attract energy-consuming foreign companies to Iceland. The energy-consuming aluminium industry has been drawn by cheap and abundant energy and constitutes, along with fishery, the most important industries in Iceland today.

Iceland is dedicating much effort to refining geothermal and hydroelectric energy. It is expected that Iceland will be capable of increasing electricity production from existing geothermal drilling by as much as 20 percent by refining the existing techniques.

In addition to the various efforts to refine the existing geothermal drillings Iceland is also experimenting with new innovative solutions. Deep Drilling is a new method that will likely revolutionise geothermal drilling. Together with international partners several Icelandic energy companies have built a consortium to run a comprehensive Deep Drilling project in Iceland. The purpose of the Deep Drilling project is to find out id it is economically viable to extract energy and chemicals from hydrostatic systems in supercritical conditions. By increasing drilling depth in geothermal drilling from 2-3 kilometres to 5 kilometres the return per drilling will increase by as much as 15 Megavolt – or 15 million volts.

In addition to the extraction of more energy from alternative energy sources Iceland is putting significant effort into limiting its dependence of fossil fuels for transpiration. International giants including Shell, DaimlerChrystler and Norsk Hydro has chosen Iceland as a test and research market for hydrogen-based transportation. Together with public and private Icelandic partners the international companies are carrying a project to test and uncover the possibilities for using fuel cell technology to run electric engines in hydrogen and oxygen. Among other things, the international partners has chosen Iceland as a test and research markets because Iceland could guarantee that pure alternative energy would be used in connection with the project.

In addition to the effort in energy creating and fossil limiting innovation Iceland is also working with environmentally-friendly CO^2 storage. The Icelandic energy company Iceland Energy is working with international partners on a project to store CO^2 in natural cavities underground. If CO^2 is mixed with water and injected in basalt rock that make up 90 percent of Iceland's underground the CO^2 will be fossilized and will remain submerged. Is successful the method will be an effective toll in battling CO^2 emissions.

Source: Reykjavik Energy, Mannvit Engineering, Icelandic New Energy, Innovation Centre Iceland, FORA, 2009.

10. Recommendations

The Nordic Innovation Monitor demonstrates that the Nordic companies and governments are well-positioned to take a leading role in exploring innovation policies and guiding other countries on how to create a strong innovation capacity.

Embrace the New Innovation Trends

A number of areas stand out when combining unique Nordic values with emerging trends of innovation. The Nordic region could experiment with the implementation of policy frameworks that will support private and public entities to involve users in the innovation process. The Nordic region could also work strategically with solutions of private and public entities to engage in open innovation partnerships where knowledge is sourced globally. And the Nordic region could pool the experiences with and the research in environmental and social solutions made by each country.

For the Nordic region to maintain a strong position in the future competition on innovation grasping new trends is not enough. The Nordic countries have already built a strong innovation capacity, but an on-going focus on improving the micro-policies will be needed to secure future prosperity and wealth. The Nordic region faces some severe challenges if the Nordic region is to hold its position as one of the global innovation leaders.

Lever Existing Enterprising Behaviour

Entrepreneurship is the most challenging area for the Nordic region. Over the past decade across the entire Nordic region, there has been a growing political focus on targeting entrepreneurship. Although efforts have led to significant improvements on start-up rates, the Nordic region still faces a challenge in formulating an entrepreneurship policy that will improve the ratio of high-growth entrepreneurship.

The Nordic countries have been inspired by the well-functioning entrepreneurship ecosystems in the US and the UK when formulating policy initiatives to promote national growth-oriented entrepreneurship cultures. There are important lessons learnt from these countries and with time the new initiatives will probably prove to have an impact on the Nordic performance on entrepreneurship.

However, there could also be a growth potential in approaching the challenge from a joint Nordic perspective. This could maybe solve some of the paradoxes the entrepreneurship area holds. The Nordic region has one of the world's most innovative workforces. The welfare system should by all means support risk, since no person will be left to poverty if they fail with a start-up company. But still, this does not lead to growth entrepreneurs. The Nordic region could initiate a joint work on how to define and implement a unique entrepreneurship policy customized to the Nordic population.

Educate Young People

Looking at the framework conditions for human resources, the Nordic region is among the global leaders, but the Nordic region is stagnating on this area. To increase the amount of knowledge workers in the Nordic region will be a growing challenge in a global knowledge economy, where competition will be increasingly based on individuals' skills, experience and talent.

A common challenge for the Nordic countries is to find ways to attract young people to higher education and make them complete their studies. At the same time there is a growing need to provide framework conditions that support student's efforts to achieve competencies that will be relevant in the future innovative landscape, e.g. interdisciplinary competencies and understanding ICT as an enabler of innovation. The shared cultural values of the Nordic region could be a competitive factor that could be further explored through a joint effort to improve skills and competencies among the Nordic workforce.

Be Attractive to Foreign Talent

On knowledge creation, the Nordic Region is comparable to the best English-speaking countries when it comes to framework conditions and performance. However, the Nordic region faces a challenge in attracting foreign knowledge workers to the region. A joint effort of the Nordic region to attract globally sourced knowledge could prove to be effect full overcoming barriers in this area. The Nordic region can present a wider range of career opportunities, networks of excellence, and cultural diversity than individual countries.

Improve Statistics

With respect to the whole area of knowledge building and knowledge sharing, it could also be beneficial for the Nordic region to analyse what new areas of knowledge building are important for innovation, and examine how these areas can strategically enforce innovation capacity. There could be a shared Nordic interest in developing the indicators required to make fact-based policy on new trends in knowledge creation – also highlighting strengths of the Nordic welfare model that have not yet been systematically exposed.

Appendix A

Analytical Design of the Nordic Innovation Monitor 2009

The purpose of the Nordic Innovation Monitor is to shed light on the factors determining wealth in the Nordic region, and to identify the micro-level policy areas that need to be addressed if the Nordic countries are to maintain and increase the current level of wealth compared to other regions globally. The report introduces a range of initiatives that could potentially strengthen the areas in need of attention.

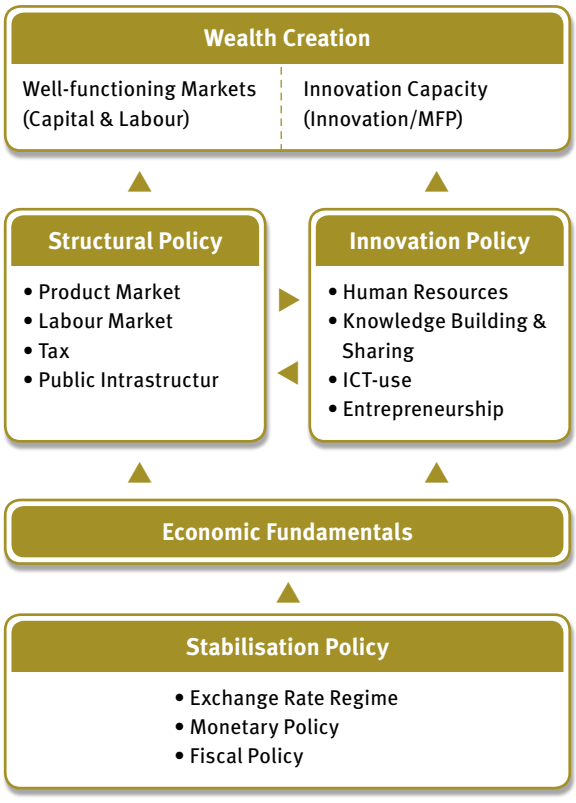
The Nordic Innovation Monitor provides an analytical platform for evaluating innovation performance across the Nordic countries' – and the framework conditions that enable this performance.

The following sections briefly introduce the analytical design of the Nordic Innovation Monitor.

Wealth and Policy Framework

Efficient economic policies form the backbone of a country's ability to improve its innovation capacity and wealth creation (see Figure 1).

Figure 1: Model for Wealth Creation



Source: FORA, 2007.

Economic policies include:

- **Stabilisation policy:** Secures sound macroeconomic stability which creates the foundation for economic prosperity by securing fiscal discipline and low inflation rates
- **Structural policy:** Ensures the presence of well-functioning markets and institutions, and an orientation to build an open and competitive economic environment which ensures that resources are allocated in an optimal way
- **Innovation policy:** Micro policies establish the framework conditions conducive to innovation

The current global economic crisis has renewed interest in using fiscal and monetary policies to create a stable platform for economic prosperity, with low inflation rates and strong exchange rates. Structural policies constitute a universally-accepted tool for modern economies to create well-functioning open markets as a prerequisite for growth.

Throughout the past decades, micro policies have evolved as a policy area where governments can empower countries with unique competitive strengths.

Micro Policy Framework

Building on OECD's benchmark studies, FORA has developed a unique framework for sizing national innovation capacity. The framework goes beyond the economic fundamentals by providing the full explanatory power of innovation and prosperity.

The starting point is the launching of the OECD benchmark study "Growth Follow-Up: Micro-Policies for Growth and Productivity" (2001) which identifies wealth factors or innovation drivers that are important for sustaining future growth.

This OECD study identifies four areas that are likely to be principal factors of growth in the future:

- Human Resources
- Knowledge Building and Knowledge Sharing
- ICT
- Entrepreneurship

In analyses carried out by FORA these four drivers lead to growth and wealth creation through their contributions to higher multi-factor productivity (MFP) (see Figure 2).

FORA's method is built on the classic growth framework, where the accumulation and improvement of labour and capital and MFP determine wealth creation. While most economic literature treats MFP as the residual, MFP remains central to FORA's research.

The four areas are seen as drivers of growth. In that respect, the Nordic Innovation Monitor distinguishes itself from other benchmark systems by applying a broader definition of innovation. Other indicator systems primarily define innovation through knowledge creation and ICT. The Nordic Innovation Monitor emphasises the environment for entrepreneurship and the skills of national human resources as additional drivers of innovation.

Access to high quality of human resources is very important for future competition on innovation. This encompasses not only access to knowledge workers in the natural sciences, but also individuals with a background in social science and business administration.

Knowledge building and knowledge sharing are also important for innovation. Technology is a necessary enabler of innovation, and international indicators covering knowledge building and knowledge sharing focus heavily on R&D and technology. It is indeed very important that companies have access to the newest technology, and the emerging international markets for technology will give more and more companies easier access to what they need.

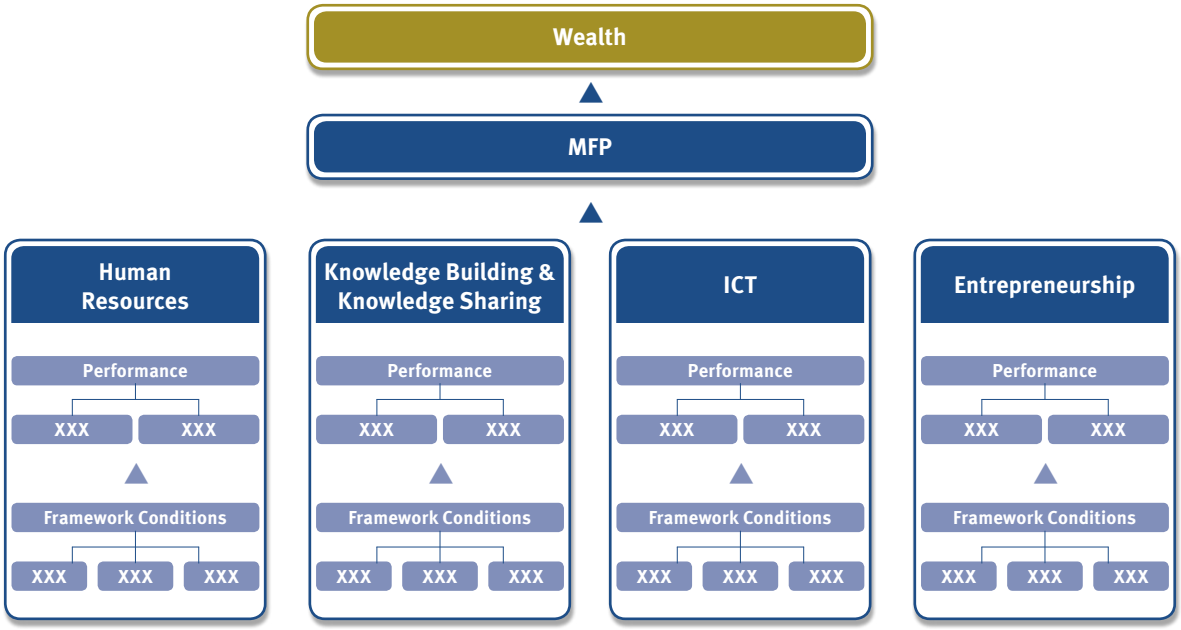
In the area of knowledge building and knowledge-sharing, there is a lack of international comparable indicators that measure new kinds of knowledge creation such as knowledge sourced through open innovation processes, or knowledge achieved through involving users in the innovation process. In the Nordic Innovation Monitor, these issues are discussed when looking into new trends in innovation policy.

It can be argued that ICT is a part of knowledge building and knowledge sharing. However, as an indispensable enabler of innovation and to be in line with the OECD study, ICT is investigated as a separate area in the Nordic Innovation Monitor.

Entrepreneurship is also a driver of innovation. There are some indications that innovation coming from new firms is as important to a country's wealth creation as innovation from existing firms. For instance, start-ups in the ICT sector in the 1990s contributed significantly to overall MFP growth[1]. As such, entrepreneurship is a separate – and very important – area for investigation in the Nordic Innovation Monitor.

1) OECD (2001), *The New Economy Beyond the Hype*, The OECD Growth Project, p. 73.

Figure 2: Model for Innovation Capacity



Source: FORA, 2006.

FORA studies of the four innovation drivers

Building on the initial OECD study, FORA has carried out research in each of the four innovation drivers:

- *Benchmarking the Productive Use of Knowledge Workers – What can Denmark learn? (April 2004)*
- *A Benchmark Study of Innovation and Innovation Policies – What can Denmark learn? (September 2003)*
- *A Benchmark Study of ICT – What can Denmark learn? (October 2004)*
- *A Benchmark Study of Entrepreneurship – What can Denmark learn? (July 2003)*

The four reports provide an in-depth analysis of the differences in the innovation capacity of 27 OECD countries and can be downloaded from www.foranet.dk/Publikationer/Rapporter.aspx

The Innovation Monitor differs from traditional benchmark studies on innovation performance in another important area: where other monitors rank countries on a number of relevant indicators, FORA goes a step further in identifying two separate sets of relevant indicators:

- **Performance indicators:** a number of complex, yet coherent activities that are generally believed to have a positive effect on productivity (MFP)
- **Framework condition indicators:** a quantification of policies and factors related to the four drivers of growth: framework conditions are believed to have an effect on the performance indicators

Performance and framework conditions are expressed, measured and organised in relation to the four drivers of innovation. Performance and framework conditions are summarised into two composite indicators.

The composite indicator for performance covers 9 performance areas, which are based on 30 indicators related to each of the four drivers of innovation. The composite indicator for framework conditions covers 42 policy areas, which are based on 135 indicators, also related to each of the four drivers of innovation.

The Nordic Innovation Monitor covers a total of 165 indicators.

The indicators are very different from each other. Some are survey-based, while others are register-based data. For example, entrepreneurship performance is measured by a number of indicators: growth in turnover, growth in the number of employees and start-up rates. Entrepreneurship framework conditions are in some cases measured by survey data. For example, to measure the indicator *Risk* the share of the population agreeing with the statement: *One should not start a business if there is a risk it might fail* is used. In that way both fact-based and attitudinal areas are included in the analysis. A complete list of indicators and sources is found in Appendix C.

The distinction between performance and framework condition indicators allows for the identification of critical policy areas for building a solid capacity for productivity growth by identifying common features among the top-performing countries. The analysis is based on two important assumptions:

- That government initiatives have a significant impact on framework conditions
- That a positive correlation exists between performance indicators and framework condition indicators, which in turn implies that improved framework conditions will lead to improved performance

The composite indicator for performance makes it possible to analyse performance on an overall level and on subordinate levels, and thus allows for a better understanding of the differences behind the rankings.

Methods

Standardisation of Data

Indicators are often expressed in different units (e.g. in absolute value or as a share) and therefore have to be standardised in order to make them comparable. Several techniques can be used to standardize indicators. The method chosen by FORA is:

Distance from best and worst performer, where positioning is in relation to the global maximum and minimum. The index takes a value between 0 (worst performer) and 100 (best performer).

The formula:

$$\text{Indicator value (country x)} = \frac{\text{Value (country x)} - \text{minimum}}{\text{maximum} - \text{minimum}} * 100$$

This is also the technique the OECD uses in their benchmark approaches. In the Nordic Innovation Monitor 2009, the standardisation has been carried out over two years: 2003 and 2008 to trace development over time. Below is an example of how data can be normalised.

Indicator: Enterprises using e-learning applications

	Share of enterprises using e-learning applications (per cent)		Standardised value	
Country	**2003**	**2008**	**2003**	**2008**
Denmark	8	28	0	69
Finland	30	37	76	100
Iceland	18	17	34	31
Norway	13	34	17	90
Sweden	20	27	41	66

For instance, the standardised value for Denmark in 2008 is calculated as:

$$\text{Indicator value (Denmark)} = \frac{28 - 8}{37 - 8} * 100 = 69$$

Countries are ranked in order to determine the best performing countries. In the example above, Finland is ranked first among the Nordic countries in both 2003 (score 76) and 2008 (score 100).

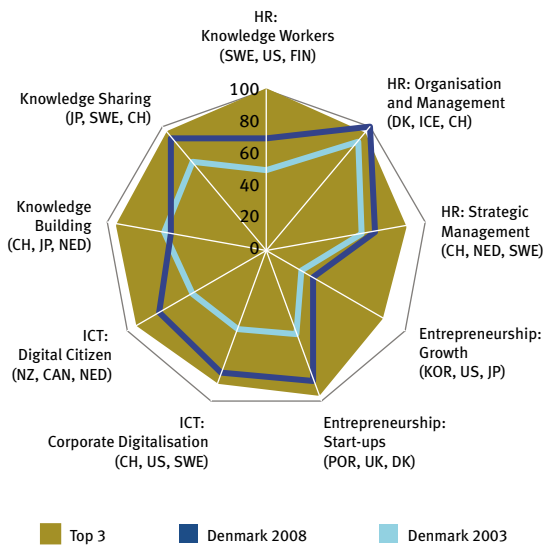
Each of the 51 policy areas in the model are expressed by one or several indicators. The policy areas are assigned a value calculated by taking the average of each indicator's standardised value. This average value is then used to determine how a given country performs between 0 (worst performer) and 100 (best performer). The result of this exercise is shown in spider web diagrams, where a given Nordic country's value is compared to the best performing countries (see Figure 3).

Robustness Analyses

A robustness analysis is used to compare country rankings using different weights for each of the indicators. Robustness analysis should be conducted to analyse the impact of changing weights. The robustness analysis also helps to identify the top-performing countries.

Figure 4 illustrates how many times a given country will perform in top-3, top-5 and top-10 on overall performance, when the weights of the four innovation drivers are allowed to randomly vary between 0 and 1. In Figure 4, countries are sorted based on their average ranking on the four drivers. As the figure shows, the United States and Japan are the top-performing countries followed by Denmark, Korea and Sweden.

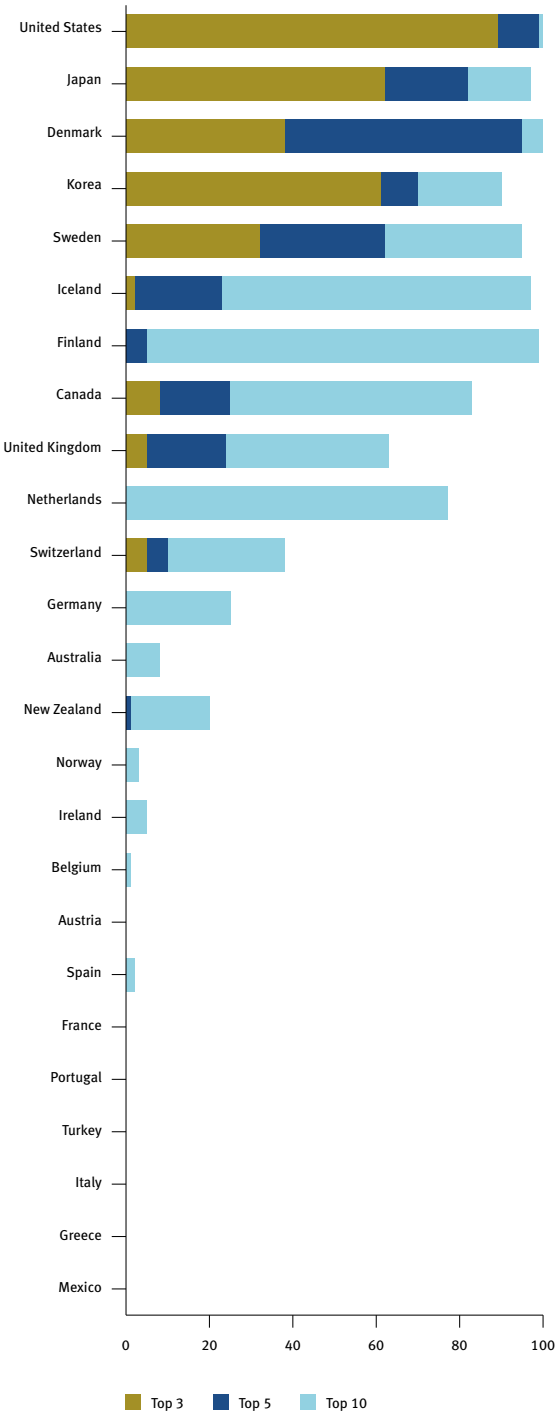
Figure 3: Innovation Performance – Denmark



Source: FORA, 2009.

Note:
a) The spider web illustrates Denmark's performance on the 9 policy areas composing innovation performance.
b) Top 3 consists of the top three performing countries on each of the 9 policy areas composing innovation performance.
c) See Appendix C for innovation performance indicators.

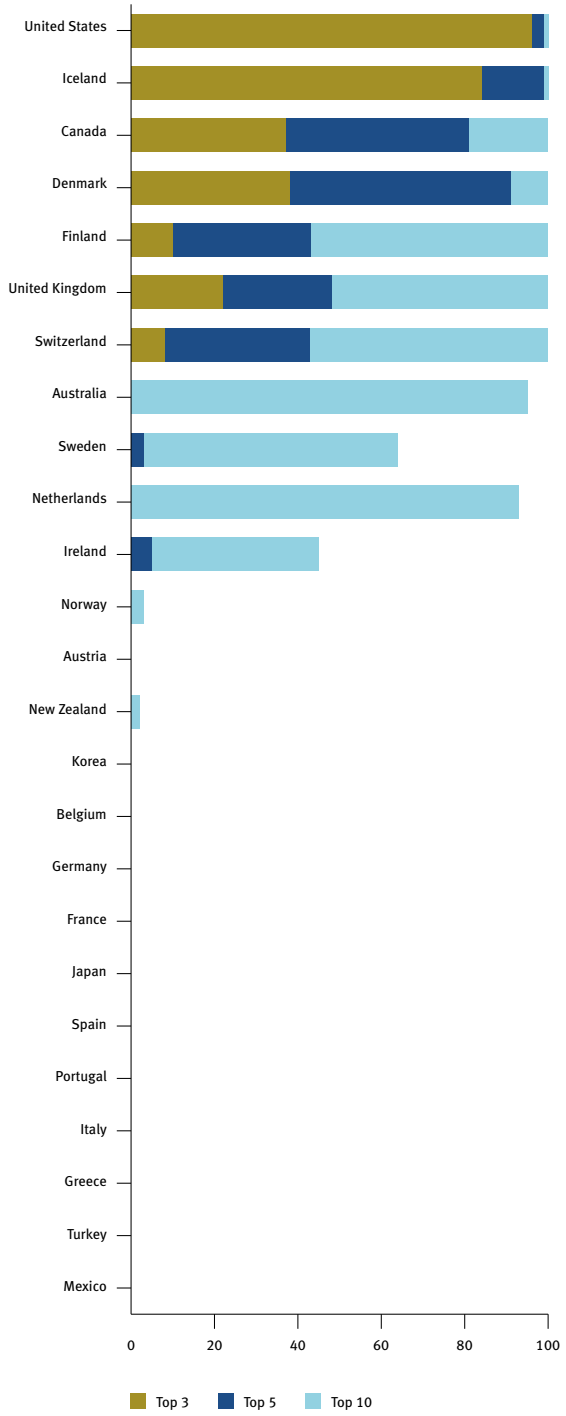
Figure 4: Robustness Analysis – Performance



Source: FORA, 2009.

In terms of innovation framework conditions, the United States and Iceland are the top-performing countries, followed by Canada, Denmark and Finland (see Figure 5).

Figure 5: Robustness Analysis – Framework Conditions



Source: FORA, 2009.

Correlation between Framework Conditions and Performance

A core assumption behind the benchmark approach is that high quality framework conditions will lead to solid performance. This is evident when country rankings on the indices for framework conditions and performance are correlated (see Figure 6). The analysis shows that framework conditions explain approximately 82 percent of the differences in performance among the 25 OECD countries. Thus, efficient policies are believed to have a positive effect on performance.

In the overall indices for framework conditions and performance, three drivers (human resources, knowledge building and knowledge sharing and ICT) are each assigned the weight 0.2, while entrepreneurship is assigned the weight 0.4. This is based on a factor analysis carried out by FORA.

2) For further reading see "Correlation between innovation drivers and changes in MFP-growth" June 2004 at www.foranet.dk

Correlation between the Nordic Innovation Monitor and MFP

The Nordic Innovation Monitor also sheds light on the relationship between innovation performance and growth in MFP. Despite the limited availability and questionable quality of data, there appears to be a relationship between MFP improvements and countries' innovation performance (see Figure 7). This relationship indicates that the Nordic Innovation Monitor can explain part of the growth which cannot be explained by traditional analyses.

The Analyses in the Nordic Innovation Monitor

Four steps are used when analysing the Nordic countries in the Nordic Innovation Monitor:

1. Ranking and Regional Analyses

Based on the selected indicators, a complete ranking of countries is carried out in terms of both performance and framework conditions. For regional analyses, the countries are grouped into five regions in accordance to cultural and geographical considerations. The Nordic region (Denmark, Finland, Iceland, Norway and Sweden) is benchmarked against the leading English-speaking countries (US, UK and Canada), Japan and Korea, other English-speaking countries (Australia, Ireland, New Zealand) and Continental Europe (Austria, Belgium, France, Germany, Italy, Netherlands, Portugal, Spain and Switzerland).

The regions' innovation capacity is determined by weighting each country's standardised value in relation to GDP. Hence, Norway will claim a relatively large share of the Nordic region, as Norway's GDP is larger compared to the other Nordic countries.

2. Best Practice

The best-performing countries are identified for each of the four drivers. Best practice is drawn from each driver by comparing the top-performing countries to other countries.

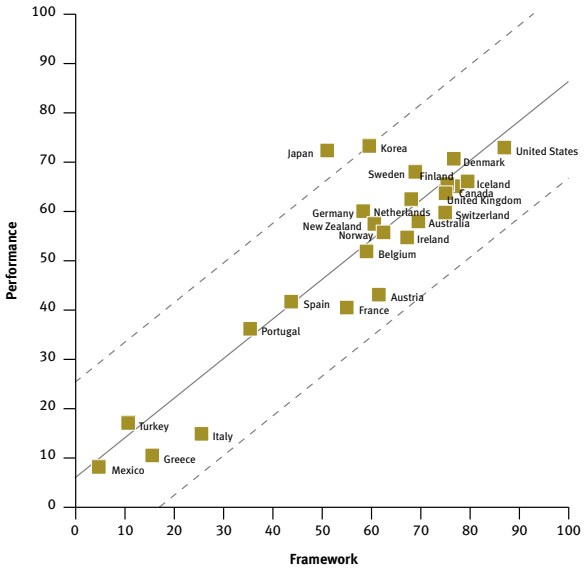
3. Peer Review

Analyses are carried out for each of the Nordic countries – Denmark, Finland, Iceland, Norway and Sweden. Individual country's framework conditions and performance are compared to each of the other Nordic countries and the top-performing country. Developments are analysed over time. The results are qualified and elaborated upon by policy experts. The analysis also covers individual country analyses in terms of the quality of macro policies and structural policies in supporting innovation efforts.

4. Policy Recommendations

Policy recommendations are presented for each country.

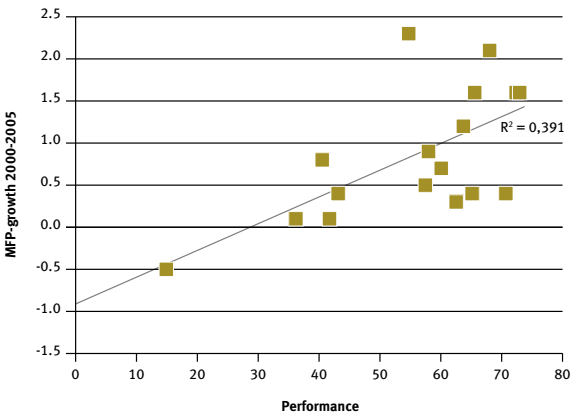
Figure 6: Correlation between Innovation Framework Conditions and Performance



Source: FORA, 2009.

Note:
a) The chart shows the correlation between the countries' overall score on innovation framework conditions and performance. R2 – the expression of how large a share of performance that can be explained by framework conditions – is 0,824.
b) The dotted lines show the 95 pct. confidence interval based on 100 000 randomly-generated indices.
c) We find that 23 out of 25 OECD countries are located within the two error bars.

Figure 7: Correlation between Performance and MFP



Source: FORA, 2009.

Note:
a) The explanatory power of the model is tested in Innovation Monitor 2007 (can be downloaded from www.foranet.dk).
b) The analysis shows that the Monitor explains a significant share of the variation in labour productivity. No other indicator system (i.e. World Bank's KEI index or EU Commission's EIS index) holds the same explanatory power when being compared to labour productivity.

Appendix B

Human Resources
The OECD Countries' Individual Ranking
in the Nordic Innovation Monitor
– Performance

Performance	Ranking 2008	Index 2008	Index 2003	Change in rank 2003-2008
Sweden	1	97.2	79.5	2
Iceland	2	88.7	65.9	5
United States	3	86.2	82.8	-1
Denmark	4	82.2	65.4	4
Finland	5	81.3	100.0	-4
Switzerland	6	79.9	68.5	-1
Belgium	7	74.4	74.8	-3
Netherlands	8	72.9	67.1	-2
Ireland	9	67.2	64.1	1
Australia	10	66.9	64.2	-1
Canada	11	66.5	64.0	0
Japan	12	64.4	49.4	4
Germany	13	63.7	51.5	0
New Zealand	14	57.7	50.3	1
Austria	15	54.8	52.8	-3
Norway	16	54.1	51.1	-2
United Kingdom	17	51.3	43.0	0
France	18	47.7	29.8	0
Korea	19	36.8	26.2	0
Spain	20	25.8	23.2	0
Greece	21	21.2	18.5	1
Turkey	22	19.8	7.7	1
Italy	23	15.2	20.4	-2
Portugal	24	10.7	0.0	1
Mexico	25	8.5	4.9	-1

Source: FORA, 2009.

Human Resources
The OECD Countries' Individual Ranking
in the Nordic Innovation Monitor
– Framework Conditions

Framework Conditions	Ranking 2008	Index 2008	Index 2003	Change in rank 2003-2008
Canada	1	90.3	90.6	1
United States	2	87.3	100.0	-1
Denmark	3	84.5	74.0	5
Switzerland	4	83.6	81.5	0
Australia	5	77.3	82.8	-2
Iceland	6	73.1	62.4	5
Sweden	7	71.9	74.9	-1
United Kingdom	8	71.0	62.6	2
Finland	9	69.7	79.2	-4
New Zealand	10	67.7	74.2	-3
Austria	11	65.7	62.1	1
Belgium	12	65.0	65.9	-3
Netherlands	13	62.7	58.2	1
Ireland	14	59.4	50.6	2
Germany	15	59.0	50.5	2
Norway	16	57.2	58.3	-3
Korea	17	56.9	52.2	-2
Japan	18	56.7	50.1	0
Portugal	19	50.2	39.8	1
France	20	48.6	48.5	-1
Spain	21	35.3	38.1	0
Italy	22	34.9	35.2	0
Greece	23	22.7	22.3	0
Turkey	24	20.3	13.6	0
Mexico	25	5.9	0.0	0

Source: FORA, 2009.

Knowledge Creation
The OECD Countries' Individual Ranking in the Nordic Innovation Monitor – Performance

Performance	Ranking 2008	Index 2008	Index 2003	Change in rank 2003-2008
Switzerland	1	100.0	91.5	1
Japan	2	98.8	98.0	-1
Sweden	3	89.0	83.6	2
Germany	4	85.3	83.1	2
Iceland	5	80.7	76.5	2
Netherlands	6	80.3	69.4	3
United States	7	78.1	85.8	-3
Denmark	8	77.5	67.7	2
Austria	9	76.4	56.7	6
Finland	10	75.5	88.2	-7
France	11	74.0	74.0	-3
Korea	12	73.1	47.0	6
Belgium	13	65.8	63.6	-2
Norway	14	64.8	44.3	5
Australia	15	58.6	61.4	-2
United Kingdom	16	50.9	62.7	-4
Canada	17	47.9	54.0	-1
Ireland	18	43.7	42.2	2
New Zealand	19	39.8	61.4	-5
Spain	20	36.7	47.4	-3
Portugal	21	31.1	0.0	4
Italy	22	25.0	32.2	-1
Turkey	23	13.7	1.8	1
Greece	24	3.2	5.7	-2
Mexico	25	1.1	3.1	-2

Source: FORA, 2009.

Knowledge Creation
The OECD Countries' Individual Ranking in the Nordic Innovation Monitor – Framework Conditions

Framework Conditions	Ranking 2008	Index 2008	Index 2003	Change in rank 2003-2008
Switzerland	1	83.1	83.0	2
Finland	2	82.9	100.0	-1
United States	3	77.6	91.0	-1
Sweden	4	75.6	81.6	1
Iceland	5	75.4	69.7	8
Canada	6	73.4	78.9	1
Denmark	7	72.4	69.9	5
Netherlands	8	71.2	82.1	-4
Belgium	9	67.7	69.0	5
Australia	10	66.7	79.8	-4
Austria	11	66.2	71.0	0
Norway	12	65.3	65.5	3
Germany	13	64.3	71.6	-3
France	14	63.1	74.3	-6
United Kingdom	15	59.6	71.7	-6
Japan	16	58.4	58.6	2
Ireland	17	56.5	61.6	0
New Zealand	18	55.5	65.5	-2
Korea	19	43.8	40.4	2
Spain	20	42.1	52.4	-1
Portugal	21	27.6	26.7	1
Turkey	22	12.4	8.7	1
Italy	23	18.5	42.0	-2
Greece	24	12.3	18.4	-1
Mexico	25	0.0	3.5	0

Source: FORA, 2009.

Information and Communication Technology The OECD Countries' Individual Ranking in the Nordic Innovation Monitor – Performance

Performance	Ranking 2008	Index 2008	Index 2003	Change in rank 2003-2008
New Zealand	1	100.0	88.3	0
Canada	2	99.7	85.9	0
Norway	3	93.9	56.0	9
Denmark	4	93.4	62.3	5
Sweden	5	93.0	69.1	3
Switzerland	6	92.1	71.3	1
Finland	7	87.3	75.7	-1
Netherlands	8	86.4	58.8	2
Iceland	9	83.3	78.6	-4
United States	10	82.7	83.2	-7
Germany	11	80.6	53.0	2
United Kingdom	12	77.8	56.3	-1
Australia	13	70.0	78.8	-9
France	14	66.8	46.7	1
Japan	15	65.6	50.6	-1
Belgium	16	63.7	46.6	0
Ireland	17	63.5	39.4	1
Austria	18	63.2	33.2	1
Korea	19	56.5	44.1	-2
Portugal	20	43.2	25.7	0
Turkey	21	31.3	17.1	1
Spain	22	31.0	14.4	1
Greece	23	28.2	19.8	-2
Italy	24	24.0	11.6	0
Mexico	25	8.3	0.0	0

Source: FORA, 2009.
Note: The standardised value on New Zealand is based on few indicators. Thus, the ranking has to be interpreted with care.

Information and Communication Technology The OECD Countries' Individual Ranking in the Nordic Innovation Monitor – Framework Conditions

Framework Conditions	Ranking 2008	Index 2008	Index 2003	Change in rank 2003-2008
Denmark	1	100.0	78.7	2
Iceland	2	96.2	76.9	2
Sweden	3	95.5	79.2	-1
Finland	4	85.7	83.5	-3
Norway	5	80.6	62.6	3
Korea	6	80.3	68.8	1
Netherlands	7	79.5	62.1	2
Switzerland	8	79.1	58.6	3
United Kingdom	9	74.9	62.1	1
United States	10	74.4	73.1	-5
Canada	11	74.1	69.4	-5
Austria	12	71.9	54.0	1
Germany	13	68.0	53.3	1
Australia	14	67.2	56.8	-2
France	15	66.9	47.2	2
Japan	16	58.4	44.4	3
Ireland	17	56.5	45.4	1
Belgium	18	56.3	47.9	-2
New Zealand	19	50.6	51.1	-4
Portugal	20	42.7	23.5	0
Spain	21	39.1	21.8	1
Italy	22	36.3	21.9	-1
Greece	23	20.3	12.1	0
Turkey	24	8.3	2.3	0
Mexico	25	1.6	0.0	0

Source: FORA, 2009.

Entrepreneurship
The OECD Countries' Individual Ranking in the Nordic Innovation Monitor – Performance

Performance	Ranking 2008	Index 2008	Index 2003	Change in rank 2003-2008
Korea	1	100.0	100.0	0
United Kingdom	2	69.3	57.3	1
Japan	3	66.5	39.5	4
United States	4	58.9	51.8	1
Spain	5	57.5	52.9	-1
Canada	6	55.8	19.7	8
Denmark	7	50.2	31.9	3
Ireland	8	49.7	51.3	-2
Portugal	9	48.0	21.9	4
New Zealand	10	44.9	81.4	0
Finland	11	41.9	33.9	-2
Netherlands	12	36.5	35.6	-4
Germany	13	35.4	16.5	4
Norway	14	33.0	25.2	-3
Sweden	15	30.5	23.9	-3
Belgium	16	27.8	19.2	-1
Switzerland	17	13.5	17.2	-1
Austria	18	10.6	0.0	3
France	19	7.0	11.4	1
Italy	20	5.1	16.0	-2
Greece	21	0.0	13.6	-2

Source: FORA, 2009.
Note: Australia, Iceland, Mexico and Turkey do not figure in the ranking because there are no data available for these countries on Entrepreneurship Performance.

Entrepreneurship
The OECD Countries' Individual Ranking in the Nordic Innovation Monitor – Framework Conditions

Framework Conditions	Ranking 2008	Index 2008	Index 2003	Change in rank 2003-2008
United States	1	97.7	100.0	0
United Kingdom	2	84.8	90.8	0
Ireland	3	81.9	80.5	0
Iceland	4	76.4	65.7	3
Canada	5	73.9	73.4	-1
Finland	6	69.3	67.6	0
Australia	7	68.2	61.8	1
New Zealand	8	64.5	69.1	-3
Switzerland	9	64.4	46.8	6
Netherlands	10	63.5	52.4	0
Denmark	11	63.3	47.5	3
Korea	12	58.4	51.2	0
Norway	13	54.5	44.3	3
Belgium	14	53.0	52.4	-3
Austria	15	51.9	38.7	2
Spain	16	51.0	55.9	-7
Sweden	17	50.7	47.9	-4
Germany	18	50.0	37.8	0
France	19	48.2	32.2	0
Japan	20	40.8	17.7	2
Portugal	21	28.2	22.0	0
Italy	22	18.9	26.1	-2
Greece	23	11.2	13.6	0
Mexico	24	8.0	10.3	0
Turkey	25	6.1	0.0	0

Source: FORA, 2009.

Appendix C

Human Resources

Performance

Knowledge Workers

Business Enterprise researchers per 10.000 total employment in industry				
Country	Actual Values	Year	Actual Values	Year
Australia	2.46	2000	3.20	2005
Austria	3.82	1998	6.11	2006
Belgium	6.43	2001	6.07	2006
Canada	5.45	1999	6.50	2004
Denmark	5.35	2001	9.50	2006
Finland	13.37	2001	14.00	2006
France	5.05	2000	6.62	2005
Germany	5.65	2001	6.21	2006
Greece	0.97	2000	1.56	2006
Iceland				
Ireland	4.52	2001	4.72	2006
Italy	1.58	2001	1.64	2006
Japan	10.15	2000	12.83	2005
Korea	5.70	2001	8.61	2006
Mexico	0.09	1997	0.78	2005
Netherlands	3.53	2000	4.12	2005
New Zealand	1.69	1995	3.13	2005
Norway	6.60	1997	7.33	2005
Portugal	0.61	2000	1.03	2005
Spain	1.73	2000	2.49	2005
Sweden	9.00	1999	14.30	2006
Switzerland	4.19	1996	4.18	2004
Turkey	0.20	2000	0.50	2005
United Kingdom	4.10	2000	4.46	2005
United States	10.94	2000	11.57	2005

Source: OECD: Main Science and Technology Indicators (MSTI).

Share of professionals Share of physical, mathematical, engineering science, life science, health, teaching and other professionals				
Country	Actual Values	Year	Actual Values	Year
Australia	0.20	2001	0.22	2006
Austria	0.11	2001	0.11	2006
Belgium	0.22	2001	0.24	2006
Canada	0.18	2001	0.19	2006
Denmark	0.16	2001	0.17	2006
Finland	0.21	2001	0.20	2006
France	0.08	2003	0.14	2005
Germany	0.14	2001	0.16	2006
Greece	0.13	2001	0.16	2006
Iceland	0.15	2000	0.19	2006
Ireland	0.19	2001	0.20	2006
Italy	0.11	2001	0.11	2006
Japan	0.15	2004	0.15	2006
Korea	0.07	2001	0.09	2006
Mexico	0.06	2001	0.07	2006
Netherlands	0.20	1998	0.21	2005
New Zealand	0.16	2001	0.19	2006
Norway	0.13	2001	0.12	2006
Portugal	0.08	2001	0.09	2006
Spain	0.13	2001	0.13	2006
Sweden	0.18	2001	0.20	2006
Switzerland	0.17	2001	0.19	2006
Turkey	0.06	2001	0.07	2006
United Kingdom	0.13	2000	0.15	2005
United States	0.24	2003	0.24	2006

Source: ILO: laborstat yearly data, total employment by occupation.

Organisation and Management

Delegation of authority within companies
Willingness to delegate authority (1-7)

Country	Actual Values	Year	Actual Values	Year
Australia	5.1	2003	5.1	2008
Austria	5.2	2003	5.4	2008
Belgium	5.2	2003	5.2	2008
Canada	5.3	2003	5.3	2008
Denmark	6.1	2003	6.0	2008
Finland	5.9	2003	5.5	2008
France	4.0	2003	4.6	2008
Germany	5.2	2003	5.4	2008
Greece	2.9	2003	3.8	2008
Iceland	5.3	2004	5.4	2008
Ireland	4.8	2003	4.8	2008
Italy	3.8	2003	3.4	2008
Japan	4.5	2003	4.9	2008
Korea	4.1	2003	4.7	2008
Mexico	3.4	2003	4.2	2008
Netherlands	5.7	2003	5.8	2008
New Zealand	4.9	2003	5.3	2008
Norway	5.5	2003	5.7	2008
Portugal	3.3	2003	4.5	2008
Spain	4.1	2003	4.5	2008
Sweden	5.9	2003	6.2	2008
Switzerland	5.7	2003	5.6	2008
Turkey	2.4	2003	3.6	2008
United Kingdom	5.6	2003	5.0	2008
United States	5.7	2003	5.5	2008

Source: World Economic Worum (WEF): The Global Competitiveness Report.

Adaptability of companies to market changes
Adaptability of companies to market changes is high (1-10)

Country	Actual Values	Year	Actual Values	Year
Australia	7.25	2003	6.68	2008
Austria	6.95	2003	6.76	2008
Belgium	6.22	2003	5.79	2008
Canada	6.77	2003	6.49	2008
Denmark	7.24	2003	7.85	2008
Finland	7.46	2003	6.04	2008
France	5.37	2003	4.83	2008
Germany	5.40	2003	6.40	2008
Greece	5.24	2003	4.51	2008
Iceland	6.88	2002	8.23	2006
Ireland	7.22	2003	6.71	2008
Italy	5.96	2003	6.02	2008
Japan	4.42	2003	5.93	2008
Korea	5.47	2003	5.49	2008
Mexico	4.67	2003	4.23	2008
Netherlands	6.52	2003	6.12	2008
New Zealand	7.21	2003	6.09	2008
Norway	5.75	2003	6.39	2008
Portugal	4.00	2003	4.35	2008
Spain	5.54	2003	4.99	2008
Sweden	6.95	2003	6.83	2008
Switzerland	6.33	2003	6.93	2008
Turkey	6.44	2003	6.57	2008
United Kingdom	5.68	2003	5.82	2008
United States	7.59	2003	6.99	2008

Source: IMD: World Competitiveness Report.

Worker Motivation
Worker motivation is high in your economy (1-7)

Country	Actual Values	Year	Actual Values	Year
Australia	6.86	2003	6.63	2008
Austria	7.64	2003	7.47	2008
Belgium	6.79	2003	6.25	2008
Canada	6.73	2003	6.15	2008
Denmark	7.32	2003	8.00	2008
Finland	7.22	2003	6.28	2008
France	4.90	2003	5.23	2008
Germany	6.10	2003	6.70	2008
Greece	4.51	2003	3.97	2008
Iceland	7.35	2002	7.73	2006
Ireland	7.15	2003	6.63	2008
Italy	5.29	2003	4.94	2008
Japan	6.48	2003	6.74	2008
Korea	5.06	2003	5.70	2008
Mexico	4.76	2003	5.32	2008
Netherlands	6.77	2003	6.71	2008
New Zealand	6.53	2003	6.53	2008
Norway	6.32	2003	7.09	2008
Portugal	4.32	2003	4.43	2008
Spain	5.00	2003	4.68	2008
Sweden	6.10	2003	6.97	2008
Switzerland	7.70	2003	7.88	2008
Turkey	4.94	2003	5.90	2008
United Kingdom	5.76	2003	5.84	2008
United States	6.75	2003	6.30	2008

Source: IMD: World Competitiveness Report.

Strategic Management

International experience of senior management
International experience of senior managers is generally significant (0-10)

Country	Actual Values	Year	Actual Values	Year
Australia	5.36	2003	5.75	2008
Austria	5.80	2003	6.00	2008
Belgium	6.76	2003	6.32	2008
Canada	5.15	2003	5.32	2008
Denmark	5.41	2003	5.96	2008
Finland	6.57	2003	5.68	2008
France	4.88	2003	5.50	2008
Germany	5.35	2003	6.37	2008
Greece	4.62	2003	4.78	2008
Iceland	6.60	2002	6.93	2006
Ireland	6.11	2003	6.39	2008
Italy	4.37	2003	3.94	2008
Japan	4.06	2003	4.32	2008
Korea	6.37	2003	4.32	2008
Mexico	4.91	2003	4.75	2008
Netherlands	6.61	2003	6.95	2008
New Zealand	4.30	2003	4.68	2008
Norway	4.21	2003	4.11	2008
Portugal	3.65	2003	3.92	2008
Spain	4.00	2003	4.38	2008
Sweden	6.88	2003	6.55	2008
Switzerland	7.06	2003	7.94	2008
Turkey	5.02	2003	5.70	2008
United Kingdom	4.51	2003	5.78	2008
United States	4.86	2003	5.13	2008

Source: IMD: World Competitiveness Report.

Ethical practices
Ethical practices are implemented in companies (0-10)

Country	Actual Values	Year	Actual Values	Year
Australia	7.79	2003	7.56	2008
Austria	7.57	2003	6.80	2008
Belgium	7.03	2003	7.05	2008
Canada	7.66	2003	7.62	2008
Denmark	7.58	2003	7.64	2008
Finland	8.32	2003	6.60	2008
France	6.65	2003	6.94	2008
Germany	7.31	2003	7.14	2008
Greece	5.21	2003	4.39	2008
Iceland				
Ireland	6.74	2003	7.14	2008
Italy	5.18	2003	4.72	2008
Japan	5.94	2003	6.52	2008
Korea	4.33	2003	5.78	2008
Mexico	5.02	2003	4.80	2008
Netherlands	7.26	2003	7.54	2008
New Zealand	8.11	2003	8.00	2008
Norway	7.75	2003	7.43	2008
Portugal	4.81	2003	5.10	2008
Spain	5.36	2003	5.44	2008
Sweden	7.63	2003	7.82	2008
Switzerland	7.24	2003	8.06	2008
Turkey	5.04	2003	5.30	2008
United Kingdom	6.88	2003	7.14	2008
United States	6.45	2003	7.25	2008

Source: IMD: World Competitiveness Report.

Framework Conditions

Education Expenditure

Total Expenditure on education as a percentage of GDP				
Country	Actual Values	Year	Actual Values	Year
Australia	5.97	2001	5.81	2005
Austria	5.78	2001	5.51	2005
Belgium	6.36	2001	6.03	2005
Canada	6.14	2001	6.20	2005
Denmark	7.10	2001	7.38	2005
Finland	5.84	2001	5.98	2005
France	5.98	2001	6.01	2005
Germany	5.26	2001	5.10	2005
Greece	4.06	2001	4.21	2005
Iceland	6.70	2001	7.96	2005
Ireland	4.49	2001	4.58	2005
Italy	5.31	2001	4.71	2005
Japan	4.63	2001	4.92	2005
Korea	8.20	2001	7.19	2005
Mexico	5.87	2001	6.54	2005
Netherlands	4.90	2001	5.02	2005
New Zealand	6.77	2002	6.68	2005
Norway	6.37	2001	5.71	2005
Portugal	5.85	2001	5.72	2005
Spain	4.89	2001	4.63	2005
Sweden	6.46	2001	6.38	2005
Switzerland	6.23	2002	6.11	2005
Turkey	3.51	2001	4.12	2004
United Kingdom	5.48	2001	6.25	2005
United States	7.34	2001	7.13	2005

Source: Education at a Glance: OECD Indicators.

Expenditure on education per student as a percentage of GDP per capita				
Country	Actual Values	Year	Actual Values	Year
Australia	26.41	2001	24.54	2005
Austria	29.82	2001	30.51	2005
Belgium	27.86	2001	25.04	2005
Canada	28.42	2003	28.42	2003
Denmark	31.05	2001	30.06	2005
Finland	25.63	2001	25.31	2005
France	26.56	2001	27.33	2005
Germany	26.31	2001	25.81	2005
Greece	21.62	2001	22.34	2005
Iceland	24.51	2001	25.11	2005
Ireland	17.75	2001	18.67	2005
Italy	30.89	2001	27.17	2005
Japan	26.35	2001	27.66	2005
Korea	31.64	2001	29.10	2005
Mexico	19.60	2001	21.28	2005
Netherlands	23.45	2001	23.46	2005
New Zealand	25.32	2003	25.49	2005
Norway	24.61	2001	23.06	2005
Portugal	28.43	2001	31.04	2005
Spain	25.23	2001	26.16	2005
Sweden	28.29	2001	27.94	2005
Switzerland	29.28	2001	34.35	2005
Turkey	18.72	2003	21.17	2004
United Kingdom	22.36	2001	24.51	2005
United States	30.90	2001	30.69	2005

Source: Education at a Glance: OECD Indicators.

Expenditure on primary education per student as a percentage to GDP per capita				
Country	Actual Values	Year	Actual Values	Year
Australia	18.93	2001	17.63	2005
Austria	23.16	2001	24.21	2005
Belgium	19.64	2001	20.73	2005
Canada				
Denmark	25.91	2001	25.32	2005
Finland	17.87	2001	18.24	2005
France	17.81	2001	18.10	2005
Germany	16.65	2001	16.44	2005
Greece	19.38	2001	20.20	2005
Iceland	22.00	2001	26.02	2005
Ireland	12.55	2001	15.06	2005
Italy	26.73	2001	24.63	2005
Japan	21.67	2001	22.26	2005
Korea	23.33	2001	21.98	2005
Mexico	14.83	2001	16.93	2005
Netherlands	16.93	2001	18.05	2005
New Zealand	20.35	2002	19.21	2005
Norway	20.24	2001	18.90	2005
Portugal	23.34	2001	24.39	2005
Spain	19.52	2001	20.18	2005
Sweden	23.40	2001	22.99	2005
Switzerland	22.94	2001	23.86	2005
Turkey	12.85	2003	15.53	2004
United Kingdom	16.53	2001	20.14	2005
United States	21.49	2001	21.97	2005

Source: Education at a Glance: OECD Indicators.

Expenditure on secondary education per student as a percentage to GDP per capita				
Country	Actual Values	Year	Actual Values	Year
Australia	27.13	2001	24.74	2005
Austria	30.18	2001	28.59	2005
Belgium	29.14	2001	24.10	2005
Canada	21.32	2003	23.80	2005
Denmark	27.76	2001	27.98	2005
Finland	24.81	2001	24.04	2005
France	30.23	2001	30.11	2005
Germany	26.01	2001	25.04	2005
Greece	22.14	2001	33.07	2005
Iceland	25.07	2001	23.64	2005
Ireland	17.59	2001	19.71	2005
Italy	32.54	2001	27.56	2005
Japan	24.53	2001	26.11	2005
Korea	32.41	2001	31.14	2005
Mexico	20.93	2001	19.29	2005
Netherlands	22.30	2001	22.29	2005
New Zealand	25.57	2002	25.23	2005
Norway	24.71	2001	23.09	2005
Portugal	33.36	2001	32.42	2005
Spain	25.49	2001	26.44	2005
Sweden	24.10	2001	25.02	2005
Switzerland	36.34	2001	36.23	2005
Turkey	21.12	2003	25.06	2004
United Kingdom	22.21	2001	22.69	2005
United States	24.96	2001	24.93	2005

Source: Education at a Glance: OECD Indicators.

Expenditure on higher education per student as a percentage to GDP per capita				
Country	Actual Values	Year	Actual Values	Year
Australia	47.55	2001	42.90	2005
Austria	39.74	2001	43.32	2005
Belgium	42.77	2001	37.29	2005
Canada	65.76	2003	65.76	2003
Denmark	48.87	2001	44.49	2005
Finland	41.68	2001	40.32	2005
France	32.95	2001	37.09	2005
Germany	41.27	2001	40.81	2005
Greece	25.15	2001	24.07	2005
Iceland	26.49	2001	26.63	2005
Ireland	33.54	2001	27.50	2005
Italy	32.89	2001	28.92	2005
Japan	41.91	2001	40.69	2005
Korea	41.58	2001	35.64	2005
Mexico	47.45	2001	56.66	2005
Netherlands	45.19	2001	39.98	2005
New Zealand	37.50	2003	41.24	2005
Norway	36.05	2001	32.66	2005
Portugal	29.03	2001	44.01	2005
Spain	34.92	2001	37.00	2005
Sweden	56.46	2001	48.66	2005
Switzerland	67.35	2001	61.22	2005
Turkey				
United Kingdom	40.25	2001	42.77	2005
United States	63.20	2001	58.48	2005

Source: Education at a Glance: OECD Indicators.

Incentives

Gains in earnings of higher education				
Country	Actual Values	Year	Actual Values	Year
Australia	133	2001	131	2005
Austria	152	2005	157	2006
Belgium	132	2002	133	2005
Canada	143	2001	138	2005
Denmark	124	2001	125	2005
Finland	150	2001	149	2004
France	150	2002	149	2006
Germany	146	2002	164	2006
Greece				
Iceland				
Ireland	149	2000	169	2004
Italy	138	2000	165	2004
Japan				
Korea	141	2003	141	2003
Mexico				
Netherlands	148	2002	148	2002
New Zealand	133	2001	115	2006
Norway	137	2002	129	2005
Portugal	178	1999	177	2005
Spain	129	2001	132	2004
Sweden	135	2001	126	2005
Switzerland	158	2003	156	2006
Turkey	141	2004	149	2005
United Kingdom	159	2001	159	2006
United States	186	2002	176	2006

Source: Education at a Glance: OECD Indicators.

Public subsidies for students Subsidies for education to private entities as a percentage of GDP				
Country	Actual Values	Year	Actual Values	Year
Australia	0.39	2001	0.37	2005
Austria	0.23	2001	0.28	2005
Belgium	0.24	2001	0.20	2005
Canada	0.38	2003	0.26	2005
Denmark	0.95	2001	0.73	2005
Finland	0.39	2001	0.34	2005
France	0.09	2001	0.09	2005
Germany	0.17	2001	0.22	2005
Greece	0.08	2001	0.02	2005
Iceland	0.26	2001	0.34	2005
Ireland	0.15	2001	0.16	2005
Italy	0.10	2001	0.13	2005
Japan	0.08	2001	0.13	2005
Korea	0.03	2001	0.02	2005
Mexico	0.04	2001	0.06	2005
Netherlands	0.31	2001	0.38	2005
New Zealand	0.84	2001	0.63	2005
Norway	0.57	2001	0.97	2005
Portugal	0.07	2001	0.09	2005
Spain	0.08	2001	0.08	2005
Sweden	0.62	2001	0.52	2005
Switzerland	0.03	2001	0.07	2005
Turkey	0.16	2001	0.22	2004
United Kingdom	0.04	2001	0.31	2005
United States	0.55	2001	0.31	2005

Source: Education at a Glance: OECD Indicators.

Basic Education

Share of young people with secondary education
Percentage of the 25-34 year olds that has attained at least upper secondary education

Country	Actual Values	Year	Actual Values	Year
Australia	72.52	2002	80.10	2006
Austria	84.69	2002	87.27	2006
Belgium	77.04	2002	81.65	2006
Canada	89.14	2002	91.09	2006
Denmark	85.20	2002	88.39	2006
Finland	88.26	2002	89.59	2006
France	79.06	2002	82.25	2006
Germany	84.96	2002	83.99	2006
Greece	71.50	2002	75.18	2006
Iceland	64.06	2002	67.32	2006
Ireland	77.03	2002	82.35	2006
Italy	59.71	2002	67.08	2006
Japan	93.95	2002	94.00	2004
Korea	95.36	2002	97.39	2006
Mexico	21.42	2002	38.58	2006
Netherlands	75.77	2002	81.47	2006
New Zealand	81.90	2002	77.95	2006
Norway	94.51	2002	83.25	2006
Portugal	34.65	2002	44.12	2006
Spain	58.47	2002	64.28	2006
Sweden	91.43	2002	90.72	2006
Switzerland	87.98	2002	88.29	2006
Turkey	30.91	2002	37.25	2006
United Kingdom	69.76	2002	76.47	2006
United States	86.88	2002	86.97	2006

Source: Education at a Glance: OECD Indicators.

Reading literacy of 15-year olds

Country	Actual Values	Year	Actual Values	Year
Australia	525	2003	513	2006
Austria	491	2003	490	2006
Belgium	507	2003	501	2006
Canada	528	2003	527	2006
Denmark	492	2003	494	2006
Finland	543	2003	547	2006
France	496	2003	488	2006
Germany	491	2003	495	2006
Greece	472	2003	460	2006
Iceland	492	2003	484	2006
Ireland	515	2003	517	2006
Italy	476	2003	469	2006
Japan	498	2003	498	2006
Korea	534	2003	556	2006
Mexico	400	2003	410	2006
Netherlands	513	2003	507	2006
New Zealand	522	2003	521	2006
Norway	500	2003	484	2006
Portugal	478	2003	472	2006
Spain	481	2003	461	2006
Sweden	514	2003	507	2006
Switzerland	499	2003	499	2006
Turkey	441	2003	447	2006
United Kingdom	495	2006	495	2006
United States	495	2003	495	2003

Source: OECD: Learning for Tomorrow's World First Results from PISA.

Mathematics literacy of 15-year olds				
Country	Actual Values	Year	Actual Values	Year
Australia	524	2003	520	2006
Austria	506	2003	505	2006
Belgium	529	2003	520	2006
Canada	532	2003	527	2006
Denmark	514	2003	513	2006
Finland	544	2003	548	2006
France	511	2003	496	2006
Germany	503	2003	504	2006
Greece	445	2003	459	2006
Iceland	515	2003	506	2006
Ireland	503	2003	501	2006
Italy	466	2003	462	2006
Japan	534	2003	523	2006
Korea	542	2003	547	2006
Mexico	385	2003	406	2006
Netherlands	538	2003	531	2006
New Zealand	523	2003	522	2006
Norway	495	2003	490	2006
Portugal	466	2003	466	2006
Spain	485	2003	480	2006
Sweden	509	2003	502	2006
Switzerland	527	2003	530	2006
Turkey	423	2003	424	2006
United Kingdom	495	2006	495	2006
United States	483	2003	474	2006

Source: OECD: Learning for Tomorrow's World First Results from PISA.

Scientific literacy of 15-year olds				
Country	Actual Values	Year	Actual Values	Year
Australia	525	2003	527	2006
Austria	491	2003	511	2006
Belgium	509	2003	510	2006
Canada	519	2003	534	2006
Denmark	475	2003	496	2006
Finland	548	2003	563	2006
France	511	2003	495	2006
Germany	502	2003	516	2006
Greece	481	2003	473	2006
Iceland	495	2003	491	2006
Ireland	505	2003	508	2006
Italy	486	2003	475	2006
Japan	548	2003	531	2006
Korea	538	2003	522	2006
Mexico	405	2003	410	2006
Netherlands	524	2003	525	2006
New Zealand	521	2003	530	2006
Norway	484	2003	487	2006
Portugal	468	2003	474	2006
Spain	487	2003	488	2006
Sweden	506	2003	503	2006
Switzerland	513	2003	512	2006
Turkey	434	2003	424	2006
United Kingdom	515	2006	515	2006
United States	491	2003	489	2006

Source: OECD: Learning for Tomorrow's World First Results from PISA.

Higher Education

Share of population with higher education
Percentage of the population of 25 to 64-year-olds that has attained higher education

Country	Actual Values	Year	Actual Values	Year
Australia	30.76	2002	33.02	2006
Austria	14.46	2002	17.61	2006
Belgium	28.13	2002	31.75	2006
Canada	42.63	2002	46.96	2006
Denmark	27.42	2002	34.72	2006
Finland	32.59	2002	35.14	2006
France	23.98	2002	26.18	2006
Germany	23.39	2002	23.95	2006
Greece	18.34	2002	22.17	2006
Iceland	26.26	2002	29.50	2006
Ireland	25.40	2002	30.81	2006
Italy	10.37	2002	12.87	2006
Japan	36.33	2002	40.48	2006
Korea	26.03	2002	32.93	2006
Mexico	5.78	2002	15.35	2006
Netherlands	24.44	2002	30.19	2006
New Zealand	29.83	2002	38.32	2006
Norway	30.98	2002	32.93	2006
Portugal	9.29	2002	13.48	2006
Spain	24.38	2002	28.48	2006
Sweden	32.57	2002	30.53	2006
Switzerland	25.24	2002	29.85	2006
Turkey	9.26	2002	10.40	2006
United Kingdom	26.86	2002	30.47	2006
United States	38.13	2002	39.49	2006

Source: Education at a Glance: OECD Indicators.

Share of young people with higher education
Percentage of the 25-34-year-olds that has attained higher education

Country	Actual Values	Year	Actual Values	Year
Australia	35.80	2002	38.80	2006
Austria	14.78	2002	19.16	2006
Belgium	37.64	2002	41.86	2006
Canada	51.22	2002	54.78	2006
Denmark	29.20	2002	40.80	2006
Finland	39.24	2002	38.45	2006
France	36.05	2002	41.42	2006
Germany	21.74	2002	21.99	2006
Greece	24.08	2002	26.66	2006
Iceland	29.06	2002	31.50	2006
Ireland	36.31	2002	42.22	2006
Italy	12.46	2002	17.28	2006
Japan	50.33	2002	54.07	2006
Korea	41.22	2002	52.96	2006
Mexico	11.09	2002	18.56	2006
Netherlands	27.68	2002	35.96	2006
New Zealand	29.32	2002	43.61	2006
Norway	39.72	2002	41.54	2006
Portugal	15.04	2002	20.04	2006
Spain	36.70	2002	39.20	2006
Sweden	39.17	2002	39.13	2006
Switzerland	26.46	2002	32.23	2006
Turkey	10.64	2002	12.84	2006
United Kingdom	31.21	2002	36.75	2006
United States	39.34	2002	39.24	2006

Source: Education at a Glance: OECD Indicators.

Share of population with a phD				
Country	Actual Values	Year	Actual Values	Year
Australia	1.35	2002	1.79	2006
Austria	1.70	2002	1.88	2006
Belgium	1.10	2002	1.29	2006
Canada	0.80	2004	0.93	2006
Denmark	0.90	2002	1.20	2006
Finland	1.90	2002	2.12	2006
France	1.44	2002	1.23	2006
Germany	1.98	2002	2.32	2006
Greece	0.70	2002	0.90	2006
Iceland	0.12	2002	0.35	2006
Ireland	0.80	2002	1.31	2006
Italy	0.46	2002	1.20	2006
Japan	0.69	2002	0.97	2006
Korea	0.87	2002	1.04	2006
Mexico	0.10	2002	0.16	2006
Netherlands	1.30	2002	1.51	2006
New Zealand	0.87	2002	1.11	2006
Norway	1.10	2002	1.30	2006
Portugal	2.36	2003	3.32	2006
Spain	1.00	2002	1.01	2006
Sweden	2.81	2002	2.18	2006
Switzerland	2.55	2002	3.06	2006
Turkey	0.25	2003	0.21	2006
United Kingdom	1.60	2002	2.17	2006
United States	1.29	2002	1.41	2006

Source: Education at a Glance: OECD Indicators.

Entry rates to higher education				
Country	Actual Values	Year	Actual Values	Year
Australia	64.58	2001	84.02	2006
Austria	33.90	2001	40.03	2006
Belgium	32.33	2001	34.86	2006
Canada				
Denmark	44.30	2001	58.87	2006
Finland	71.99	2001	76.30	2006
France	36.55	2001	38.53	2003
Germany	32.40	2001	35.33	2006
Greece	33.20	2004	49.18	2006
Iceland	72.01	2002	78.31	2006
Ireland	37.90	2001	40.15	2006
Italy	43.90	2001	55.07	2006
Japan	41.00	2001	45.13	2006
Korea	48.64	2001	58.91	2006
Mexico	26.00	2001	31.07	2006
Netherlands	54.16	2001	58.06	2006
New Zealand	75.78	2001	71.77	2006
Norway	61.94	2001	67.28	2006
Portugal	52.88	2006	52.88	2006
Spain	47.90	2001	43.31	2006
Sweden	69.28	2001	76.04	2006
Switzerland	33.27	2001	37.76	2006
Turkey	20.28	2001	30.97	2006
United Kingdom	45.00	2001	57.24	2006
United States	42.32	2001	64.08	2006

Source: Education at a Glance: OECD Indicators.

Survival rate in higher education				
Country	Actual Values	Year	Actual Values	Year
Australia	69.00	2001	71.62	2005
Austria	59.00	2001	71.00	2005
Belgium	74.19	2001	76.00	2005
Canada	75.20	2005	75.20	2005
Denmark	76.67	2001	80.53	2005
Finland	75.29	2001	72.00	2005
France	65.50	2001	64.00	2005
Germany	72.53	2001	76.90	2005
Greece	79.32	2004	79.32	2004
Iceland	66.00	2005	66.00	2005
Ireland	67.40	2001	83.49	2004
Italy	46.22	2001	45.30	2005
Japan	89.97	2001	91.31	2005
Korea	76.54	2001	83.10	2004
Mexico	74.95	2001	60.56	2005
Netherlands	63.17	2001	71.00	2005
New Zealand	54.38	2004	58.00	2005
Norway	67.00	2005	67.00	2005
Portugal	67.64	2004	73.00	2005
Spain	75.50	2001	73.93	2004
Sweden	66.50	2001	69.00	2005
Switzerland	70.00	2005	70.00	2005
Turkey	82.50	2001	73.83	2004
United Kingdom	83.00	2001	79.39	2005
United States	64.16	2001	56.00	2005

Source: Education at a Glance: OECD Indicators.

Unemployment rate for highly educated				
Country	Actual Values	Year	Actual Values	Year
Australia	2.17	2001	2.10	2006
Austria	2.37	2001	1.90	2006
Belgium	2.41	2001	2.19	2006
Canada	1.52	2001	1.54	2006
Denmark	1.24	2001	1.23	2006
Finland	2.08	2001	2.10	2006
France	1.74	2001	1.80	2006
Germany	1.80	2001	2.04	2006
Greece	1.53	2001	1.45	2006
Iceland				
Ireland	2.28	2001	1.99	2006
Italy	1.70	2001	1.40	2006
Japan	1.62	2001	1.40	2006
Korea	1.13	2001	1.21	2006
Mexico	1.28	2001	1.24	2006
Netherlands	1.89	2001	1.68	2006
New Zealand	1.64	2001	1.57	2006
Norway	2.14	2001	1.95	2006
Portugal	1.45	2001	1.41	2006
Spain	1.50	2001	1.56	2006
Sweden	1.85	2001	1.66	2006
Switzerland	2.04	2001	1.79	2006
Turkey	1.77	2001	1.44	2006
United Kingdom	2.47	2001	2.45	2006
United States	2.29	2001	1.82	2006

Source: Education at a Glance: OECD Indicators.

University-industry research collaboration
In its R&D activity, business collaboration with local universities (1-7)

Country	Actual Values	Year	Actual Values	Year
Australia	4.40	2003	4.80	2008
Austria	4.60	2003	5.00	2008
Belgium	5.20	2003	5.20	2008
Canada	4.90	2003	5.00	2008
Denmark	4.60	2003	5.30	2008
Finland	5.90	2003	5.50	2008
France	3.80	2003	3.90	2008
Germany	5.10	2003	5.40	2008
Greece	3.70	2003	2.90	2008
Iceland	4.30	2003	5.00	2008
Ireland	5.20	2003	4.90	2008
Italy	3.40	2003	3.10	2008
Japan	4.10	2003	4.60	2008
Korea	4.30	2003	5.10	2008
Mexico	3.20	2003	3.00	2008
Netherlands	4.80	2003	5.10	2008
New Zealand	4.10	2003	4.30	2008
Norway	4.10	2003	4.90	2008
Portugal	3.40	2003	3.60	2008
Spain	3.90	2003	3.60	2008
Sweden	5.40	2003	5.60	2008
Switzerland	4.90	2003	5.60	2008
Turkey	2.40	2003	3.40	2008
United Kingdom	4.90	2003	5.10	2008
United States	5.60	2003	5.80	2008

Source: World Economic Forum (WEF): The Global Competitiveness Report

Lifelong Learning

Participation in lifelong learning Number of persons between 25 and 64 involved in lifelong learning				
Country	**Actual Values**	**Year**	**Actual Values**	**Year**
Australia				
Austria	8.20	2001	13.10	2006
Belgium	7.30	2001	7.50	2006
Canada				
Denmark	17.80	2001	29.20	2006
Finland	19.30	2001	23.10	2006
France	2.70	2001	7.50	2006
Germany	5.20	2001	7.50	2006
Greece	1.40	2001	1.90	2006
Iceland	23.50	2001	25.70	2006
Ireland	5.20	1997	7.50	2006
Italy	5.10	2001	6.10	2006
Japan				
Korea				
Mexico				
Netherlands	16.30	2001	15.60	2006
New Zealand				
Norway	14.20	2001	18.70	2006
Portugal	3.30	2001	3.80	2006
Spain	4.90	2001	10.40	2006
Sweden	17.50	2001	32.10	2006
Switzerland	36.00	2001	22.20	2006
Turkey	2.00	2005	2.00	2006
United Kingdom	21.70	2001	26.60	2006
United States				

Source: European Innovation Scoreboard.

Course hours per participant				
Country	**Actual Values**	**Year**	**Actual Values**	**Year**
Australia				
Austria	56.88	2003	56.88	2003
Belgium	71.38	2003	71.38	2003
Canada	99.94	2003	99.94	2003
Denmark	56.00	2003	56.00	2003
Finland	43.86	2003	43.86	2003
France	87.80	2003	87.80	2003
Germany	80.08	2003	80.08	2003
Greece	103.42	2003	103.42	2003
Iceland				
Ireland	34.56	2003	34.56	2003
Italy	49.66	2003	49.66	2003
Japan				
Korea				
Mexico				
Netherlands				
New Zealand				
Norway				
Portugal	95.25	2003	95.25	2003
Spain	94.28	2003	94.28	2003
Sweden	38.48	2003	38.48	2003
Switzerland	52.84	2003	52.84	2003
Turkey				
United Kingdom	27.60	2003	27.60	2003
United States	32.91	2003	32.91	2003

Source: Education at a Glance: OECD Indicators.

Availability of specialized jobrelated education
Local availability of specialized research and training services (1-7)

Country	Actual Values	Year	Actual Values	Year
Australia	5.70	2003	5.30	2008
Austria	5.60	2003	5.20	2008
Belgium	5.20	2003	5.60	2008
Canada	5.20	2003	5.60	2008
Denmark	5.40	2003	5.80	2008
Finland	6.10	2003	5.80	2008
France	6.00	2003	5.70	2008
Germany	6.00	2003	5.80	2008
Greece	3.90	2003	3.70	2008
Iceland	4.70	2004	5.10	2008
Ireland	5.10	2003	4.90	2008
Italy	4.90	2003	4.60	2008
Japan	5.70	2003	5.50	2008
Korea	4.50	2003	5.00	2008
Mexico	4.00	2003	4.10	2008
Netherlands	5.60	2003	5.80	2008
New Zealand	4.80	2003	4.90	2008
Norway	5.00	2003	5.10	2008
Portugal	4.30	2004	4.70	2008
Spain	5.30	2003	4.50	2008
Sweden	5.70	2003	5.70	2008
Switzerland	5.90	2003	6.00	2008
Turkey	3.70	2003	3.90	2008
United Kingdom	6.00	2003	5.70	2008
United States	6.50	2003	6.10	2008

Source: World Economic Forum (WEF): The Global Competitiveness Report.

Conditions for Organisation

Adaptability of labour force when faced with new challenges
Flexibility and adaptability of people in your economy are high when faced with new challenges (1-10)

Country	Actual Values	Year	Actual Values	Year
Australia	7.82	2003	7.66	2008
Austria	6.37	2003	5.87	2008
Belgium	6.36	2003	6.21	2008
Canada	7.73	2003	7.13	2008
Denmark	6.36	2003	7.49	2008
Finland	7.62	2003	5.84	2008
France	4.64	2003	4.15	2008
Germany	4.27	2003	4.99	2008
Greece	6.62	2003	5.37	2008
Iceland	8.43	2002	9.02	2006
Ireland	7.67	2003	7.80	2008
Italy	6.71	2003	6.50	2008
Japan	4.94	2003	5.44	2008
Korea	5.92	2003	6.14	2008
Mexico	5.60	2003	5.50	2008
Netherlands	6.79	2003	6.73	2008
New Zealand	7.89	2003	7.59	2008
Norway	5.85	2003	6.07	2008
Portugal	6.75	2003	6.20	2008
Spain	5.54	2003	5.27	2008
Sweden	6.10	2003	6.74	2008
Switzerland	5.68	2003	6.14	2008
Turkey	7.96	2003	7.60	2008
United Kingdom	6.02	2003	6.12	2008
United States	7.98	2003	7.34	2008

Source: IMD: World Competitiveness Yearbook.

Flexibility in Hiring and Firing
Sum of difficulty of hiring index and difficulty of firing index

Country	Actual Values	Year	Actual Values	Year
Australia	10	2004	10	2009
Austria	40	2004	40	2009
Belgium	21	2004	21	2009
Canada	11	2004	11	2009
Denmark	10	2004	10	2009
Finland	73	2004	84	2009
France	107	2004	107	2009
Germany	73	2004	73	2009
Greece	84	2004	73	2009
Iceland	44	2004	54	2009
Ireland	31	2004	31	2009
Italy	73	2004	73	2009
Japan	30	2004	30	2009
Korea	41	2004	74	2009
Mexico				
Netherlands	87	2004	87	2009
New Zealand	21	2004	21	2009
Norway	84	2004	101	2009
Portugal	100	2004	83	2009
Spain	108	2004	108	2009
Sweden	57	2004	73	2009
Switzerland	10	2004	10	2009
Turkey				
United Kingdom	21	2004	21	2009
United States	0	2004	0	2009

Source: World Bank.

Management Skills

Quality of Management Schools
Management of business schools in your country (1-7)

Country	Actual Values	Year	Actual Values	Year
Australia	5.20	2003	5.40	2008
Austria	5.00	2003	5.30	2008
Belgium	5.20	2003	5.90	2008
Canada	6.10	2003	5.90	2008
Denmark	5.00	2003	5.60	2008
Finland	5.60	2003	5.50	2008
France	5.90	2003	6.10	2008
Germany	5.00	2003	5.10	2008
Greece	3.50	2003	3.80	2008
Iceland	5.00	2003	5.40	2008
Ireland	5.50	2003	5.40	2008
Italy	4.70	2003	4.20	2008
Japan	4.00	2003	3.80	2008
Korea	4.00	2003	4.80	2008
Mexico	4.20	2003	4.30	2008
Netherlands	5.70	2003	5.50	2008
New Zealand	5.10	2003	5.00	2008
Norway	5.40	2003	5.10	2008
Portugal	4.30	2003	4.60	2008
Spain	5.80	2003	5.90	2008
Sweden	5.70	2003	5.40	2008
Switzerland	6.00	2003	6.00	2008
Turkey	3.90	2003	4.10	2008
United Kingdom	6.20	2003	5.30	2008
United States	6.80	2003	6.00	2008

Source: World economic forum (WEF): The Global Competitiveness Report.

Share of Female Managers
Female legislators, senior officials and managers (as % of total)

Country	Actual Values	Year	Actual Values	Year
Australia	35.00	2001	37.00	2005
Austria	29.00	2001	27.00	2005
Belgium	30.00	2001	32.00	2005
Canada	34.00	2001	36.00	2005
Denmark	22.00	2001	25.00	2005
Finland	28.00	2001	30.00	2005
France	37.00	2005	37.00	2005
Germany	34.00	2001	37.00	2005
Greece	26.00	2001	26.00	2005
Iceland	29.00	2001	27.00	2005
Ireland	28.00	2001	31.00	2005
Italy	21.00	2001	32.00	2005
Japan	10.00	2001	10.00	2005
Korea	5.00	2001	8.00	2005
Mexico	25.00	2001	29.00	2005
Netherlands	26.00	2001	26.00	2005
New Zealand	38.00	2001	36.00	2005
Norway	28.00	2001	30.00	2005
Portugal	29.00	2001	34.00	2005
Spain	31.00	2001	32.00	2005
Sweden	31.00	2001	30.00	2005
Switzerland	28.00	2001	28.00	2005
Turkey	7.00	2001	7.00	2005
United Kingdom	31.00	2001	34.00	2005
United States	46.00	2001	42.00	2005

Source: UN Human Development Report.

Extent of Incentive Compensation
Cash compensation of management (1-7)

Country	Actual Values	Year	Actual Values	Year
Australia	6.86	2003	5.81	2008
Austria	7.34	2003	6.95	2008
Belgium	7.00	2003	6.21	2008
Canada	7.10	2003	6.31	2008
Denmark	6.67	2003	6.25	2008
Finland	7.43	2003	5.59	2008
France	6.74	2003	5.75	2008
Germany	6.65	2003	6.03	2008
Greece	5.86	2003	4.69	2008
Iceland	7.21	2002	7.45	2006
Ireland	7.26	2003	6.47	2008
Italy	5.61	2003	4.72	2008
Japan	5.09	2003	4.88	2008
Korea	5.18	2003	3.92	2008
Mexico	6.15	2003	4.26	2008
Netherlands	6.68	2003	6.17	2008
New Zealand	5.96	2003	4.58	2008
Norway	6.76	2003	5.16	2008
Portugal	4.77	2003	4.35	2008
Spain	6.31	2003	4.04	2008
Sweden	7.46	2003	6.46	2008
Switzerland	6.92	2003	6.61	2008
Turkey	6.86	2003	6.17	2008
United Kingdom	5.66	2003	5.60	2008
United States	7.33	2003	6.83	2008

Source: IMD: World Competitiveness Report.

Composition and external influence on Company Boards
Corporate governance by investors and boards of directors in your country is characterized by (1-7)

Country	Actual Values	Year	Actual Values	Year
Australia	5.60	2003	5.80	2008
Austria	4.70	2003	5.40	2008
Belgium	4.80	2003	5.30	2008
Canada	5.10	2003	5.60	2008
Denmark	5.20	2003	5.70	2008
Finland	5.80	2003	5.70	2008
France	3.80	2003	5.30	2008
Germany	4.90	2003	5.60	2008
Greece	3.10	2003	4.10	2008
Iceland	5.10	2004	5.30	2008
Ireland	4.30	2003	5.60	2008
Italy	3.90	2003	4.10	2008
Japan	2.20	2003	5.20	2008
Korea	3.80	2003	5.40	2008
Mexico	3.60	2003	4.60	2008
Netherlands	4.20	2003	5.60	2008
New Zealand	5.40	2003	5.70	2008
Norway	5.30	2003	5.60	2008
Portugal	3.70	2003	4.70	2008
Spain	3.90	2003	5.10	2008
Sweden	5.20	2003	6.10	2008
Switzerland	4.60	2003	5.50	2008
Turkey	3.10	2003	3.80	2008
United Kingdom	5.80	2003	5.50	2008
United States	5.30	2003	5.60	2008

Source: World Economic Forum (WEF): The Global Competitiveness Report.

Knowledge Creation

Performance

Knowledge Building

Business assessment of innovation activity
Average of "degree of customer orientation", "capacity for innovation", and "extent of branding"

Country	Actual Values	Year	Actual Values	Year
Australia	5.30	2003	5.10	2008
Austria	5.60	2003	5.67	2008
Belgium	5.51	2003	5.37	2008
Canada	5.61	2003	5.30	2008
Denmark	5.72	2003	5.73	2008
Finland	6.03	2003	5.37	2008
France	5.72	2003	5.60	2008
Germany	5.94	2003	5.87	2008
Greece	4.24	2003	4.00	2008
Iceland	5.23	2004	5.20	2008
Ireland	5.04	2003	4.97	2008
Italy	4.90	2003	4.70	2008
Japan	5.83	2003	5.87	2008
Korea	4.86	2003	5.43	2008
Mexico	4.24	2003	4.20	2008
Netherlands	5.54	2003	5.50	2008
New Zealand	5.14	2003	4.87	2008
Norway	5.18	2003	5.23	2008
Portugal	4.00	2003	4.50	2008
Spain	5.01	2003	4.80	2008
Sweden	5.91	2003	5.77	2008
Switzerland	5.89	2003	5.93	2008
Turkey	3.75	2003	4.13	2008
United Kingdom	5.90	2003	5.37	2008
United States	6.07	2003	5.93	2008

Source: World Economic Forum (WEF): The Global Competitiveness Report.

Number of triadic patent families in US, Japan and EU

Country	Actual Values	Year	Actual Values	Year
Australia	21	2000	20	2005
Austria	32	2000	37	2005
Belgium	36	2000	32	2005
Canada	20	2000	25	2005
Denmark	45	2000	41	2005
Finland	69	2000	50	2005
France	39	2000	40	2005
Germany	76	2000	76	2005
Greece	1	2000	1	2005
Iceland	37	2000	18	2005
Ireland	11	2000	14	2005
Italy	12	2000	12	2005
Japan	116	2000	119	2005
Korea	17	2000	66	2005
Mexico	0	2000	0	2005
Netherlands	73	2000	73	2005
New Zealand	15	2000	16	2005
Norway	25	2000	24	2005
Portugal	0	2000	1	2005
Spain	4	2000	5	2005
Sweden	68	2000	72	2005
Switzerland	111	2000	108	2005
Turkey	0	2000	0	2005
United Kingdom	28	2000	26	2005
United States	56	2000	55	2005

Source: OECD: Main Science and Technology Indicators (MSTI).

Registered trademarks				
Country	Actual Values	Year	Actual Values	Year
Australia	879	2001	1133	2006
Austria	730	2000	753	2006
Belgium				
Canada	308	2000	325	2006
Denmark	678	2001	558	2006
Finland	403	2000	639	2005
France				
Germany	649	2001	583	2006
Greece	426	1998	384	2005
Iceland	1442	2001	1616	2006
Ireland	142	1998	244	2006
Italy	426	1996	479	2000
Japan	615	2001	692	2006
Korea	567	2001	1094	2006
Mexico	241	1999	360	2006
Netherlands				
New Zealand	1799	2001	609	2006
Norway	366	1996	551	2001
Portugal	799	2001	782	2006
Spain	1690	2001	1076	2006
Sweden	638	2001	784	2006
Switzerland	902	1999	1079	2006
Turkey	148	2001	473	2006
United Kingdom	752	2000	313	2006
United States	331	2001	415	2006

Source: World Intellectual Property Organization (VIPO).

Knowledge Sharing

Firm-level technology absorption
Companies in your country are absorbing new technology (1-7)

Country	Actual Values	Year	Actual Values	Year
Australia	5.60	2003	5.80	2007
Austria	5.20	2003	6.20	2007
Belgium	5.10	2003	5.50	2007
Canada	5.50	2003	5.60	2007
Denmark	5.30	2003	6.20	2007
Finland	6.20	2003	6.10	2007
France	5.50	2003	5.60	2007
Germany	5.80	2003	6.00	2007
Greece	4.30	2003	4.40	2007
Iceland	6.00	2004	6.60	2007
Ireland	5.40	2003	5.50	2007
Italy	4.80	2003	4.60	2007
Japan	6.30	2003	6.30	2007
Korea	5.80	2003	5.80	2007
Mexico	4.30	2003	4.40	2007
Netherlands	4.80	2003	5.50	2007
New Zealand	5.30	2003	5.50	2007
Norway	5.30	2003	6.10	2007
Portugal	4.10	2003	5.40	2007
Spain	4.70	2003	5.00	2007
Sweden	5.90	2003	6.20	2007
Switzerland	5.90	2003	6.20	2007
Turkey	4.90	2003	5.10	2007
United Kingdom	5.30	2003	5.60	2007
United States	6.60	2003	6.30	2007

Source: World Economic Forum (WEF): The Global Competitiveness Report.

Production process sophistication
Production processes use (1-7)

Country	Actual Values	Year	Actual Values	Year
Australia	5.60	2004	5.00	2008
Austria	5.40	2004	5.80	2008
Belgium	5.80	2004	5.80	2008
Canada	5.50	2004	5.00	2008
Denmark	6.00	2004	6.00	2008
Finland	6.40	2004	6.00	2008
France	5.90	2004	5.90	2008
Germany	6.10	2004	6.20	2008
Greece	4.00	2004	3.90	2008
Iceland	5.60	2004	5.40	2008
Ireland	5.40	2004	5.30	2008
Italy	5.00	2004	4.70	2008
Japan	6.30	2004	6.20	2008
Korea	4.90	2004	5.30	2008
Mexico	4.00	2004	3.60	2008
Netherlands	5.70	2004	5.90	2008
New Zealand	5.10	2004	4.60	2008
Norway	5.10	2004	5.70	2008
Portugal	3.50	2004	4.30	2008
Spain	5.00	2004	4.60	2008
Sweden	6.20	2004	6.20	2008
Switzerland	5.90	2004	6.10	2008
Turkey	3.70	2004	3.80	2008
United Kingdom	5.60	2004	5.20	2008
United States	6.00	2004	5.70	2008

Source: World Economic Forum (WEF): The Global Competitiveness Report.

Framework Conditions

Size of Public Research

R&D expenditure
(higher education and government)
as a percentage of GDP

Country	Actual Values	Year	Actual Values	Year
Australia	0.75	2000	0.76	2004
Austria	0.69	2002	0.78	2006
Belgium	0.54	2001	0.57	2006
Canada	0.86	2002	0.85	2007
Denmark	0.73	2001	0.80	2006
Finland	0.99	2002	0.98	2007
France	0.78	2001	0.75	2006
Germany	0.74	2001	0.76	2006
Greece	0.34	2001	0.34	2006
Iceland	1.12	2000	1.27	2005
Ireland	0.34	2002	0.44	2007
Italy	0.52	2000	0.52	2005
Japan	0.74	2000	0.72	2005
Korea	0.59	2001	0.69	2006
Mexico	0.26	2000	0.25	2005
Netherlands	0.74	2000	0.75	2003
New Zealand	0.72	2001	0.68	2005
Norway	0.64	2001	0.70	2006
Portugal	0.47	2000	0.40	2005
Spain	0.41	2000	0.52	2005
Sweden	0.96	2001	0.95	2006
Switzerland	0.61	2000	0.70	2004
Turkey	0.43	2000	0.52	2005
United Kingdom	0.62	2000	0.64	2005
United States	0.65	2001	0.67	2006

Source: OECD: Main Science and Technology Indicators (MSTI).

Public researchers per 10.000 total employment
(government and higher education researchers)

Country	Actual Values	Year	Actual Values	Year
Australia	53.53	2000	57.99	2004
Austria	19.26	2002	25.84	2006
Belgium	33.68	2001	38.82	2006
Canada	27.57	1999	30.04	2004
Denmark	34.53	2001	39.28	2006
Finland	66.78	2001	70.95	2006
France	36.05	2000	36.74	2005
Germany	27.10	2001	28.40	2006
Greece	28.67	1999	30.34	2006
Iceland				
Ireland	17.04	2001	25.30	2006
Italy	17.45	2000	21.18	2005
Japan	32.24	2000	33.56	2005
Korea	16.29	2001	18.35	2006
Mexico	4.88	1999	5.71	2005
Netherlands	25.88	1999	21.59	2003
New Zealand	47.00	1999	82.28	2005
Norway	37.10	1999	46.71	2005
Portugal	24.13	2000	27.90	2005
Spain	33.38	2000	38.76	2005
Sweden	40.95	1999	40.36	2006
Switzerland	24.04	2000	30.54	2004
Turkey	9.09	2000	13.64	2005
United Kingdom				
United States	17.19	1999	17.19	1999

Source: OECD: Main Science and Technology Indicators (MSTI).

Quality of Public Research

Science publications
Scientific publications per mio. inhabitants

Country	Actual Values	Year	Actual Values	Year
Australia	1089.68	2001	1302.50	2006
Austria	914.04	2001	994.93	2006
Belgium	972.82	2001	1182.90	2006
Canada	1040.55	2001	1312.15	2006
Denmark	1457.42	2001	1613.74	2006
Finland	1443.52	2001	1564.08	2006
France	789.42	2001	823.43	2006
Germany	795.26	2001	864.10	2006
Greece	488.59	2001	717.01	2006
Iceland	1245.38	2001	1534.50	2006
Ireland	699.25	2001	981.12	2006
Italy	552.38	2001	670.18	2006
Japan	558.51	2001	555.94	2006
Korea	313.26	2001	480.36	2006
Mexico	49.97	2001	62.97	2006
Netherlands	1175.06	2001	1409.58	2006
New Zealand	1106.96	2001	1254.24	2006
Norway	1107.89	2001	1423.94	2006
Portugal	330.91	2001	542.23	2006
Spain	550.70	2001	688.44	2006
Sweden	1735.16	2001	1809.05	2006
Switzerland	1871.82	2001	2242.25	2006
Turkey	90.09	2001	187.64	2006
United Kingdom	1149.69	2001	1227.19	2006
United States	875.78	2001	950.39	2006

Source: National Science Indicators (NSI).

Quality of scientific research institutions
Quality of scientific research institutions are 1=nonexistent, 7=the best in their fields internationally

Country	Actual Values	Year	Actual Values	Year
Australia	5.90	2003	5.70	2007
Austria	5.60	2003	5.30	2007
Belgium	5.80	2003	5.80	2007
Canada	5.70	2003	5.80	2007
Denmark	5.30	2003	5.60	2007
Finland	6.30	2003	5.70	2007
France	6.20	2003	5.40	2007
Germany	5.90	2003	5.80	2007
Greece	4.10	2003	3.80	2007
Iceland	4.90	2004	5.00	2007
Ireland	5.60	2003	5.30	2007
Italy	4.60	2003	3.40	2007
Japan	5.70	2003	5.40	2007
Korea	4.90	2003	5.50	2007
Mexico	3.70	2003	3.70	2007
Netherlands	6.20	2003	5.70	2007
New Zealand	5.60	2003	5.10	2007
Norway	5.40	2003	5.00	2007
Portugal	4.40	2003	4.60	2007
Spain	4.80	2003	4.10	2007
Sweden	6.00	2003	5.70	2007
Switzerland	6.30	2003	6.20	2007
Turkey	3.50	2003	4.10	2007
United Kingdom	6.10	2003	5.70	2007
United States	6.70	2003	6.30	2007

Source: World Economic Forum (WEF): The Global Competitiveness Report.

Relevans of Public Research

Citations
Citations of scientific publications (%)

Country	Actual Values	Year	Actual Values	Year
Australia	90.83	2000	63.94	2005
Austria	89.26	2000	66.64	2005
Belgium	90.53	2000	67.27	2005
Canada	90.27	2000	64.03	2005
Denmark	93.12	2000	71.22	2005
Finland	91.36	2000	66.16	2005
France	87.71	2000	62.18	2005
Germany	87.14	2000	66.37	2005
Greece	87.86	2000	55.16	2005
Iceland	92.66	2000	69.81	2005
Ireland	88.51	2000	62.07	2005
Italy	90.12	2000	64.03	2005
Japan	87.54	2000	59.47	2005
Korea	85.56	2000	54.14	2005
Mexico	83.03	2000	48.48	2005
Netherlands	92.41	2000	70.41	2005
New Zealand	90.82	2000	60.25	2005
Norway	92.70	2000	67.08	2005
Portugal	90.31	2000	61.54	2005
Spain	89.32	2000	63.57	2005
Sweden	92.96	2000	67.53	2005
Switzerland	90.20	2000	71.18	2005
Turkey	85.60	2000	41.00	2005
United Kingdom	90.00	2000	65.59	2005
United States	90.56	2000	67.00	2005

Source: OECD: Population Data; National Science Indicators (NSI).

Availability of scientists and engineers
Scientists and engineers in your country are
(1= nonexistent or rare, 7= widely available)

Country	Actual Values	Year	Actual Values	Year
Australia	5.60	2003	4.80	2007
Austria	5.60	2003	5.00	2007
Belgium	5.30	2003	5.10	2007
Canada	6.10	2003	5.50	2007
Denmark	5.20	2003	5.30	2007
Finland	6.00	2003	5.90	2007
France	6.10	2003	5.60	2007
Germany	5.50	2003	4.90	2007
Greece	5.50	2003	5.20	2007
Iceland	6.10	2004	5.30	2007
Ireland	5.30	2003	5.30	2007
Italy	5.20	2003	4.50	2007
Japan	6.10	2003	5.90	2007
Korea	5.40	2003	5.10	2007
Mexico	3.30	2003	3.50	2007
Netherlands	5.20	2003	4.90	2007
New Zealand	4.70	2003	4.00	2007
Norway	5.30	2003	5.20	2007
Portugal	4.90	2003	4.50	2007
Spain	5.20	2003	4.60	2007
Sweden	5.60	2003	5.60	2007
Switzerland	6.00	2003	5.20	2007
Turkey	4.70	2003	4.30	2007
United Kingdom	5.50	2003	4.80	2007
United States	6.00	2003	5.50	2007

Source: World Economic Forum (WEF): The Global Competitiveness Report.

Knowledge Transfer

Knowledge transfer Knowledge transfer is highly developed between companies and universities (0-10)				
Country	**Actual Values**	**Year**	**Actual Values**	**Year**
Australia	6.45	2003	5.78	2008
Austria	5.90	2003	5.96	2008
Belgium	5.76	2003	5.86	2008
Canada	6.38	2003	6.35	2008
Denmark	5.48	2003	6.00	2008
Finland	8.27	2003	6.04	2008
France	4.78	2003	4.48	2008
Germany	4.99	2003	5.45	2008
Greece	3.15	2003	3.49	2008
Iceland	6.38	2002	7.00	2007
Ireland	5.77	2003	5.68	2008
Italy	3.25	2003	3.74	2008
Japan	4.37	2003	5.01	2008
Korea	4.16	2003	3.72	2008
Mexico	3.37	2003	2.97	2008
Netherlands	5.03	2003	6.07	2008
New Zealand	5.32	2003	5.02	2008
Norway	5.29	2003	4.98	2008
Portugal	2.56	2003	3.84	2008
Spain	4.03	2003	3.89	2008
Sweden	6.21	2003	6.31	2008
Switzerland	6.18	2003	6.78	2008
Turkey	3.88	2003	4.57	2008
United Kingdom	4.55	2003	4.96	2008
United States	7.03	2003	6.56	2008
Source: IMD World Competitiveness Yearbook.				

Co-operation in R&D

University/industry research collaboration
In its R&D activity, business collaboration with local universities is (1 = minimal or nonexistent, 7 = intensive and ongoing)

Country	Actual Values	Year	Actual Values	Year
Australia	4.40	2003	4.80	2008
Austria	4.60	2003	5.00	2008
Belgium	5.20	2003	5.20	2008
Canada	4.90	2003	5.00	2008
Denmark	4.60	2003	5.30	2008
Finland	5.90	2003	5.50	2008
France	3.80	2003	3.90	2008
Germany	5.10	2003	5.40	2008
Greece	3.70	2003	2.90	2008
Iceland	4.30	2003	5.00	2008
Ireland	5.20	2003	4.90	2008
Italy	3.40	2003	3.10	2008
Japan	4.10	2003	4.60	2008
Korea	4.30	2003	5.10	2008
Mexico	3.20	2003	3.00	2008
Netherlands	4.80	2003	5.10	2008
New Zealand	4.10	2003	4.30	2008
Norway	4.10	2003	4.90	2008
Portugal	3.40	2003	3.60	2008
Spain	3.90	2003	3.60	2008
Sweden	5.40	2003	5.60	2008
Switzerland	4.90	2003	5.60	2008
Turkey	2.40	2003	3.40	2008
United Kingdom	4.90	2003	5.10	2008
United States	5.60	2003	5.80	2008

Source: World Economic Forum (WEF): The Global Competitiveness Report.

Share of public research financed by the private sector
Percentage of government R&D financed by industry

Country	Actual Values	Year	Actual Values	Year
Australia	5.58	2000	5.62	2004
Austria	6.01	2002	6.58	2004
Belgium	7.15	2000	9.19	2005
Canada	3.86	2001	3.70	2006
Denmark	6.69	2000	2.05	2005
Finland	15.23	2001	12.66	2006
France	6.69	2000	7.35	2005
Germany	2.19	2000	9.87	2005
Greece	1.92	2001	1.30	2005
Iceland	5.00	2001	7.37	2005
Ireland	6.62	2002	4.77	2007
Italy	1.68	2000	2.42	2005
Japan	1.00	2000	0.74	2005
Korea	8.05	2001	4.54	2006
Mexico	4.91	2000	1.15	2005
Netherlands	23.82	2000	16.12	2003
New Zealand	21.19	2001	19.07	2005
Norway	10.64	2001	10.55	2005
Portugal	3.63	2000	2.01	2005
Spain	6.13	2000	7.32	2005
Sweden	1.56	2001	1.49	2005
Switzerland				
Turkey	5.35	2000	1.53	2005
United Kingdom	10.40	2000	9.31	2005
United States	0.00	2001	0.00	2006

Source: OECD: Main Science and Technology Indicators.

Competencies of Workers

Business enterprise researchers
Business enterprise researchers per 10.000 total employment.

Country	Actual Values	Year	Actual Values	Year
Australia	18.00	2000	23.23	2004
Austria	38.64	2002	45.81	2006
Belgium	43.35	2001	40.25	2006
Canada	39.33	1999	47.16	2004
Denmark	34.65	2001	61.58	2006
Finland	90.08	2001	93.08	2006
France	33.30	2000	43.37	2005
Germany	40.15	2001	43.18	2006
Greece	5.62	1999	11.40	2006
Iceland				
Ireland	34.17	2001	34.27	2006
Italy	11.38	2000	11.48	2005
Japan	64.57	2000	75.33	2005
Korea	46.46	2001	67.23	2006
Mexico	0.97	1999	5.98	2005
Netherlands	24.67	2000	27.64	2005
New Zealand	15.13	1999	22.42	2005
Norway	42.56	1999	45.57	2005
Portugal	4.69	2000	7.83	2005
Spain	12.72	2000	18.24	2005
Sweden	54.91	1999	85.58	2006
Switzerland	39.81	2000	30.25	2004
Turkey	1.74	2000	4.35	2005
United Kingdom	28.92	2000	30.55	2005
United States	74.54	2000	76.72	2005

Source: OECD: Main Science and Technology Indicators.

Share of professionals
Percentage of employed persons who are professionals

Country	Actual Values	Year	Actual Values	Year
Australia	0.18	2002	0.19	2007
Austria	0.10	2002	0.10	2007
Belgium	0.19	2001	0.21	2006
Canada	0.16	2002	0.17	2007
Denmark	0.14	2002	0.15	2007
Finland	0.16	2002	0.18	2007
France	0.12	2003	0.13	2007
Germany	0.13	2002	0.14	2007
Greece	0.12	2002	0.14	2007
Iceland	0.16	2002	0.18	2007
Ireland	0.16	2002	0.17	2007
Italy	0.10	2002	0.10	2007
Japan	0.14	2002	0.15	2007
Korea	0.07	2002	0.09	2007
Mexico	0.06	2002	0.07	2007
Netherlands	0.17	2002	0.18	2007
New Zealand	0.14	2002	0.17	2007
Norway	0.11	2002	0.11	2007
Portugal	0.07	2002	0.09	2007
Spain	0.12	2002	0.12	2007
Sweden	0.18	2002	0.19	2007
Switzerland	0.17	2002	0.18	2007
Turkey	0.06	2002	0.06	2007
United Kingdom	0.12	2002	0.13	2007
United States	0.19	2001	0.20	2006

Source: LABORSTA Internet: Yearly sata: Total employment by occupation.

Quality of management schools
Management of business schools in your country are (1 = limited or of poor quality, 7 = among the best in the world)

Country	Actual Values	Year	Actual Values	Year
Australia	5.20	2003	5.40	2008
Austria	5.00	2003	5.30	2008
Belgium	5.20	2003	5.90	2008
Canada	6.10	2003	5.90	2008
Denmark	5.00	2003	5.60	2008
Finland	5.60	2003	5.50	2008
France	5.90	2003	6.10	2008
Germany	5.00	2003	5.10	2008
Greece	3.50	2003	3.80	2008
Iceland	5.00	2003	5.40	2008
Ireland	5.50	2003	5.40	2008
Italy	4.70	2003	4.20	2008
Japan	4.00	2003	3.80	2008
Korea	4.00	2003	4.80	2008
Mexico	4.20	2003	4.30	2008
Netherlands	5.70	2003	5.50	2008
New Zealand	5.10	2003	5.00	2008
Norway	5.40	2003	5.10	2008
Portugal	4.30	2003	4.60	2008
Spain	5.80	2003	5.90	2008
Sweden	5.70	2003	5.40	2008
Switzerland	6.00	2003	6.00	2008
Turkey	3.90	2003	4.10	2008
United Kingdom	6.20	2003	5.30	2008
United States	6.80	2003	6.00	2008

Source: World Economic Forum (WEF): The Global Competitiveness Report.

Foreign high-skilled people
Foreign high-skilled people are attracted to your country's business environment (0-10)

Country	Actual Values	Year	Actual Values	Year
Australia	6.65	2003	7.52	2008
Austria	6.40	2003	5.69	2008
Belgium	5.64	2003	5.23	2008
Canada	6.59	2003	7.40	2008
Denmark	4.38	2003	4.19	2008
Finland	5.34	2003	4.32	2008
France	5.52	2003	5.19	2008
Germany	4.44	2003	4.40	2008
Greece	4.28	2003	3.79	2008
Iceland	4.88	2002	5.83	2007
Ireland	7.37	2003	7.92	2008
Italy	3.78	2003	3.03	2008
Japan	4.30	2003	4.18	2008
Korea	4.53	2003	4.46	2008
Mexico	4.88	2003	4.42	2008
Netherlands	5.90	2003	6.29	2008
New Zealand	5.62	2003	5.60	2008
Norway	4.71	2003	4.42	2008
Portugal	3.81	2003	3.76	2008
Spain	5.69	2003	5.35	2008
Sweden	3.53	2003	4.34	2008
Switzerland	8.00	2003	8.97	2008
Turkey	4.20	2003	4.50	2008
United Kingdom	7.02	2003	7.96	2008
United States	9.02	2003	8.40	2008

Source: IMD: World Competitiveness Yearbook.

Tax Incentives and Subsidies

Business R&D financed by government
Percentage of business R&D financed by government

Country	Actual Values	Year	Actual Values	Year
Australia	3.77	2000	4.25	2005
Austria	5.61	2002	6.44	2004
Belgium	5.92	2001	6.48	2006
Canada	3.57	2001	2.19	2006
Denmark	3.05	2001	2.42	2005
Finland	3.41	2001	3.73	2006
France	9.92	2000	10.01	2005
Germany	6.88	2000	4.46	2005
Greece	1.24	2001	6.30	2005
Iceland	1.39	2001	2.83	2005
Ireland	2.78	2001	3.85	2006
Italy	12.16	2002	9.89	2007
Japan	1.70	2000	1.15	2005
Korea	8.06	2001	4.74	2006
Mexico	9.31	2000	5.71	2005
Netherlands	5.25	2000	3.35	2003
New Zealand	8.99	2001	11.33	2005
Norway	10.28	2001	8.94	2005
Portugal	4.23	2000	4.18	2005
Spain	7.23	2000	13.61	2005
Sweden	5.80	2001	4.22	2005
Switzerland	2.28	2000	1.50	2004
Turkey	4.25	2000	6.90	2005
United Kingdom	8.81	2000	8.58	2005
United States	8.37	2001	9.31	2006

Source: OECD: Main Science and Technology Indicators.

Subsidies and tax credits for firm-level R&D
For firms conducting R&D in your country, direct government subsidies to indivudial companies or R&D tax credits (1=never occur, 7=are widespread and large)

Country	Actual Values	Year	Actual Values	Year
Australia	4.50	2003	4.40	2004
Austria	4.80	2003	4.30	2004
Belgium	4.40	2003	4.30	2004
Canada	4.40	2003	5.00	2004
Denmark	3.60	2003	3.50	2004
Finland	4.60	2003	4.80	2004
France	4.40	2003	4.60	2004
Germany	4.50	2003	4.20	2004
Greece	4.10	2003	3.70	2004
Iceland	3.50	2004	3.50	2004
Ireland	5.00	2003	4.50	2004
Italy	4.20	2003	3.50	2004
Japan	3.80	2003	4.60	2004
Korea	4.10	2003	4.30	2004
Mexico	2.60	2003	3.00	2004
Netherlands	4.70	2003	4.20	2004
New Zealand	3.10	2003	2.50	2004
Norway	4.20	2003	4.30	2004
Portugal	4.30	2003	3.80	2004
Spain	4.20	2003	3.80	2004
Sweden	4.00	2003	3.60	2004
Switzerland	3.20	2003	3.20	2004
Turkey	3.20	2003	3.30	2004
United Kingdom	3.90	2003	4.20	2004
United States	4.10	2003	4.50	2004

Source: World Economic Forum (WEF): The Global Competitiveness Report.

Tax treatment of R&D for SMEs				
Country	Actual Values	Year	Actual Values	Year
Australia	0.20	2001	0.12	2007
Austria	0.12	2001	0.09	2007
Belgium	-0.01	2001	0.09	2007
Canada	0.32	2001	0.33	2007
Denmark	0.11	2001	0.16	2007
Finland	-0.01	2001	-0.01	2007
France	0.06	2001	0.19	2007
Germany	-0.02	2001	-0.03	2007
Greece	-0.01	2001	-0.01	2007
Iceland	-0.01	2001	-0.01	2007
Ireland	0.05	2004	0.05	2007
Italy	0.44	2001	-0.02	2007
Japan	0.12	2001	0.16	2007
Korea	0.16	2001	0.16	2007
Mexico	0.03	2001	0.37	2007
Netherlands	0.35	2001	0.24	2007
New Zealand	-0.02	2001	-0.02	2007
Norway	0.23	2001	0.23	2007
Portugal	0.34	2001	0.29	2007
Spain	0.44	2001	0.39	2007
Sweden	-0.01	2001	-0.02	2007
Switzerland	-0.01	2001	-0.01	2007
Turkey	0.14	2007	0.14	2007
United Kingdom	0.11	2001	0.11	2007
United States	0.07	2001	0.07	2007

Source: OECD: Science, Technology and Industry Outlook.

Tax treatment of R&D for large firms				
Country	Actual Values	Year	Actual Values	Year
Australia	0.20	2001	0.12	2007
Austria	0.12	2001	0.09	2007
Belgium	-0.01	2001	0.09	2007
Canada	0.17	2001	0.18	2007
Denmark	0.11	2001	0.16	2007
Finland	-0.01	2001	-0.01	2007
France	0.06	2001	0.19	2007
Germany	-0.02	2001	-0.03	2007
Greece	-0.01	2001	-0.01	2007
Iceland	-0.01	2001	-0.01	2007
Ireland	0.00	2001	0.05	2007
Italy	-0.03	2001	-0.02	2007
Japan	0.01	2001	0.12	2007
Korea	0.13	2001	0.18	2007
Mexico	0.03	2001	0.37	2007
Netherlands	0.10	2001	0.07	2007
New Zealand	-0.02	2001	-0.02	2007
Norway	-0.02	2001	0.21	2007
Portugal	0.34	2001	0.29	2007
Spain	0.44	2001	0.39	2007
Sweden	-0.01	2001	-0.02	2007
Switzerland	-0.01	2001	-0.01	2007
Turkey	0.14	2006	0.14	2007
United Kingdom	0.10	2001	0.10	2007
United States	0.07	2001	0.07	2007

Source: OECD: Science, Technology and Industry Outlook.

Skills among Customers and Suppliers

Buyer Sophistication
Buyers in your country are (1=unsophisticated and make choices based on the lowest price, 7=knowledgeable and demanding and buy based on superior performance attributes)

Country	Actual Values	Year	Actual Values	Year
Australia	5.50	2003	4.80	2008
Austria	5.10	2003	5.10	2008
Belgium	5.40	2003	4.80	2008
Canada	5.70	2003	4.90	2008
Denmark	5.50	2003	5.10	2008
Finland	6.10	2003	4.90	2008
France	5.80	2003	4.80	2008
Germany	5.60	2003	4.80	2008
Greece	3.90	2003	3.90	2008
Iceland	5.10	2004	4.60	2008
Ireland	5.40	2003	4.80	2008
Italy	5.40	2003	4.10	2008
Japan	5.50	2003	5.30	2008
Korea	4.80	2003	5.00	2008
Mexico	3.60	2003	3.80	2008
Netherlands	5.50	2003	4.90	2008
New Zealand	5.30	2003	4.50	2008
Norway	5.40	2003	4.90	2008
Portugal	4.60	2003	3.80	2008
Spain	5.10	2003	4.40	2008
Sweden	5.80	2003	5.10	2008
Switzerland	6.10	2003	5.40	2008
Turkey	3.60	2003	3.50	2008
United Kingdom	5.70	2003	4.70	2008
United States	5.90	2003	5.10	2008

Source: World Economic Forum (WEF): The Global Competitiveness Report.

Government procurement of advanced technology products
Government purchase decisions for the procurement of advanced technology products are (1=solely based on price, 7=based on technology and encourage innovation)

Country	Actual Values	Year	Actual Values	Year
Australia	4.40	2003	4.10	2007
Austria	4.30	2003	4.00	2007
Belgium	4.20	2003	4.00	2007
Canada	4.90	2003	4.10	2007
Denmark	4.30	2003	4.50	2007
Finland	5.30	2003	4.70	2007
France	4.90	2003	4.30	2007
Germany	4.60	2003	4.00	2007
Greece	3.50	2003	3.20	2007
Iceland	4.10	2004	4.40	2007
Ireland	4.40	2003	3.90	2007
Italy	4.20	2003	2.90	2007
Japan	4.80	2003	3.90	2007
Korea	4.60	2003	5.50	2007
Mexico	3.70	2003	3.20	2007
Netherlands	4.60	2003	4.00	2007
New Zealand	4.10	2003	3.60	2007
Norway	4.30	2003	4.30	2007
Portugal	4.10	2003	4.00	2007
Spain	4.60	2003	3.70	2007
Sweden	4.70	2003	4.70	2007
Switzerland	4.80	2003	4.10	2007
Turkey	3.60	2003	3.10	2007
United Kingdom	4.10	2003	4.00	2007
United States	4.60	2003	4.90	2007

Source: World Economic Forum (WEF): The Global Competitiveness Report.

Local supplier quality
The quality of the local suppliers in your country is (1=poor, as they are inefficient and have little technological capability, 7=very good, as they are internationally competitive and assist in new product and process development)

Country	Actual Values	Year	Actual Values	Year
Australia	5.60	2003	5.70	2007
Austria	5.90	2003	6.40	2007
Belgium	6.00	2003	6.00	2007
Canada	5.60	2003	5.80	2007
Denmark	6.00	2003	5.90	2007
Finland	5.80	2003	5.80	2007
France	6.20	2003	5.90	2007
Germany	6.50	2003	6.40	2007
Greece	4.20	2003	4.70	2007
Iceland	5.60	2004	5.50	2007
Ireland	5.20	2003	5.50	2007
Italy	5.80	2003	5.30	2007
Japan	6.00	2003	6.30	2007
Korea	4.80	2003	5.30	2007
Mexico	4.20	2003	4.90	2007
Netherlands	6.40	2003	6.00	2007
New Zealand	5.30	2003	5.50	2007
Norway	5.30	2003	5.80	2007
Portugal	4.50	2003	4.90	2007
Spain	5.70	2003	5.40	2007
Sweden	5.90	2003	6.00	2007
Switzerland	6.10	2003	6.40	2007
Turkey	4.80	2003	4.80	2007
United Kingdom	5.90	2003	5.40	2007
United States	6.40	2003	6.00	2007

Source: World Economic Forum (WEF): The Global Competitiveness Report.

Competition

Competition legislation
Competition legislation in your country is (0=not effective in preventing unfair competition, 10=efficient in preventing unfair competition)

Country	Actual Values	Year	Actual Values	Year
Australia	7.54	2003	6.88	2008
Austria	7.03	2003	7.11	2008
Belgium	6.28	2003	6.33	2008
Canada	6.52	2003	6.75	2008
Denmark	7.48	2003	7.81	2008
Finland	8.59	2003	6.96	2008
France	6.36	2003	6.39	2008
Germany	7.33	2003	6.79	2008
Greece	5.01	2003	4.09	2008
Iceland	6.57	2002	6.29	2007
Ireland	6.30	2003	6.64	2008
Italy	5.29	2003	4.95	2008
Japan	5.77	2003	6.37	2008
Korea	5.18	2003	4.34	2008
Mexico	4.63	2003	4.25	2008
Netherlands	6.84	2003	6.91	2008
New Zealand	7.28	2003	6.58	2008
Norway	6.76	2003	6.49	2008
Portugal	4.77	2003	5.41	2008
Spain	5.14	2003	5.10	2008
Sweden	6.50	2003	6.74	2008
Switzerland	5.88	2003	6.09	2008
Turkey	4.78	2003	5.60	2008
United Kingdom	6.46	2003	5.86	2008
United States	6.73	2003	6.02	2008

Source: IMD: World Competitiveness Center. Business legislation, competition legislation.

Local supplier quantity
Local suppliers in your country are (1=largely non-existent, 7=numerous and include the most important materials, components, equipment and services)

Country	Actual Values	Year	Actual Values	Year
Australia	5.90	2003	5.10	2007
Austria	6.10	2003	5.90	2007
Belgium	6.00	2003	5.60	2007
Canada	5.80	2003	5.50	2007
Denmark	6.00	2003	5.50	2007
Finland	3.20	2003	5.30	2007
France	5.90	2003	5.70	2007
Germany	6.50	2003	6.20	2007
Greece	4.20	2003	4.70	2007
Iceland	5.40	2004	5.00	2007
Ireland	5.40	2003	5.20	2007
Italy	5.30	2003	5.30	2007
Japan	6.10	2003	6.30	2007
Korea	5.10	2003	5.30	2007
Mexico	4.30	2003	4.90	2007
Netherlands	5.90	2003	5.60	2007
New Zealand	5.70	2003	4.70	2007
Norway	5.40	2003	5.40	2007
Portugal	4.70	2003	4.90	2007
Spain	5.20	2003	5.60	2007
Sweden	6.20	2003	5.40	2007
Switzerland	6.10	2003	5.90	2007
Turkey	4.00	2003	5.20	2007
United Kingdom	5.90	2003	5.10	2007
United States	6.10	2003	5.80	2007

Source: World Economic Forum (WEF): The Global Competitiveness Report.

Access to Technology

Intellectual property protection
Intellectual property protection in your country is (1=weak or non-existent, 7=equal to the world's most stringent)

Country	Actual Values	Year	Actual Values	Year
Australia	6.00	2003	5.90	2007
Austria	6.20	2003	6.20	2007
Belgium	5.50	2003	5.50	2007
Canada	5.80	2003	5.60	2007
Denmark	6.30	2003	6.20	2007
Finland	6.40	2003	6.20	2007
France	6.60	2003	6.00	2007
Germany	6.30	2003	6.00	2007
Greece	3.90	2003	4.10	2007
Iceland	5.70	2004	6.00	2007
Ireland	5.20	2003	5.60	2007
Italy	5.70	2003	4.30	2007
Japan	5.50	2003	5.70	2007
Korea	4.00	2003	5.00	2007
Mexico	3.60	2003	3.20	2007
Netherlands	6.50	2003	5.90	2007
New Zealand	5.30	2003	5.80	2007
Norway	5.30	2003	5.80	2007
Portugal	4.90	2003	4.90	2007
Spain	5.30	2003	4.70	2007
Sweden	5.80	2003	6.00	2007
Switzerland	6.50	2003	6.30	2007
Turkey	3.10	2003	3.00	2007
United Kingdom	6.10	2003	5.40	2007
United States	6.50	2003	5.60	2007

Source: World Economic Forum (WEF): The Global Competitiveness Report.

Development and application of technology (0-10)

Country	Actual Values	Year	Actual Values	Year
Australia	7.71	2003	7.06	2008
Austria	7.44	2003	7.24	2008
Belgium	6.72	2003	6.68	2008
Canada	7.80	2003	7.62	2008
Denmark	7.51	2003	7.81	2008
Finland	8.68	2003	7.19	2008
France	7.02	2003	6.80	2008
Germany	6.72	2003	6.56	2008
Greece	6.37	2003	5.27	2008
Iceland	7.12	2002	8.57	2007
Ireland	7.19	2003	7.06	2008
Italy	5.16	2003	5.16	2008
Japan	6.62	2003	6.70	2008
Korea	5.63	2003	5.74	2008
Mexico	5.05	2003	4.58	2008
Netherlands	7.02	2003	6.85	2008
New Zealand	7.17	2003	7.02	2008
Norway	7.21	2003	7.44	2008
Portugal	5.81	2003	6.80	2008
Spain	5.94	2003	5.89	2008
Sweden	7.86	2003	7.88	2008
Switzerland	7.45	2003	7.61	2008
Turkey	5.56	2003	5.90	2008
United Kingdom	6.37	2003	6.71	2008
United States	8.18	2003	7.48	2008

Source: IMD: World Competitiveness, technological infrastructure.

Local availability of specialized research and training services
In your industry, specialized research and training services are (1=not available in the country, 7=available from world-class local institutions)

Country	Actual Values	Year	Actual Values	Year
Australia	5.70	2003	5.30	2008
Austria	5.60	2003	5.20	2008
Belgium	5.20	2003	5.60	2008
Canada	5.20	2003	5.60	2008
Denmark	5.40	2003	5.80	2008
Finland	6.10	2003	5.80	2008
France	6.00	2003	5.70	2008
Germany	6.00	2003	5.80	2008
Greece	3.90	2003	3.70	2008
Iceland	4.70	2004	5.10	2008
Ireland	5.10	2003	4.90	2008
Italy	4.90	2003	4.60	2008
Japan	5.70	2003	5.50	2008
Korea	4.50	2003	5.00	2008
Mexico	4.00	2003	4.10	2008
Netherlands	5.60	2003	5.80	2008
New Zealand	4.80	2003	4.90	2008
Norway	5.00	2003	5.10	2008
Portugal	4.40	2003	4.70	2008
Spain	5.30	2003	4.50	2008
Sweden	5.70	2003	5.70	2008
Switzerland	5.90	2003	6.00	2008
Turkey	3.70	2003	3.90	2008
United Kingdom	6.00	2003	5.70	2008
United States	6.50	2003	6.10	2008

Source: World Economic Forum (WEF): The Global Competitiveness Report.

Information and Communication Technology

Performance

Corporate Digitalisation

Enterprises using e-learning applications
Percentage of enterprises using e-learning applications for training and education of employees, all enterprises, without financial sector (10 employed persons or more)

Country	Actual Values	Year	Actual Values	Year
Australia				
Austria	21	2003	26	2007
Belgium	14	2003	24	2007
Canada				
Denmark	8	2003	28	2007
Finland	30	2003	37	2007
France	10	2006	17	2007
Germany	15	2003	17	2007
Greece	31	2003	45	2007
Iceland	18	2003	17	2006
Ireland	20	2003	37	2007
Italy	4	2003	15	2007
Japan				
Korea				
Mexico				
Netherlands	8	2003	13	2007
New Zealand				
Norway	13	2003	34	2007
Portugal	16	2003	25	2007
Spain	22	2003	30	2007
Sweden	20	2003	27	2007
Switzerland				
Turkey				
United Kingdom	18	2005	25	2007
United States				

Source: European Commission – Eurostat Homepage.

Enterprises purchasing on the Internet
Percentage of enterprises having purchased on-line over the last calendar year

Country	Actual Values	Year	Actual Values	Year
Australia	42	2004	54	2007
Austria	21	2003	34	2008
Belgium	22	2003	43	2007
Canada	56	2004	65	2007
Denmark	22	2003	38	2008
Finland	16	2003	19	2007
France				
Germany	11	2003	52	2007
Greece	7	2003	8	2007
Iceland	15	2003	35	2008
Ireland	24	2003	54	2008
Italy	4	2003	12	2008
Japan	24	2004	35	2007
Korea	15	2004	34	2006
Mexico	2	2003	2	2003
Netherlands	20	2003	40	2008
New Zealand	59	2006	59	2006
Norway	21	2003	44	2008
Portugal	9	2003	20	2008
Spain	3	2003	19	2008
Sweden	23	2003	50	2008
Switzerland	57	2005	57	2005
Turkey				
United Kingdom	25	2003	47	2008
United States				

Source: European Commission – Eurostat Homepage.

Enterprises selling on the Internet
Percentage of enterprises having received on-line payments for Internet sales over the last calendar year

Country	Actual Values	Year	Actual Values	Year
Australia	19	2004	17	2005
Austria	12	2004	18	2007
Belgium	18	2004	18	2007
Canada	11	2004	13	2007
Denmark	25	2004	33	2007
Finland	17	2004	15	2007
France				
Germany	18	2004	24	2007
Greece	6	2004	6	2007
Iceland	22	2006	22	2006
Ireland	19	2004	27	2007
Italy	7	2004	2	2007
Japan	21	2004	20	2007
Korea	10	2004	7	2006
Mexico				
Netherlands	17	2004	26	2007
New Zealand	35	2006	35	2006
Norway	13	2004	32	2007
Portugal	6	2004	9	2007
Spain	2	2004	8	2007
Sweden	20	2004	27	2007
Switzerland	25	2005	25	2005
Turkey				
United Kingdom	29	2004	29	2007
United States				

Source: European Commission – Eurostat Homepage.

Percentage of enterprises using Extranet/Intranet

Country	Actual Values	Year	Actual Values	Year
Australia	88.60	2002	90.22	2004
Austria	83.92	2002	97.00	2007
Belgium	91.00	2003	97.00	2007
Canada	89.09	2002	93.92	2004
Denmark	93.75	2002	97.00	2007
Finland	96.01	2002	99.00	2007
France	83.00	2003	96.00	2007
Germany	82.92	2002	95.00	2007
Greece	88.00	2003	93.00	2007
Iceland	97.00	2003	99.00	2006
Ireland	82.79	2002	95.00	2007
Italy	73.25	2002	94.00	2007
Japan	96.10	2002	96.10	2002
Korea	94.02	2004	94.02	2004
Mexico	9.62	2002	9.62	2002
Netherlands	78.99	2002	99.00	2007
New Zealand	83.00	2002	84.28	2004
Norway	81.50	2002	95.00	2007
Portugal	71.78	2002	90.00	2007
Spain	82.39	2002	94.00	2007
Sweden	95.19	2002	95.00	2007
Switzerland	78.00	2002	92.00	2004
Turkey				
United Kingdom	62.27	2002	93.00	2007
United States				

Source: European Commission – Eurostat Homepage.

Extent of business internet use
Internet use by businesses in your country to buy and/or sell products and services is (1 = very low, 7 =very widespread)

Country	Actual Values	Year	Actual Values	Year
Australia	5.32	2005	5.38	2007
Austria	5.22	2005	5.48	2007
Belgium	4.68	2005	4.94	2007
Canada	5.61	2005	5.63	2007
Denmark	5.76	2005	5.81	2007
Finland	5.64	2005	5.60	2007
France	5.06	2005	5.09	2007
Germany	5.55	2005	5.90	2007
Greece	2.96	2005	3.30	2007
Iceland	5.59	2005	5.64	2007
Ireland	4.61	2005	5.03	2007
Italy	3.54	2005	4.10	2007
Japan	5.63	2005	5.67	2007
Korea	5.84	2005	6.12	2007
Mexico	3.76	2005	3.94	2007
Netherlands	5.49	2005	5.62	2007
New Zealand	5.32	2005	5.01	2007
Norway	5.19	2005	5.52	2007
Portugal	4.15	2005	4.50	2007
Spain	4.07	2005	4.20	2007
Sweden	5.93	2005	5.96	2007
Switzerland	5.21	2005	5.69	2007
Turkey	3.46	2005	4.07	2007
United Kingdom	5.78	2005	5.95	2007
United States	6.41	2005	5.87	2007

Source: World Economic Forum (WEF): The Global Information Technology Report.

Communications technology meets business requirements (0-10)

Country	Actual Values	Year	Actual Values	Year
Australia	8.25	2003	6.41	2008
Austria	8.36	2003	8.53	2008
Belgium	8.21	2003	8.25	2008
Canada	8.59	2003	8.63	2008
Denmark	8.52	2003	8.76	2008
Finland	9.49	2003	8.24	2008
France	7.38	2003	8.17	2008
Germany	8.29	2003	8.85	2008
Greece	6.42	2003	6.66	2008
Iceland	9.76	2004	9.17	2007
Ireland	6.93	2003	5.08	2008
Italy	6.24	2003	6.97	2008
Japan	7.62	2003	8.38	2008
Korea	7.18	2003	8.24	2008
Mexico	5.49	2003	5.59	2008
Netherlands	7.64	2003	8.68	2008
New Zealand	8.19	2003	5.33	2008
Norway	8.43	2003	8.98	2008
Portugal	6.61	2003	7.92	2008
Spain	5.66	2003	6.56	2008
Sweden	8.72	2003	9.29	2008
Switzerland	8.55	2003	8.93	2008
Turkey	6.67	2003	7.50	2008
United Kingdom	7.42	2003	8.06	2008
United States	8.77	2003	8.57	2008

Source: IMD: World Competitiveness, Technological Infrastructure.

Digital Citizen

Internet banking				
Country	Actual Values	Year	Actual Values	Year
Australia				
Austria	13	2003	34	2008
Belgium	23	2005	35	2007
Canada	58	2005	58	2005
Denmark	38	2003	61	2008
Finland	43	2003	72	2008
France	18	2006	40	2008
Germany	21	2003	38	2008
Greece	1	2003	5	2008
Iceland	48	2003	72	2007
Ireland	8	2003	24	2007
Italy	8	2005	13	2008
Japan	7	2003	7	2003
Korea	23	2004	23	2004
Mexico				
Netherlands	50	2005	69	2008
New Zealand				
Norway	49	2003	75	2008
Portugal	6	2003	14	2008
Spain	10	2003	20	2008
Sweden	38	2003	65	2008
Switzerland				
Turkey	2	2004	2	2005
United Kingdom	22	2003	38	2008
United States	18	2003	18	2003

Source: European Commision, Eurostat Homepage.

E-commerce Percentage of individuals who ordered goods or services, over the Internet, for private use, in the last 3 months				
Country	Actual Values	Year	Actual Values	Year
Australia				
Austria				
Belgium	11	2005	15	2007
Canada				
Denmark	16	2003	47	2008
Finland	14	2003	33	2008
France	19	2006	28	2008
Germany	24	2003	42	2008
Greece	1	2003	6	2008
Iceland	20	2003	32	2007
Ireland	5	2003	26	2007
Italy	3	2002	7	2008
Japan				
Korea				
Mexico				
Netherlands	15	2002	43	2008
New Zealand				
Norway	24	2003	46	2008
Portugal	2	2003	6	2008
Spain	5	2003	13	2008
Sweden	21	2003	38	2008
Switzerland				
Turkey	0	2004	1	2005
United Kingdom	24	2003	49	2008
United States				

Source: European Commision, Eurostat Homepage.

Individuals using the Internet for interacting with public authorities
Share of individuals uding the internet for obtaining information from public authorities websites

Country	Actual Values	Year	Actual Values	Year
Australia				
Austria	7.90	2002	24.00	2007
Belgium	15.90	2005	20.70	2007
Canada				
Denmark	35.10	2002	57.70	2007
Finland	31.40	2002	43.20	2007
France	36.60	2007	36.60	2007
Germany	14.00	2002	39.10	2007
Greece	3.50	2002	9.50	2007
Iceland	48.90	2003	54.00	2007
Ireland	9.60	2003	25.80	2007
Italy	13.00	2005	15.20	2007
Japan				
Korea				
Mexico				
Netherlands	11.60	2002	49.10	2007
New Zealand				
Norway	43.40	2003	55.10	2007
Portugal	3.90	2002	16.80	2007
Spain	19.50	2003	25.10	2007
Sweden	40.00	2002	47.20	2007
Switzerland				
Turkey	5.70	2004	5.70	2004
United Kingdom	6.40	2002	32.90	2007
United States				

Source: European Commision, Eurostat Homepage.

Individuals with Internet access having encountered security problems
Percentage of individuals who have, in the last 12 months, experienced the following security problem:
Computer virus resulting in loss of information or time

Country	Actual Values	Year	Actual Values	Year
Australia				
Austria	0.00	2003	21.00	2005
Belgium				
Canada				
Denmark	23.60	2003	12.80	2005
Finland	38.10	2003	16.80	2005
France				
Germany	38.10	2003	14.50	2005
Greece	36.50	2003	29.90	2005
Iceland	31.90	2003	13.50	2005
Ireland	39.60	2003	31.20	2005
Italy	6.50	2005	6.50	2005
Japan				
Korea	1.00	2004	1.00	2004
Mexico				
Netherlands	17.10	2005	17.10	2005
New Zealand				
Norway	31.60	2003	19.90	2005
Portugal	37.20	2003	24.40	2005
Spain	0.00	2004	0.00	2005
Sweden	34.50	2003	23.40	2005
Switzerland				
Turkey	29.00	2004	31.70	2005
United Kingdom	24.60	2003	10.40	2005
United States				

Source: European Commision, Eurostat Homepage.

Internet users
Internet users per 100 inhabitants

Country	Actual Values	Year	Actual Values	Year
Australia	56.67	2003	52.00	2006
Austria	46.20	2003	51.30	2006
Belgium	38.56	2003	46.90	2006
Canada	55.49	2003	76.80	2006
Denmark	54.10	2003	58.20	2006
Finland	53.38	2003	55.60	2006
France	36.56	2003	49.60	2006
Germany	39.99	2003	46.70	2006
Greece	15.00	2003	18.40	2006
Iceland	67.47	2003	65.30	2006
Ireland	31.67	2003	34.20	2006
Italy	41.64	2003	52.90	2006
Japan	48.27	2003	68.30	2006
Korea	60.97	2003	71.10	2006
Mexico	11.97	2003	19.00	2006
Netherlands	52.20	2003	85.70	2006
New Zealand	52.63	2003	78.80	2006
Norway	34.57	2003	81.70	2006
Portugal	25.69	2003	30.30	2006
Spain	23.91	2003	42.80	2006
Sweden	63.00	2003	77.00	2006
Switzerland	39.85	2003	58.10	2006
Turkey	8.49	2003	17.70	2006
United Kingdom	59.19	2003	63.20	2006
United States	55.58	2003	69.80	2006

Source: World Economic Forum (WEF): The Global Information Technology Report.

Use of Internet for formalised educational activities
Percentage of individuals who used Internet, in the last 3 months, for formalised educational activities (school, university, etc)

Country	Actual Values	Year	Actual Values	Year
Australia				
Austria	7.20	2003	10.50	2006
Belgium	13.00	2005	12.10	2006
Canada				
Denmark	11.90	2003	14.40	2006
Finland	19.20	2003	23.90	2006
France				
Germany	9.00	2003	12.20	2006
Greece	7.00	2003	7.40	2006
Iceland	6.00	2003	8.50	2006
Ireland	6.20	2003	9.10	2006
Italy	6.20	2005	6.70	2006
Japan				
Korea				
Mexico				
Netherlands	16.60	2005	16.80	2006
New Zealand				
Norway	3.20	2003	5.20	2006
Portugal	5.90	2003	6.30	2006
Spain	7.50	2003	4.20	2006
Sweden	5.50	2003	5.20	2006
Switzerland				
Turkey	5.30	2004	3.70	2005
United Kingdom	17.30	2003	17.80	2006
United States				

Source: European Commision, Eurostat Homepage.

Framework Conditions

Telecom Prices

Monthly charge for Internet				
Country	Actual Values	Year	Actual Values	Year
Australia	44.46	2004	52.26	2007
Austria	43.81	2004	50.08	2007
Belgium	42.40	2004	46.08	2007
Canada	40.56	2004	51.07	2007
Denmark	40.49	2004	34.34	2007
Finland	31.36	2004	31.18	2007
France	27.48	2004	36.70	2007
Germany	28.48	2004	32.22	2007
Greece	43.09	2004	41.77	2007
Iceland	40.45	2004	57.92	2007
Ireland	39.45	2004	40.41	2007
Italy	46.27	2004	41.09	2007
Japan	33.17	2004	34.21	2007
Korea	40.98	2004	40.65	2007
Mexico	61.16	2004	72.20	2007
Netherlands	23.04	2004	39.06	2007
New Zealand	26.98	2004	48.66	2007
Norway	38.43	2004	55.74	2007
Portugal	52.03	2004	52.61	2007
Spain	57.94	2004	67.74	2007
Sweden	28.97	2004	34.00	2007
Switzerland	25.85	2004	32.69	2007
Turkey	41.71	2004	50.04	2007
United Kingdom	27.17	2004	33.34	2007
United States	26.95	2004	53.06	2007

Source: OECD: Communications Outlook.

Monthly charge - mobile phone				
Country	Actual Values	Year	Actual Values	Year
Australia	596.20	2004	426.73	2006
Austria	519.40	2004	379.32	2006
Belgium	556.94	2004	437.56	2006
Canada	418.60	2004	474.95	2006
Denmark	240.25	2004	89.16	2006
Finland	308.46	2004	177.91	2006
France	527.67	2004	409.86	2006
Germany	634.32	2004	411.43	2006
Greece	478.85	2004	451.36	2006
Iceland	391.15	2004	335.96	2006
Ireland	581.07	2004	390.22	2006
Italy	641.28	2004	576.57	2006
Japan	454.12	2004	574.33	2006
Korea	421.62	2004	328.43	2006
Mexico	676.48	2004	434.01	2006
Netherlands	493.67	2004	187.99	2006
New Zealand	893.67	2004	441.97	2006
Norway	415.74	2004	219.21	2006
Portugal	524.40	2004	471.49	2006
Spain	670.00	2004	525.13	2006
Sweden	403.15	2004	184.70	2006
Switzerland	499.89	2004	369.24	2006
Turkey	909.43	2004	635.07	2006
United Kingdom	583.76	2004	392.61	2006
United States	487.70	2004	629.04	2006

Source: OECD: Communications Outlook.

Business monthly telephone subscription
Business telephone monthly subscription (US$) as percent of GDP per capita

Country	Actual Values	Year	Actual Values	Year
Australia	0.92	2007	0.92	2007
Austria	0.74	2007	0.74	2007
Belgium	0.70	2007	0.70	2007
Canada	1.02	2007	1.02	2007
Denmark	0.50	2007	0.50	2007
Finland	0.50	2007	0.50	2007
France	0.60	2007	0.60	2007
Germany	0.71	2007	0.71	2007
Greece	0.70	2007	0.70	2007
Iceland	0.65	2007	0.65	2007
Ireland	0.74	2007	0.74	2007
Italy	1.30	2007	1.30	2007
Japan	0.80	2007	0.80	2007
Korea	0.37	2007	0.37	2007
Mexico	2.93	2007	2.93	2007
Netherlands				
New Zealand	1.86	2007	1.86	2007
Norway	0.45	2007	0.45	2007
Portugal	1.31	2007	1.31	2007
Spain	0.73	2007	0.73	2007
Sweden				
Switzerland	0.47	2007	0.47	2007
Turkey	7.06	2007	7.06	2007
United Kingdom	0.81	2007	0.81	2007
United States	1.26	2007	1.26	2007

Source: World Economic Forum (WEF): The Global Information Technology Report.

Monthly charge of residential phone

Country	Actual Values	Year	Actual Values	Year
Australia	547.96	2004	607.56	2006
Austria	378.41	2004	536.27	2006
Belgium	476.06	2004	617.95	2006
Canada	376.73	2004	337.85	2006
Denmark	314.58	2004	395.08	2006
Finland	408.03	2004	557.62	2006
France	422.43	2004	575.20	2006
Germany	392.68	2004	497.88	2006
Greece	399.45	2004	633.46	2006
Iceland	265.79	2004	394.85	2006
Ireland	411.90	2004	502.84	2006
Italy	395.90	2004	580.45	2006
Japan	321.67	2004	456.73	2006
Korea	277.21	2004	425.78	2006
Mexico	514.76	2004	782.16	2006
Netherlands	394.37	2004	534.17	2006
New Zealand	494.75	2004	630.80	2006
Norway	362.95	2004	423.81	2006
Portugal	595.60	2004	758.25	2006
Spain	467.45	2004	545.63	2006
Sweden	297.46	2004	421.95	2006
Switzerland	307.98	2004	434.73	2006
Turkey	646.09	2004	880.94	2006
United Kingdom	330.81	2004	496.72	2006
United States	470.38	2004	402.45	2006

Source: OECD: Communications Outlook.

Infrastructure

Standard access lines
Telecommunications Lines per 100 inhabitants (fixed)

Country	Actual Values	Year	Actual Values	Year
Australia	52.47	2000	49.61	2005
Austria	37.41	2000	31.12	2005
Belgium	39.43	2000	35.42	2005
Canada	63.25	2000	56.56	2005
Denmark	53.05	2000	45.71	2005
Finland	55.04	2000	40.79	2005
France	50.12	2000	46.21	2005
Germany	39.19	2000	31.94	2005
Greece	51.84	2000	44.48	2005
Iceland	51.21	2000	45.38	2005
Ireland	41.95	2000	38.71	2005
Italy	39.46	2000	37.37	2005
Japan	41.17	2000	39.58	2005
Korea	47.49	2000	41.56	2005
Mexico	12.51	2000	18.76	2005
Netherlands	44.42	2000	27.68	2005
New Zealand	45.34	2000	43.30	2005
Norway	37.47	2000	28.10	2005
Portugal	34.91	2000	30.48	2005
Spain	42.47	2000	41.35	2005
Sweden	65.18	2000	57.98	2005
Switzerland	47.07	2000	39.31	2005
Turkey	27.28	2000	26.33	2005
United Kingdom	52.54	2000	48.71	2005
United States	49.34	2000	35.06	2005

Source: OECD: Communication Outlook.

Cellular mobile penetration
Telecommunications Lines per 100 inhabitants (fixed)

Country	Actual Values	Year	Actual Values	Year
Australia	41.57	2000	89.97	2005
Austria	76.35	2000	101.65	2005
Belgium	54.94	2000	91.70	2005
Canada	28.44	2000	51.64	2005
Denmark	63.01	2000	100.92	2005
Finland	72.04	2000	102.66	2005
France	48.89	2000	76.71	2005
Germany	58.65	2000	96.04	2005
Greece	54.34	2000	112.11	2005
Iceland	76.47	2000	102.75	2005
Ireland	53.16	2000	101.55	2005
Italy	74.27	2000	122.16	2005
Japan	52.66	2000	75.51	2005
Korea	57.05	2000	79.39	2005
Mexico	14.27	2000	44.77	2005
Netherlands	69.09	2000	99.83	2005
New Zealand	56.66	2000	101.93	2005
Norway	72.25	2000	102.87	2005
Portugal	65.18	2000	108.51	2005
Spain	59.45	2000	98.38	2005
Sweden	71.82	2000	100.63	2005
Switzerland	64.34	2000	91.11	2005
Turkey	22.33	2000	60.51	2005
United Kingdom	60.09	2000	106.26	2005
United States	38.76	2000	71.80	2005

Source: OECD: Communication Outlook.

Quality of competition in the ISP sector				
Country	Actual Values	Year	Actual Values	Year
Australia	5.37	2005	5.09	2006
Austria	5.77	2005	5.92	2006
Belgium	5.45	2005	5.03	2006
Canada	5.69	2005	5.52	2006
Denmark	5.22	2005	5.48	2006
Finland	5.74	2005	5.57	2006
France	5.45	2005	5.38	2006
Germany	5.72	2005	6.04	2006
Greece	4.29	2005	4.15	2006
Iceland	5.23	2005	5.60	2006
Ireland	4.11	2005	4.06	2006
Italy	4.53	2005	4.51	2006
Japan	6.05	2005	5.87	2006
Korea	6.05	2005	6.19	2006
Mexico	3.90	2005	3.92	2006
Netherlands	5.87	2005	5.97	2006
New Zealand	4.94	2005	3.33	2006
Norway	5.23	2005	5.63	2006
Portugal	4.86	2005	4.69	2006
Spain	4.30	2005	4.27	2006
Sweden	5.55	2005	5.61	2006
Switzerland	4.99	2005	5.43	2006
Turkey	4.26	2005	4.39	2006
United Kingdom	5.73	2005	5.69	2006
United States	6.27	2005	5.59	2006

Source: World Economic Forum (WEF): The Global Information Technology Report.

Broadband access per 100 inhabitants				
Country	Actual Values	Year	Actual Values	Year
Australia	3.50	2003	23.54	2008
Austria	7.60	2003	20.58	2008
Belgium	11.70	2003	26.45	2008
Canada	15.10	2003	27.89	2008
Denmark	13.00	2003	36.72	2008
Finland	9.50	2003	30.69	2008
France	5.90	2003	26.43	2008
Germany	5.60	2003	26.25	2008
Greece	0.10	2003	11.20	2008
Iceland	14.30	2003	32.32	2008
Ireland	0.80	2003	19.11	2008
Italy	4.10	2003	18.22	2008
Japan	10.70	2003	22.97	2008
Korea	24.20	2003	31.18	2008
Mexico	0.40	2003	4.71	2008
Netherlands	11.80	2003	35.53	2008
New Zealand	2.60	2003	20.39	2008
Norway	8.00	2003	33.36	2008
Portugal	4.80	2003	14.82	2008
Spain	5.40	2003	19.83	2008
Sweden	10.70	2003	32.30	2008
Switzerland	10.10	2003	32.70	2008
Turkey	0.30	2003	6.79	2008
United Kingdom	5.40	2003	27.61	2008
United States	9.70	2003	25.02	2008

Source: OECD: Key ICT Indicators.

ICT Competencies among Employees

Information technology skills
Business assessment of the supply of ICT-skilled employees (0-10)

Country	Actual Values	Year	Actual Values	Year
Australia	8.57	2003	7.06	2008
Austria	8.00	2003	8.27	2008
Belgium	7.82	2003	7.71	2008
Canada	8.46	2003	8.04	2008
Denmark	8.18	2003	8.33	2008
Finland	9.41	2003	7.96	2008
France	7.76	2003	7.92	2008
Germany	7.94	2003	7.53	2008
Greece	6.54	2003	6.21	2008
Iceland	8.47	2002	9.39	2007
Ireland	8.11	2003	7.06	2008
Italy	6.13	2003	6.66	2008
Japan	7.33	2003	7.60	2008
Korea	7.67	2003	7.82	2008
Mexico	6.23	2003	5.89	2008
Netherlands	7.80	2003	7.85	2008
New Zealand	7.77	2003	6.22	2008
Norway	8.57	2003	8.14	2008
Portugal	5.94	2003	7.25	2008
Spain	6.23	2003	6.65	2008
Sweden	8.76	2003	8.92	2008
Switzerland	7.78	2003	7.76	2008
Turkey	7.37	2003	7.33	2008
United Kingdom	7.13	2003	7.46	2008
United States	8.75	2003	8.53	2008

Source: IMD: Infrastructure, Technological Infrastructure, Information Technology Skills.

Share of ICT Employment in Business Sector Employment

Country	Actual Values	Year	Actual Values	Year
Australia	4.98	2006	4.98	2006
Austria	5.37	2006	5.37	2006
Belgium	4.91	2006	4.91	2006
Canada	5.42	2006	5.42	2006
Denmark	7.05	2006	7.05	2006
Finland	9.80	2006	9.80	2006
France	6.54	2005	6.54	2005
Germany	5.59	2006	5.59	2006
Greece	2.98	2005	2.98	2005
Iceland				
Ireland	8.33	2006	8.33	2006
Italy	6.32	2006	6.32	2006
Japan	6.14	2005	6.14	2005
Korea	6.18	2006	6.18	2006
Mexico	3.64	2003	3.64	2003
Netherlands	6.31	2006	6.31	2006
New Zealand				
Norway	5.89	2006	5.89	2006
Portugal	2.59	2005	2.59	2005
Spain	3.90	2006	3.90	2006
Sweden	8.73	2005	8.73	2005
Switzerland				
Turkey				
United Kingdom	4.85	2006	4.85	2006
United States	5.52	2006	5.52	2006

Source: OECD: Key ICT Indicators.

Percentage of enterprises with persons employed working part of their time away from enterprise premises and accessing enterprise's IT systems from there				
Country	Actual Values	Year	Actual Values	Year
Australia				
Austria	16	2003	24	2006
Belgium	32	2003	34	2006
Canada				
Denmark	38	2003	55	2006
Finland	42	2003	34	2006
France				
Germany	20	2003	27	2006
Greece	20	2003	22	2006
Iceland	35	2003	51	2006
Ireland	24	2003	29	2006
Italy	7	2003	4	2006
Japan				
Korea				
Mexico				
Netherlands	26	2003	36	2006
New Zealand				
Norway	38	2003	52	2006
Portugal	10	2003	15	2006
Spain	7	2003	11	2006
Sweden	36	2003	42	2006
Switzerland				
Turkey				
United Kingdom	26	2005	35	2006
United States				

Source: Eurostat, Science and Technology.

Digital Consumers

Households with Internet access
Percentage of households having access to the Internet at home

Country	Actual Values	Year	Actual Values	Year
Australia	33.00	2002	56.00	2004
Austria	30.80	2002	60.00	2007
Belgium	50.00	2005	60.00	2007
Canada	48.70	2002	61.00	2005
Denmark	59.00	2002	78.00	2007
Finland	44.30	2002	65.00	2006
France	17.83	2002	49.00	2007
Germany	43.30	2002	71.00	2007
Greece	16.30	2003	25.00	2007
Iceland	80.59	2004	84.00	2007
Ireland	20.40	2002	57.00	2007
Italy	18.80	2002	43.00	2007
Japan	48.80	2002	55.80	2004
Korea	68.80	2003	92.00	2005
Mexico	6.20	2002	8.74	2004
Netherlands	41.00	2002	83.00	2007
New Zealand	37.40	2002	37.40	2002
Norway	60.49	2003	78.00	2007
Portugal	18.00	2002	40.00	2007
Spain	27.55	2003	45.00	2007
Sweden	53.30	2002	79.00	2007
Switzerland	36.50	2002	64.40	2003
Turkey	6.90	2002	8.00	2005
United Kingdom	49.70	2002	67.00	2007
United States	50.50	2002	54.60	2003

Source: Eurostat, Science and Technology.

DSL Internet Subscribers

Country	Actual Values	Year	Actual Values	Year
Australia	2.17	2003	18.31	2007
Austria	3.45	2003	11.43	2007
Belgium	7.02	2003	14.47	2007
Canada	6.26	2003	11.93	2007
Denmark	8.78	2003	21.25	2007
Finland	7.78	2003	24.37	2007
France	5.30	2003	21.44	2007
Germany	5.45	2003	20.15	2007
Greece	0.08	2003	7.07	2007
Iceland	13.80	2003	29.00	2007
Ireland	0.63	2003	11.11	2007
Italy	3.72	2003	15.38	2007
Japan	8.05	2003	10.79	2007
Korea	13.72	2003	10.10	2007
Mexico	0.17	2003	3.51	2007
Netherlands	5.82	2003	20.36	2007
New Zealand	2.23	2003	14.61	2007
Norway	6.05	2003	22.74	2007
Portugal	1.77	2003	9.17	2007
Spain	4.07	2003	13.32	2007
Sweden	6.36	2003	17.95	2007
Switzerland	6.03	2003	20.54	2007
Turkey	0.08	2003	5.10	2007
United Kingdom	3.08	2003	18.44	2007
United States	3.27	2003	9.31	2007

Source: OECD: Key ICT Indicators.

Personal Computers				
Country	Actual Values	Year	Actual Values	Year
Australia	64.93	2001	68.90	2004
Austria	27.86	2001	61.10	2005
Belgium	24.87	2001	42.20	2006
Canada	55.82	2001	94.60	2006
Denmark	51.72	2001	72.70	2006
Finland	36.65	2001	50.00	2005
France	28.56	2001	65.90	2006
Germany	33.27	2001	65.30	2006
Greece	9.73	2001	9.40	2006
Iceland	45.10	2003	53.90	2006
Ireland	25.98	2001	58.90	2006
Italy	15.15	2001	37.00	2005
Japan	38.79	2001	54.10	2004
Korea	23.58	2001	53.20	2006
Mexico	8.56	2001	13.80	2006
Netherlands	42.84	2001	91.20	2006
New Zealand	44.67	2001	54.20	2006
Norway	54.12	2001	63.10	2006
Portugal	13.60	2001	17.10	2006
Spain	13.27	2001	36.90	2006
Sweden	53.70	2001	88.20	2006
Switzerland	43.54	2001	88.30	2006
Turkey	2.65	2001	5.90	2006
United Kingdom	34.82	2001	81.20	2006
United States	81.77	2001	79.90	2006

Source: World Economic Forum (WEF): The Global Competitiveness Report.

Digitalisation of Educational Institutions

Internet access in Schools (1 = very limited, 7 = extensive)				
Country	Actual Values	Year	Actual Values	Year
Australia	5.50	2008	5.50	2008
Austria	6.10	2008	6.10	2008
Belgium	5.10	2008	5.10	2008
Canada	5.80	2008	5.80	2008
Denmark	6.20	2008	6.20	2008
Finland	6.40	2008	6.40	2008
France	4.70	2008	4.70	2008
Germany	4.80	2008	4.80	2008
Greece	3.30	2008	3.30	2008
Iceland	6.40	2008	6.40	2008
Ireland	4.20	2008	4.20	2008
Italy	3.40	2008	3.40	2008
Japan	5.00	2008	5.00	2008
Korea	6.30	2008	6.30	2008
Mexico	3.20	2008	3.20	2008
Netherlands	5.80	2008	5.80	2008
New Zealand	5.30	2008	5.30	2008
Norway	5.40	2008	5.40	2008
Portugal	4.90	2008	4.90	2008
Spain	4.30	2008	4.30	2008
Sweden	6.40	2008	6.40	2008
Switzerland	6.00	2008	6.00	2008
Turkey	3.70	2008	3.70	2008
United Kingdom	5.70	2008	5.70	2008
United States	5.90	2008	5.90	2008

Source: World Economic Forum (WEF), The Global Competitiveness Report.

Share of pupils with a computer available for school work				
Country	Actual Values	Year	Actual Values	Year
Australia	93.90	2003	95.57	2006
Austria	92.97	2003	95.15	2006
Belgium	87.04	2003	92.83	2006
Canada	93.20	2003	93.27	2006
Denmark	93.25	2003	97.76	2006
Finland	87.86	2003	95.19	2006
France	78.60	2003	85.45	2006
Germany	90.91	2003	94.30	2006
Greece	52.67	2003	72.78	2006
Iceland	96.71	2003	97.79	2006
Ireland	79.74	2003	87.25	2006
Italy	77.98	2003	88.76	2006
Japan	45.88	2003	62.18	2006
Korea	94.88	2003	97.13	2006
Mexico	33.15	2003	39.96	2006
Netherlands	95.84	2003	97.06	2006
New Zealand	87.27	2003	92.47	2006
Norway	93.50	2003	95.50	2006
Portugal	74.62	2003	85.87	2006
Spain	78.93	2003	87.40	2006
Sweden	94.88	2003	97.37	2006
Switzerland	86.30	2003	95.51	2006
Turkey	23.23	2003	37.72	2006
United Kingdom	91.29	2003	94.30	2006
United States	87.39	2003	87.97	2006

Source: OECD PISA.

Data Security

Laws relating to ICT
Laws relating to the use of information technology (electronic commerce, digital signatures, consumer protection) are (1 = nonexistent, 7 = welldeveloped and enforced)

Country	Actual Values	Year	Actual Values	Year
Australia	5.62	2005	5.50	2008
Austria	5.24	2005	5.80	2008
Belgium	4.54	2005	4.90	2008
Canada	5.36	2005	5.50	2008
Denmark	5.83	2005	6.10	2008
Finland	5.69	2005	5.60	2008
France	5.34	2005	5.40	2008
Germany	5.58	2005	5.50	2008
Greece	3.51	2005	3.60	2008
Iceland	5.70	2005	5.50	2008
Ireland	5.42	2005	5.00	2008
Italy	4.18	2005	4.20	2008
Japan	4.71	2005	4.80	2008
Korea	5.48	2005	6.00	2008
Mexico	3.84	2005	3.80	2008
Netherlands	5.17	2005	5.30	2008
New Zealand	5.43	2005	5.30	2008
Norway	5.46	2005	5.70	2008
Portugal	4.71	2005	5.10	2008
Spain	4.76	2005	4.80	2008
Sweden	5.07	2005	5.90	2008
Switzerland	5.32	2005	5.60	2008
Turkey	3.85	2005	4.00	2008
United Kingdom	5.71	2005	5.40	2008
United States	5.82	2005	5.60	2008

Source: World Economic Forum (WEF): The Global Competitiveness Report.

Secure Internet servers

Country	Actual Values	Year	Actual Values	Year
Australia	197.96	2001	581.79	2006
Austria	109.06	2001	271.13	2006
Belgium	42.24	2001	141.48	2006
Canada	200.62	2001	643.17	2006
Denmark	98.60	2001	588.27	2006
Finland	128.08	2001	368.12	2006
France	33.72	2001	93.46	2006
Germany	78.53	2001	330.90	2006
Greece	16.24	2001	38.46	2006
Iceland	332.36	2001	1268.70	2006
Ireland	126.11	2001	423.48	2006
Italy	22.16	2001	52.02	2006
Japan	62.87	2001	310.36	2006
Korea	8.58	2001	21.54	2006
Mexico	3.24	2001	9.68	2006
Netherlands	67.74	2001	395.65	2006
New Zealand	203.93	2001	576.92	2006
Norway	110.80	2001	368.10	2006
Portugal	18.96	2001	63.83	2006
Spain	30.06	2001	99.89	2006
Sweden	142.47	2001	394.62	2006
Switzerland	192.69	2001	552.26	2006
Turkey	4.37	2001	23.44	2006
United Kingdom	135.37	2001	548.92	2006
United States	311.85	2001	875.76	2006

Source: OECD: Communications Outlook.

Business assessment of level of data security (0-10)				
Country	Actual Values	Year	Actual Values	Year
Australia	7.72	2003	6.72	2008
Austria	7.84	2003	7.02	2008
Belgium	6.91	2003	6.54	2008
Canada	7.56	2003	6.82	2008
Denmark	8.03	2003	7.85	2008
Finland	8.71	2003	6.54	2008
France	6.48	2003	6.33	2008
Germany	7.63	2003	6.33	2008
Greece	5.38	2003	4.88	2008
Iceland	7.53	2002	7.94	2007
Ireland	7.00	2003	6.04	2008
Italy	5.44	2003	5.69	2008
Japan	5.53	2003	6.29	2008
Korea	4.86	2003	5.02	2008
Mexico	4.59	2003	4.54	2008
Netherlands	7.23	2003	6.63	2008
New Zealand	7.66	2003	6.59	2008
Norway	7.05	2003	6.11	2008
Portugal	5.77	2003	5.92	2008
Spain	5.30	2003	5.55	2008
Sweden	7.76	2003	6.52	2008
Switzerland	7.90	2003	7.12	2008
Turkey	5.08	2003	5.03	2008
United Kingdom	6.99	2003	5.56	2008
United States	6.88	2003	6.78	2008

Source: IMD: Infrastructure, Technological Infrastructure, Cyber Security.

Digitalisation of Public Institutions

Government priotization of ICT
Information and communication technologies (ICT) are an overall priority for the government (1=strongly disagree, 7=strongly agree)

Country	Actual Values	Year	Actual Values	Year
Australia	4.50	2002	4.91	2007
Austria	4.62	2002	5.19	2007
Belgium	4.61	2002	4.85	2007
Canada	5.25	2002	5.07	2007
Denmark	5.25	2002	6.01	2007
Finland	5.73	2002	5.64	2007
France	4.52	2002	4.99	2007
Germany	5.02	2002	5.14	2007
Greece	4.10	2002	4.25	2007
Iceland	4.80	2005	4.80	2005
Ireland	5.38	2002	4.88	2007
Italy	4.30	2002	3.94	2007
Japan	5.51	2002	5.47	2007
Korea	5.31	2002	5.89	2007
Mexico	4.58	2002	4.47	2007
Netherlands	4.62	2002	5.13	2007
New Zealand	4.24	2002	4.79	2007
Norway	4.30	2002	5.30	2007
Portugal	4.73	2002	5.84	2007
Spain	4.93	2002	4.51	2007
Sweden	5.43	2002	5.67	2007
Switzerland	5.01	2002	5.23	2007
Turkey	3.71	2002	4.46	2007
United Kingdom	4.88	2002	5.33	2007
United States	5.31	2002	5.42	2007

Source: World Economic Forum (WEF): The Global Competitiveness Report.

Importance of ICT to government's vision of the future

Country	Actual Values	Year	Actual Values	Year
Australia	4.54	2005	4.43	2007
Austria	4.48	2005	4.71	2007
Belgium	4.64	2005	4.18	2007
Canada	4.81	2005	4.31	2007
Denmark	5.90	2005	5.51	2007
Finland	5.74	2005	5.10	2007
France	4.48	2005	4.56	2007
Germany	4.08	2005	4.12	2007
Greece	4.00	2005	3.73	2007
Iceland	5.37	2005	5.37	2007
Ireland	5.16	2005	4.51	2007
Italy	4.16	2005	3.55	2007
Japan	4.73	2005	4.68	2007
Korea	5.41	2005	5.50	2007
Mexico	4.31	2005	4.13	2007
Netherlands	4.67	2005	4.31	2007
New Zealand	4.51	2005	4.24	2007
Norway	4.92	2005	5.01	2007
Portugal	5.17	2005	5.73	2007
Spain	4.44	2005	3.99	2007
Sweden	4.95	2005	4.98	2007
Switzerland	4.26	2005	4.45	2007
Turkey	3.86	2005	3.98	2007
United Kingdom	5.05	2005	4.41	2007
United States	4.93	2005	4.64	2007

Source: World Economic Forum (WEF): The Global Information Technology Report.

ICT pervasiveness
The presence of ICT (computers, PCs, networks, etc.) in government offices in your country is (1=very rare, 7=commonplace and pervasive)

Country	Actual Values	Year	Actual Values	Year
Australia	5.35	2002	5.54	2007
Austria	5.11	2002	5.86	2007
Belgium	4.63	2002	4.34	2007
Canada	5.91	2002	5.33	2007
Denmark	5.99	2002	5.95	2007
Finland	6.73	2002	5.82	2007
France	4.83	2002	4.95	2007
Germany	5.08	2002	5.34	2007
Greece	3.57	2002	3.90	2007
Iceland	6.70	2005	5.83	2007
Ireland	5.09	2002	5.29	2007
Italy	4.58	2002	4.46	2007
Japan	4.01	2002	5.00	2007
Korea	5.26	2002	6.11	2007
Mexico	4.26	2002	4.25	2007
Netherlands	5.18	2002	5.53	2007
New Zealand	4.62	2002	5.42	2007
Norway	5.14	2002	5.67	2007
Portugal	4.79	2002	5.16	2007
Spain	4.72	2002	5.00	2007
Sweden	5.98	2002	5.90	2007
Switzerland	4.95	2002	5.97	2007
Turkey	3.97	2002	4.41	2007
United Kingdom	5.32	2002	5.32	2007
United States	5.94	2002	5.44	2007

Source: World Economic Forum (WEF): The Global Information Technology Report.

Percentage of Public services with full availability on-line

Country	Actual Values	Year	Actual Values	Year
Australia				
Austria	49.50	2002	84.00	2006
Belgium	42.50	2002	46.00	2006
Canada				
Denmark	69.40	2002	64.00	2006
Finland	69.50	2002	62.00	2006
France	61.50	2002	66.00	2006
Germany	46.40	2002	47.00	2006
Greece	53.90	2002	31.00	2006
Iceland	48.00	2006	48.00	2006
Ireland	84.70	2002	50.00	2006
Italy	51.20	2002	58.00	2006
Japan				
Korea				
Mexico				
Netherlands	42.00	2002	53.00	2006
New Zealand				
Norway	72.00	2006	72.00	2006
Portugal	56.30	2002	60.00	2006
Spain	58.40	2002	55.00	2006
Sweden	81.40	2002	73.50	2006
Switzerland	10.00	2006	10.00	2006
Turkey				
United Kingdom	62.90	2002	70.50	2006
United States				

Source: European Commission.

E-participation index				
Country	Actual Values	Year	Actual Values	Year
Australia	0.67	2004	0.89	2008
Austria	0.44	2004	0.48	2008
Belgium	0.61	2004	0.41	2008
Canada	0.90	2004	0.61	2008
Denmark	0.74	2004	0.93	2008
Finland	0.57	2004	0.56	2005
France	0.46	2004	0.93	2008
Germany	0.59	2004	0.56	2005
Greece	0.11	2004	0.11	2004
Iceland	0.11	2004	0.11	2004
Ireland	0.23	2004	0.23	2004
Italy	0.23	2004	0.23	2004
Japan	0.28	2004	0.61	2008
Korea	0.77	2004	0.98	2008
Mexico	0.77	2004	0.75	2008
Netherlands	0.80	2004	0.52	2008
New Zealand	0.77	2004	0.80	2008
Norway	0.36	2004	0.52	2008
Portugal	0.21	2004	0.21	2004
Spain	0.03	2004	0.36	2008
Sweden	0.57	2004	0.66	2008
Switzerland	0.30	2004	0.43	2005
Turkey	0.30	2004	0.30	2004
United Kingdom	1.00	2004	0.43	2008
United States	0.93	2004	1.00	2008

Source: World Economic Forum (WEF): The Global Information Technology Report.

E-government readiness index				
Country	Actual Values	Year	Actual Values	Year
Australia	0.83	2004	0.81	2008
Austria	0.70	2004	0.74	2008
Belgium	0.77	2004	0.68	2008
Canada	0.87	2004	0.82	2008
Denmark	0.93	2004	0.91	2008
Finland	0.81	2004	0.75	2008
France	0.54	2004	0.80	2008
Germany	0.80	2004	0.71	2008
Greece	0.41	2004	0.57	2008
Iceland	0.57	2004	0.72	2008
Ireland	0.66	2004	0.73	2008
Italy	0.55	2004	0.67	2008
Japan	0.63	2004	0.77	2008
Korea	0.95	2004	0.83	2008
Mexico	0.78	2004	0.59	2008
Netherlands	0.72	2004	0.86	2008
New Zealand	0.74	2004	0.74	2008
Norway	0.69	2004	0.89	2008
Portugal	0.39	2004	0.65	2008
Spain	0.39	2004	0.72	2008
Sweden	0.77	2004	0.92	2008
Switzerland	0.59	2004	0.76	2008
Turkey	0.53	2004	0.53	2004
United Kingdom	0.97	2004	0.79	2008
United States	1.00	2004	0.86	2008

Source: World Economic Forum (WEF): The Global Information Technology Report.

Entrepreneurship

Performance

Growth

Growth in new companies, turnover
Measures the share of young firms with a growth rate in turnover higher than 60 % over a three-year period and with a growth rate of at least 20 % each year

Country	Actual Values	Year	Actual Values	Year
Australia				
Austria	3.85	2002	7.00	2006
Belgium	7.57	2002	8.44	2006
Canada				
Denmark	4.94	2002	8.02	2006
Finland	7.11	2002	13.45	2006
France	7.92	2002	8.52	2006
Germany	3.67	2002	9.73	2006
Greece	9.57	2002	6.91	2006
Iceland				
Ireland	19.23	2002	18.87	2006
Italy	7.87	2002	7.56	2006
Japan	20.10	2002	29.74	2006
Korea	35.18	2002	26.80	2006
Mexico				
Netherlands	5.67	2002	13.30	2006
New Zealand				
Norway	5.69	2002	12.48	2006
Portugal	9.09	2002	10.11	2006
Spain	12.75	2002	12.55	2006
Sweden	9.14	2002	11.10	2006
Switzerland	12.90	2002	4.69	2006
Turkey				
United Kingdom	13.39	2002	14.30	2006
United States	27.40	2002	17.88	2006

Source: Bureau Van Dijk and own calculations.

Growth in new companies, employee
Measures the share of young firms with a growth rate in employees higher than 60% over a three-year period and with a growth rate of at least 20 % each year

Country	Actual Values	Year	Actual Values	Year
Australia				
Austria	0.62	2002	3.32	2006
Belgium	4.78	2002	6.47	2006
Canada				
Denmark	2.30	2002	4.58	2006
Finland	3.27	2002	4.61	2006
France	3.09	2002	2.55	2006
Germany	0.91	2002	4.51	2006
Greece				
Iceland				
Ireland				
Italy	7.77	2002	3.14	2006
Japan	3.96	2002	5.44	2006
Korea	10.14	2002	12.82	2006
Mexico				
Netherlands	3.40	2002	1.20	2006
New Zealand				
Norway	2.41	2002	0.70	2006
Portugal				
Spain	4.60	2002	5.94	2006
Sweden	4.40	2002	6.01	2006
Switzerland	4.95	2002	7.59	2006
Turkey				
United Kingdom	6.96	2002	8.05	2006
United States	5.63	2002	9.43	2005

Source: Bureau Van Dijk and own calculations.

Share of high-growth enterprise – employee				
Country	Actual Values	Year	Actual Values	Year
Australia				
Austria				
Belgium				
Canada	3.9	2004	3.7	
Denmark	2.9	2005	2.9	
Finland	2.9	2005	2.9	
France				
Germany				
Greece				
Iceland				
Ireland				
Italy	3.0	2005	3.0	
Japan				
Korea				
Mexico				
Netherlands	3.6	2005	3.6	
New Zealand	4.3	2005	3.5	
Norway				
Portugal				
Spain	4.2	2005	4.2	
Sweden				
Switzerland				
Turkey				
United Kingdom				
United States	5.2	2005	5.2	

Source: OECD: The Entrepreneurship Indicators Programme.

Share of high-growth enterprises – turnover				
Country	Actual Values	Year	Actual Values	Year
Australia				
Austria				
Belgium				
Canada	6.7	2004	8.1	2006
Denmark	8.8	2005	8.8	2005
Finland	9.7	2005	9.7	2005
France				
Germany				
Greece				
Iceland				
Ireland				
Italy	6.3	2005	6.3	2005
Japan				
Korea				
Mexico				
Netherlands	8.6	2005	8.6	2005
New Zealand				
Norway				
Portugal				
Spain				
Sweden				
Switzerland				
Turkey				
United Kingdom				
United States				

Source: OECD: The Entrepreneurship Indicators Programme.

Start-ups

Business Demography Indicators – birth rates (Entry Rates)
Number of new entreprises as a share of the company base (percentage)

Country	Actual Values	Year	Actual Values	Year
Australia				
Austria	8.29	2005	8.29	2005
Belgium				
Canada				
Denmark	9.98	2000	13.20	2005
Finland	7.12	2000	8.33	2005
France				
Germany	10.01	2004	10.01	2004
Greece				
Iceland				
Ireland				
Italy	7.76	2000	7.77	2005
Japan				
Korea				
Mexico				
Netherlands	9.45	2000	9.81	2005
New Zealand				
Norway	10.29	2000	11.84	2005
Portugal	8.00	1999	14.21	2006
Spain	9.65	2000	10.43	2005
Sweden	7.03	2000	7.02	2005
Switzerland	3.50	2003	3.64	2004
Turkey				
United Kingdom	12.06	2000	13.68	2005
United States				

Source: Eurostat.

Employer enterprise – birth rates
The employer enterprise birth rate refers to the number of employer enterprise births, as a percentage of the population of active enterprises with at least one employee

Country	Actual Values	Year	Actual Values	Year
Australia				
Austria	8.9	2005	8.9	2005
Belgium				
Canada	9.5	2003	11.6	2006
Denmark	10.8	2004	12.0	2005
Finland	10.6	2005	10.6	2005
France				
Germany				
Greece				
Iceland				
Ireland				
Italy	9.2	2005	9.2	2005
Japan				
Korea				
Mexico				
Netherlands	10.3	2005	10.3	2005
New Zealand	12.7	2003	12.0	2007
Norway				
Portugal				
Spain	12.3	2005	12.3	2005
Sweden				
Switzerland				
Turkey				
United Kingdom				
United States	9.1	2003	9.7	2004

Source: OECD The Entrepreneurship Indicators Programme.

Framework Conditions

Technology Transfer Regulation

University/industry research collaboration
In the area of R&D, business executives' perceptions of the collaboration between the business community and local universities is (1 = minimal or nonexistent, 7 = intensive and ongoing)

Country	Actual Values	Year	Actual Values	Year
Australia	4.40	2003	4.80	2008
Austria	4.60	2003	5.00	2008
Belgium	5.20	2003	5.20	2008
Canada	4.90	2003	5.00	2008
Denmark	4.60	2003	5.30	2008
Finland	5.90	2003	5.50	2008
France	3.80	2003	3.90	2008
Germany	5.10	2003	5.40	2008
Greece	3.70	2003	2.90	2008
Iceland	4.30	2003	5.00	2008
Ireland	5.20	2003	4.90	2008
Italy	3.40	2003	3.10	2008
Japan	4.10	2003	4.60	2008
Korea	4.30	2003	5.10	2008
Mexico	3.20	2003	3.00	2008
Netherlands	4.80	2003	5.10	2008
New Zealand	4.10	2003	4.30	2008
Norway	4.10	2003	4.90	2008
Portugal	3.40	2003	3.60	2008
Spain	3.90	2003	3.60	2008
Sweden	5.40	2003	5.60	2008
Switzerland	4.90	2003	5.60	2008
Turkey	2.40	2003	3.40	2008
United Kingdom	4.90	2003	5.10	2008
United States	5.60	2003	5.80	2008

Source: World Economic Forum (WEF): The Global Competitiveness Report.

Entry Barriers

IPR
Average of two: 1. Property rights, including over financial assets (1 = are poorly defined and not protected by law, 7 = are clearly defined and well protected by law) and 2. Intellectual property protection in your country (1 = is weak or nonexixstent, 7 = is equal to the world's most stringent)

Country	Actual Values	Year	Actual Values	Year
Australia	5.95	2004	6.10	2008
Austria	6.25	2004	6.40	2008
Belgium	5.40	2004	5.75	2008
Canada	5.45	2004	6.00	2008
Denmark	6.30	2004	6.40	2008
Finland	6.30	2004	6.35	2008
France	5.75	2004	6.05	2008
Germany	6.15	2004	6.25	2008
Greece	4.60	2004	4.60	2008
Iceland	5.95	2004	6.20	2008
Ireland	5.10	2004	6.00	2008
Italy	4.90	2004	4.55	2008
Japan	4.95	2004	6.00	2008
Korea	4.85	2004	5.20	2008
Mexico	4.30	2004	3.60	2008
Netherlands	6.00	2004	6.10	2008
New Zealand	5.90	2004	6.00	2008
Norway	5.30	2004	6.10	2008
Portugal	4.95	2004	5.25	2008
Spain	5.05	2004	5.05	2008
Sweden	6.00	2004	6.25	2008
Switzerland	6.20	2004	6.50	2008
Turkey	3.45	2004	3.60	2008
United Kingdom	6.20	2004	5.45	2008
United States	6.20	2004	5.70	2008

Source: World Economic Forum (WEF): The Global Competitiveness Report.

Minimum of capital required for starting a business
The minimum capital required as a percentage of income per capita

Country	Actual Values	Year	Actual Values	Year
Australia	0.0	2003	0.0	2007
Austria	65.6	2003	55.5	2007
Belgium	55.5	2003	20.1	2007
Canada	0.0	2003	0.0	2007
Denmark	49.8	2003	40.7	2007
Finland	29.8	2003	7.7	2007
France	29.2	2003	0.0	2007
Germany	47.6	2005	42.8	2007
Greece	135.2	2003	104.1	2007
Iceland	49.1	2003	14.10	2007
Ireland	0.0	2003	0.0	2007
Italy	22.1	2003	9.8	2007
Japan	74.9	2003	0.0	2007
Korea	0.0	2003	296.0	2007
Mexico	16.4	2003	11.6	2007
Netherlands	67.2	2003	52.9	2007
New Zealand	0.0	2003	0.0	2007
Norway	29.8	2003	23.4	2007
Portugal	40.4	2003	34.7	2007
Spain	17.9	2003	13.7	2007
Sweden	38.5	2003	31.1	2007
Switzerland	16.5	2003	13.9	2007
Turkey	31.6	2003	16.2	2007
United Kingdom	0.0	2003	0.0	2007
United States	0.0	2003	0.0	2007

Source: World Bank.

Access to Foreign Markets

Import burdens
Calculated as an average of: 1. Trading Across borders – Documents for import; 2. Trading Across borders – Time for import; 3. Trading Across borders – Cost to import

Country	Actual Values	Year	Actual Values	Year
Australia	41.97	2005	42.33	2007
Austria	34.39	2005	24.96	2007
Belgium	12.30	2005	39.15	2007
Canada	33.18	2005	32.58	2007
Denmark	15.79	2005	2.01	2007
Finland	14.57	2005	17.88	2007
France	72.25	2005	36.13	2007
Germany	25.65	2005	22.14	2007
Greece	53.86	2005	64.12	2007
Iceland	32.13	2005	27.35	2007
Ireland	46.24	2005	29.31	2007
Italy	51.73	2005	47.61	2007
Japan	41.93	2005	32.92	2007
Korea	20.87	2005	33.02	2007
Mexico	36.99	2005	73.94	2007
Netherlands	33.81	2005	24.64	2007
New Zealand	40.81	2005	25.76	2007
Norway	18.54	2005	10.50	2007
Portugal	59.41	2005	52.94	2007
Spain	10.88	2005	50.62	2007
Sweden	25.46	2005	4.85	2007
Switzerland	25.46	2005	34.68	2007
Turkey	20.08	2005	58.41	2007
United Kingdom	35.02	2005	32.97	2007
United States	28.00	2005	25.72	2007

Source: World Bank.

Export burdens
Calculate as an average of: 1. Trading Across borders – Documents required to export the goods; 2. Trading Across borders – Signatures required to export the goods; 3. Trading Across borders – Time necessary to comply with all procedures required to export goods

Country	Actual Values	Year	Actual Values	Year
Australia	52.38	2005	46.07	2007
Austria	38.78	2005	25.28	2007
Belgium	13.90	2005	46.67	2007
Canada	28.10	2005	30.59	2007
Denmark	19.53	2005	11.72	2007
Finland	23.51	2005	13.33	2007
France	77.90	2005	35.51	2007
Germany	33.39	2005	20.71	2007
Greece	55.57	2005	57.99	2007
Iceland	53.07	2005	34.72	2007
Ireland	13.89	2005	30.59	2007
Italy	41.68	2005	66.27	2007
Japan	48.00	2005	32.74	2007
Korea	49.06	2005	27.51	2007
Mexico	33.33	2005	61.58	2007
Netherlands	45.56	2005	22.99	2007
New Zealand	28.10	2005	50.28	2007
Norway	27.06	2005	14.44	2007
Portugal	38.73	2005	47.85	2007
Spain	11.11	2005	48.05	2007
Sweden	37.02	2005	17.32	2007
Switzerland	37.02	2005	36.44	2007
Turkey	22.23	2005	60.90	2007
United Kingdom	48.07	2005	36.36	2007
United States	44.83	2005	25.25	2007

Source: World Bank.

Loans

Private credit
The indicator measures the ratio of credit towards the private sector from deposittaking financial institutions relative to GDP

Country	Actual Values	Year	Actual Values	Year
Australia	0.99	2004	1.10	2006
Austria	1.05	2004	1.15	2006
Belgium	0.72	2004	0.83	2006
Canada	1.70	2004	1.95	2006
Denmark	1.59	2004	1.85	2006
Finland	0.68	2004	0.78	2006
France	0.90	2004	0.99	2006
Germany	1.12	2004	1.10	2006
Greece	0.61	2004	0.72	2006
Iceland	1.65	2004	3.27	2006
Ireland	1.36	2004	1.83	2006
Italy	0.85	2004	0.96	2006
Japan	1.75	2004	1.82	2006
Korea	0.98	2004	1.02	2006
Mexico	0.17	2004	0.22	2006
Netherlands	1.58	2004	1.76	2006
New Zealand	1.22	2004	1.44	2006
Norway				
Portugal	1.41	2004	1.57	2006
Spain	1.25	2004	1.67	2006
Sweden	1.05	2004	1.17	2006
Switzerland	1.60	2004	1.74	2006
Turkey	0.23	2004	0.34	2006
United Kingdom	1.54	2004	1.76	2006
United States	1.91	2004	2.01	2006

Source: IMF: International Financial Statistics.

Interest rate spread
The indicator measures the lending rate minus deposit rate based on an average of annual rates for each country

Country	Actual Values	Year	Actual Values	Year
Australia	5.10	2002	5.35	2007
Austria				
Belgium	4.40	2000	5.24	2003
Canada	3.38	2002	4.02	2007
Denmark	4.93	2000	4.70	2002
Finland	3.98	2000	2.66	2004
France	4.08	2000	4.35	2004
Germany	6.23	2000	7.04	2002
Greece	6.18	2000	4.31	2003
Iceland	6.20	2000	7.17	2004
Ireland	4.67	2000	2.64	2005
Italy	5.19	2000	4.88	2003
Japan	1.83	2002	1.08	2007
Korea	1.92	2001	1.48	2006
Mexico	4.45	2002	4.36	2007
Netherlands	1.19	2002	0.71	2007
New Zealand	4.50	2002	5.04	2007
Norway	2.20	2000	2.21	2005
Portugal				
Spain	2.22	2000	1.81	2002
Sweden	3.68	2000	2.53	2005
Switzerland	3.50	2002	1.02	2007
Turkey				
United Kingdom				
United States	2.95	2002	2.78	2007

Source: IMF: International Financial Statistics.

Legal rights index
The indicator measures the degree to which collateral and bankruptcy laws protect the rights of borrowers and lenders and thus facilitate lending

Country	Actual Values	Year	Actual Values	Year
Australia	9	2004	9	2008
Austria	5	2004	5	2008
Belgium	7	2004	5	2008
Canada	7	2004	7	2008
Denmark	7	2004	8	2008
Finland	6	2004	6	2008
France	3	2004	6	2008
Germany	8	2004	8	2008
Greece	1	2004	3	2008
Iceland	7	2005	7	2008
Ireland	8	2004	8	2008
Italy	3	2004	3	2008
Japan	6	2004	6	2008
Korea	6	2004	5	2008
Mexico	2	2004	3	2008
Netherlands	9	2004	7	2008
New Zealand	9	2004	9	2008
Norway	6	2004	6	2008
Portugal	5	2004	4	2008
Spain	5	2004	6	2008
Sweden	6	2004	6	2008
Switzerland	6	2004	6	2008
Turkey	1	2004	3	2008
United Kingdom	10	2004	10	2008
United States	7	2004	7	2008

Source: World Bank.

Ease of access to loans
The indicator measures how easy is it to obtain a bank loan in your country with only a bood business plan and no collateral (1 = impossible, 7 = easy)

Country	Actual Values	Year	Actual Values	Year
Australia	4.80	2004	4.90	2008
Austria	3.70	2004	4.10	2008
Belgium	4.20	2004	4.40	2008
Canada	4.10	2004	4.40	2008
Denmark	5.10	2004	5.40	2008
Finland	5.20	2004	5.40	2008
France	4.20	2004	3.70	2008
Germany	3.50	2004	3.80	2008
Greece	3.80	2004	3.60	2008
Iceland	4.80	2004	4.60	2008
Ireland	5.00	2004	4.60	2008
Italy	3.50	2004	2.50	2008
Japan	2.50	2004	3.40	2008
Korea	3.70	2004	4.40	2008
Mexico	2.30	2004	2.80	2008
Netherlands	4.40	2004	5.20	2008
New Zealand	4.60	2004	4.80	2008
Norway	4.70	2004	5.30	2008
Portugal	3.90	2004	3.90	2008
Spain	3.80	2004	3.70	2008
Sweden	4.80	2004	4.90	2008
Switzerland	3.90	2004	4.10	2008
Turkey	2.70	2004	3.30	2008
United Kingdom	5.10	2004	4.80	2008
United States	4.60	2004	4.80	2008

Source: World Economic Forum (WEF): The Global Competitiveness Report.

Country credit rating				
Country	Actual Values	Year	Actual Values	Year
Australia	84.50	2002	90.20	2007
Austria	90.70	2002	94.40	2007
Belgium	89.50	2002	92.10	2007
Canada	89.40	2002	94.40	2007
Denmark	90.50	2002	94.70	2007
Finland	91.10	2002	95.00	2007
France	92.90	2002	94.00	2007
Germany	94.00	2002	94.80	2007
Greece	75.30	2002	79.70	2007
Iceland	71.20	2001	80.80	2006
Ireland	88.50	2002	93.10	2007
Italy	86.20	2002	85.40	2007
Japan	82.70	2002	89.80	2007
Korea	65.60	2002	79.40	2007
Mexico	59.00	2002	70.00	2007
Netherlands	94.60	2002	94.80	2007
New Zealand	81.20	2002	86.80	2007
Norway	93.10	2002	96.00	2007
Portugal	84.20	2002	84.40	2007
Spain	87.00	2002	91.10	2007
Sweden	89.30	2002	94.50	2007
Switzerland	96.20	2002	96.40	2007
Turkey	33.80	2002	51.70	2007
United Kingdom	94.10	2002	94.40	2007
United States	93.10	2002	94.10	2007

Source: IMD: Competitivenes Yearbook.

Venture Capital

Venture capital – early stage
The indicator measures the total early stage venture capital investment per year as a share of GDP

Country	Actual Values	Year	Actual Values	Year
Australia	0.02	2003	0.04	2007
Austria	0.01	2002	0.01	2007
Belgium	0.04	2002	0.03	2007
Canada	0.07	2003	0.04	2007
Denmark	0.07	2002	0.05	2007
Finland	0.07	2002	0.04	2007
France	0.03	2002	0.02	2007
Germany	0.03	2002	0.02	2007
Greece	0.01	2002	0.00	2007
Iceland	0.29	2000	0.01	2003
Ireland	0.02	2002	0.02	2007
Italy	0.01	2002	0.00	2007
Japan	0.01	2000	0.00	2006
Korea	0.11	2000	0.01	2006
Mexico				
Netherlands	0.04	2002	0.02	2007
New Zealand	0.06	2000	0.04	2001
Norway	0.04	2002	0.07	2007
Portugal	0.01	2002	0.02	2007
Spain	0.02	2002	0.01	2007
Sweden	0.09	2002	0.09	2007
Switzerland	0.04	2002	0.06	2007
Turkey				
United Kingdom	0.04	2002	0.03	2007
United States	0.04	2002	0.03	2007

Source: Eurostat.

Venture capital – expansion stage
The indicator measures the total expansion stage venture capital investment per year as a share of GDP

Country	Actual Values	Year	Actual Values	Year
Australia	0.02	2003	0.00	2007
Austria	0.05	2002	0.03	2007
Belgium	0.05	2002	0.10	2007
Canada	0.06	2003	0.08	2007
Denmark	0.05	2002	0.05	2007
Finland	0.14	2002	0.18	2007
France	0.06	2002	0.07	2007
Germany	0.04	2002	0.04	2007
Greece	0.02	2002	0.01	2007
Iceland	0.42	2000	0.06	2003
Ireland	0.06	2002	0.04	2007
Italy	0.08	2002	0.02	2007
Japan	0.02	2000	0.02	2003
Korea	0.15	2000	0.10	2003
Mexico				
Netherlands	0.16	2002	0.09	2007
New Zealand	0.11	2000	0.08	2001
Norway	0.06	2002	0.08	2007
Portugal	0.04	2002	0.05	2007
Spain	0.09	2002	0.11	2007
Sweden	0.16	2002	0.19	2007
Switzerland	0.05	2002	0.10	2007
Turkey				
United Kingdom	0.14	2002	0.31	2007
United States	0.18	2002	0.12	2007

Source: Eurostat.

Venture capital availability
Entrepreneurs with innovative but risky projects can generally find venture capital in your country (1 = not true, 7 = true)

Country	Actual Values	Year	Actual Values	Year
Australia	4.80	2004	4.40	2008
Austria	3.70	2004	3.80	2008
Belgium	4.20	2004	4.00	2008
Canada	4.10	2004	4.20	2008
Denmark	5.10	2004	4.70	2008
Finland	5.20	2004	4.90	2008
France	4.20	2004	3.90	2008
Germany	3.50	2004	3.90	2008
Greece	3.80	2004	3.00	2008
Iceland	4.80	2004	4.10	2008
Ireland	5.00	2004	4.50	2008
Italy	3.50	2004	2.70	2008
Japan	2.50	2004	3.30	2008
Korea	3.70	2004	4.30	2008
Mexico	2.30	2004	2.50	2008
Netherlands	4.40	2004	4.90	2008
New Zealand	4.60	2004	4.20	2008
Norway	4.70	2004	5.00	2008
Portugal	3.90	2004	3.40	2008
Spain	3.80	2004	3.90	2008
Sweden	4.80	2004	4.90	2008
Switzerland	3.90	2004	4.10	2008
Turkey	2.70	2004	2.50	2008
United Kingdom	5.10	2004	4.80	2008
United States	5.60	2007	5.10	2008

Source: World Economic Forum (WEF): World Competitiveness Report.

Exit Markets

Capitalisation of secondary stock market
The indicator measures the capitalisation of the secondary stock market (the value of the issued shares on the market) in percentage of GDP

Country	Actual Values	Year	Actual Values	Year
Australia	7.79	2003	7.47	2008
Austria	4.46	2003	6.58	2008
Belgium	6.00	2003	6.56	2008
Canada	7.09	2003	6.88	2008
Denmark	5.94	2003	6.98	2008
Finland	7.19	2003	6.04	2008
France	6.45	2003	6.44	2008
Germany	6.43	2003	6.39	2008
Greece	4.73	2003	5.43	2008
Iceland				
Ireland	5.89	2003	6.00	2008
Italy	4.02	2003	4.62	2008
Japan	4.37	2003	5.96	2008
Korea	5.06	2003	5.20	2008
Mexico	3.64	2003	4.39	2008
Netherlands	6.74	2003	6.82	2008
New Zealand	6.15	2003	5.96	2008
Norway	5.61	2003	7.54	2008
Portugal	3.03	2003	5.22	2008
Spain	6.09	2003	5.24	2008
Sweden	7.52	2003	7.25	2008
Switzerland	7.13	2003	7.48	2008
Turkey	3.73	2003	4.68	2008
United Kingdom	6.17	2003	6.61	2008
United States	8.04	2003	7.37	2008

Source: World Federation of Exchanges.

Investor protection
The indicator measures the strength of minority shareholder protections against misuse of corporate assets by directors for their personal gain

Country	Actual Values	Year	Actual Values	Year
Australia	5.70	2005	5.70	2008
Austria	3.70	2005	4.00	2008
Belgium	7.00	2005	7.00	2008
Canada	8.30	2005	8.30	2008
Denmark	6.30	2005	6.30	2008
Finland	5.70	2005	5.70	2008
France	5.30	2005	5.30	2008
Germany	5.00	2005	5.00	2008
Greece	3.00	2005	3.00	2008
Iceland	5.00	2005	5.30	2008
Ireland	8.30	2005	8.30	2008
Italy	5.00	2005	5.70	2008
Japan	7.00	2005	7.00	2008
Korea	5.30	2005	5.30	2008
Mexico	6.00	2005	6.00	2008
Netherlands	4.70	2005	4.70	2008
New Zealand	9.70	2005	9.70	2008
Norway	6.70	2005	6.70	2008
Portugal	6.00	2005	6.00	2008
Spain	5.00	2005	5.00	2008
Sweden	5.70	2005	5.70	2008
Switzerland	3.00	2005	3.00	2008
Turkey	5.30	2005	5.30	2008
United Kingdom	8.00	2005	8.00	2008
United States	8.30	2005	8.30	2008

Source: World Bank.

Market capitalization of newly listed companies relative to GDP

Country	Actual Values	Year	Actual Values	Year
Australia	0.03	2005	0.02	2007
Austria	0.02	2003	0.03	2007
Belgium				
Canada	0.04	2004	0.04	2007
Denmark	0.00	2003	0.02	2007
Finland	0.01	2003	0.02	2007
France				
Germany	0.00	2003	0.01	2007
Greece	0.00	2003	0.03	2007
Iceland	0.03	2006	0.02	2007
Ireland	0.00	2003	0.04	2007
Italy	0.03	2003	0.02	2007
Japan	0.02	2003	0.01	2007
Korea	0.00	2003	0.04	2007
Mexico	0.00	2006	0.00	2007
Netherlands				
New Zealand	0.01	2003	0.01	2007
Norway	0.04	2003	0.07	2007
Portugal				
Spain	0.02	2003	0.09	2007
Sweden	0.00	2003	0.02	2007
Switzerland	0.00	2003	0.02	2007
Turkey	0.00	2003	0.02	2007
United Kingdom	0.02	2003	0.07	2007
United States	0.01	2003	0.02	2007

Source: World Federation of Exchange.

Capitalization of primary stock market

The indicator measures the capitalisation of the primary stock market (the value of the issued shares on the market) in percentage of GDP

Country	Actual Values	Year	Actual Values	Year
Australia	0.83	2001	1.69	2007
Austria	0.15	2001	0.77	2007
Belgium				
Canada	0.92	2001	1.78	2007
Denmark	0.53	2001	1.73	2007
Finland	1.45	2001	1.73	2007
France				
Germany	0.50	2001	0.77	2007
Greece	0.70	2001	0.73	2007
Iceland	1.27	2006	1.73	2007
Ireland	0.63	2001	0.80	2007
Italy	0.45	2001	0.62	2007
Japan	0.63	2001	1.04	2007
Korea	0.41	2001	0.96	2007
Mexico	0.42	2006	0.30	2007
Netherlands				
New Zealand	0.43	2001	0.43	2007
Norway	0.37	2001	1.46	2007
Portugal				
Spain	0.62	2001	1.37	2007
Sweden	1.18	2001	1.73	2007
Switzerland	2.32	2001	4.42	2007
Turkey	0.04	2001	0.45	2007
United Kingdom	1.53	2001	1.87	2007
United States	1.33	2001	1.48	2007

Source: World Federation of Exchange.

Turnover in primary stock market
The indicator measures the total shares traded on the stock market exchange in percentage of GDP

Country	Actual Values	Year	Actual Values	Year
Australia	0.62	2001	1.06	2007
Austria	0.38	2001	0.55	2007
Belgium				
Canada	0.67	2001	0.75	2007
Denmark	0.58	2003	0.79	2005
Finland	0.97	2003	1.08	2005
France				
Germany	0.92	2001	2.05	2007
Greece	0.88	2001	0.64	2007
Iceland				
Ireland	0.51	2001	0.95	2007
Italy	0.97	2001	2.16	2007
Japan	0.61	2001	1.50	2007
Korea	2.99	2001	1.79	2007
Mexico	0.61	2001	0.36	2007
Netherlands				
New Zealand	0.45	2001	0.51	2007
Norway	0.89	2001	1.55	2007
Portugal				
Spain	2.05	2001	1.65	2007
Sweden	1.05	2003	1.07	2005
Switzerland	0.88	2001	1.48	2007
Turkey	1.56	2001	1.03	2007
United Kingdom	0.65	2001	2.68	2007
United States	1.63	2001	1.92	2007

Source: World Federation of Exchange.

Wealth and Bequest Tax

Revenue from bequest tax
The indicator measures the revenue from estate and inheritance taxes in a 3-year moving average as a percentage of GDP

Country	Actual Values	Year	Actual Values	Year
Australia				
Austria	0.00	2004	0.00	2006
Belgium	0.03	2004	0.02	2005
Canada	0.28	2004	0.26	2005
Denmark	0.00	2004	0.00	2006
Finland	0.05	2004	0.00	2006
France	0.11	2004	0.00	2006
Germany	0.01	2004	0.00	2006
Greece	0.07	2004	0.07	2005
Iceland	0.39	2004	0.00	2006
Ireland	0.00	2004	0.01	2006
Italy	0.00	2004	0.00	2006
Japan	0.00	2004	0.00	2006
Korea	0.00	2004	0.00	2006
Mexico				
Netherlands	0.01	2004	0.00	2006
New Zealand				
Norway	0.37	2004	0.00	2006
Portugal				
Spain	0.11	2004	0.00	2006
Sweden	0.14	2004	0.00	2006
Switzerland	0.91	2004	0.00	2006
Turkey	0.00	2005	0.00	2006
United Kingdom	0.00	2004	0.00	2006
United States	0.00	2004	0.00	2006

Source: OECD.

Revenue from net wealth tax
The indicator measures the revenue from net wealth tax in a 3-year moving average as a percentage of GDP

Country	Actual Values	Year	Actual Values	Year
Australia	0.00	1999	0.00	2004
Austria	0.00	2000	0.00	2005
Belgium	0.04	2000	0.04	2005
Canada	0.36	2000	0.26	2005
Denmark	0.00	2000	0.00	2005
Finland	0.10	2000	0.05	2005
France	0.16	2000	0.18	2005
Germany	0.02	2000	0.00	2005
Greece	0.04	2000	0.02	2005
Iceland	0.68	1999	0.33	2004
Ireland	0.00	2000	0.00	2005
Italy	0.02	2000	0.00	2005
Japan	0.00	1999	0.00	2004
Korea	0.02	2000	0.01	2005
Mexico	0.00	2000	0.00	2005
Netherlands	0.14	2000	0.01	2005
New Zealand	0.00	2000	0.00	2005
Norway	0.52	2000	0.56	2005
Portugal	0.00	2000	0.00	2005
Spain	0.18	2000	0.15	2005
Sweden	0.35	2000	0.20	2005
Switzerland	1.33	2000	1.34	2005
Turkey	0.00	2000	0.00	2005
United Kingdom	0.00	2000	0.00	2005
United States	0.00	2000	0.00	2005

Source: OECD.

Capital Taxes

Taxation of dividends – top marginal tax rate
The indicator measures the top marginal tax rate of dividend income

Country	Actual Values	Year	Actual Values	Year
Australia	48.50	2002	46.50	2007
Austria	25.00	2002	25.00	2007
Belgium	15.00	2002	15.00	2007
Canada	46.41	2002	46.41	2007
Denmark	43.00	2002	43.00	2007
Finland	29.00	2002	28.00	2007
France	57.05	2002	48.68	2007
Germany	51.17	2002	47.48	2007
Greece	0.00	2002	0.00	2007
Iceland	10.00	2002	10.00	2007
Ireland	42.00	2002	41.00	2007
Italy	46.10	2002	44.90	2007
Japan	50.00	2002	10.00	2007
Korea	39.60	2002	38.50	2007
Mexico	35.00	2002	28.00	2007
Netherlands	30.00	2002	22.00	2007
New Zealand	39.00	2002	39.00	2007
Norway	28.00	2002	28.00	2007
Portugal	40.00	2002	20.00	2007
Spain	48.00	2002	18.00	2007
Sweden	30.00	2002	30.00	2007
Switzerland	41.01	2002	40.36	2007
Turkey	49.50	2002	35.00	2007
United Kingdom	32.50	2002	32.50	2007
United States	30.62	2002	15.50	2007

Source: OECD: Tax Database.

Taxation of stock options
The indicator measures the effective tax rate of stock options for a hypothetical taxpayer with certain assumptions regarding income, family situation and portfolio development

Country	Actual Values	Year	Actual Values	Year
Australia	0.42	2005	0.42	2005
Austria	0.65	2005	0.65	2005
Belgium	0.50	2005	0.50	2005
Canada	0.46	2005	0.46	2005
Denmark	0.49	2005	0.49	2005
Finland	0.60	2005	0.60	2005
France	0.48	2005	0.48	2005
Germany	0.32	2005	0.32	2005
Greece	0.40	2005	0.40	2005
Iceland	0.39	2005	0.39	2005
Ireland	0.27	2005	0.27	2005
Italy	0.25	2005	0.25	2005
Japan	0.34	2005	0.34	2005
Korea	0.23	2005	0.23	2005
Mexico	0.38	2005	0.38	2005
Netherlands	0.52	2005	0.52	2005
New Zealand	0.55	2005	0.55	2005
Norway	0.50	2005	0.50	2005
Portugal	0.14	2005	0.14	2005
Spain	0.36	2005	0.36	2005
Sweden	0.50	2005	0.50	2005
Switzerland	0.38	2005	0.38	2005
Turkey	0.45	2005	0.45	2005
United Kingdom	0.15	2005	0.15	2005
United States	0.44	2005	0.44	2005

Source: European Commission.

Restart Possibilities

Possibilities of a fresh start
The indicator measures an entrepreneur's possibility to resume running a business after experiencing financial difficulties

Country	Actual Values	Year	Actual Values	Year
Australia	0.77	2005	0.77	2005
Austria	0.67	2005	0.67	2005
Belgium	0.60	2005	0.60	2005
Canada	0.55	2005	0.55	2005
Denmark	0.57	2005	0.57	2005
Finland	0.64	2005	0.64	2005
France	0.76	2005	0.76	2005
Germany	0.53	2005	0.53	2005
Greece	0.60	2005	0.60	2005
Iceland				
Ireland	0.80	2005	0.80	2005
Italy	0.67	2005	0.67	2005
Japan	0.36	2005	0.36	2005
Korea	0.60	2005	0.60	2005
Mexico	0.50	2005	0.50	2005
Netherlands	0.56	2005	0.56	2005
New Zealand	0.72	2005	0.72	2005
Norway	0.42	2005	0.42	2005
Portugal	0.39	2005	0.39	2005
Spain	0.74	2005	0.74	2005
Sweden	0.35	2005	0.35	2005
Switzerland	0.47	2005	0.47	2005
Turkey	0.43	2005	0.43	2005
United Kingdom	0.82	2005	0.82	2005
United States				

Source: OECD.

Entrepreneurship Education

Entrepreneurship education at primary education
The indicator measures the perception of entrepreneurial experts of the quantity and quality of entrepreneurship education in primary and secondary levels of the educational system. Average of answers to five questions

Country	Actual Values	Year	Actual Values	Year
Australia	2.50	2003	2.20	2004
Austria				
Belgium	1.94	2003	1.90	2004
Canada	2.51	2003	2.50	2004
Denmark	2.20	2003	2.20	2004
Finland	2.01	2003	2.30	2004
France	1.38	2003	1.38	2003
Germany	1.80	2003	2.60	2004
Greece	1.90	2004	1.90	2004
Iceland	2.10	2004	2.10	2004
Ireland	2.27	2003	2.10	2004
Italy	2.03	2003	2.03	2003
Japan	1.50	2004	1.50	2004
Korea				
Mexico				
Netherlands	2.47	2003	2.40	2004
New Zealand	2.39	2003	2.20	2004
Norway	2.33	2003	2.40	2004
Portugal	1.60	2004	1.60	2004
Spain	1.82	2003	1.90	2004
Sweden	1.88	2003	1.88	2003
Switzerland	1.68	2003	1.68	2003
Turkey				
United Kingdom	2.14	2003	2.14	2003
United States	2.76	2003	2.60	2004

Source: GEM.

Entrepreneurship education at higher education
The indicator measures the perception of entrepreneurial experts of the quantity and quality of entrepreneurship education at higher levels of the educational system. Average of answers to five questions

Country	Actual Values	Year	Actual Values	Year
Australia	3.07	2003	2.70	2004
Austria				
Belgium	2.94	2003	2.80	2004
Canada	3.35	2003	2.60	2004
Denmark	2.18	2003	2.30	2004
Finland	2.96	2003	2.80	2004
France	3.09	2003	3.09	2003
Germany	2.74	2003	2.74	2003
Greece	2.30	2004	2.30	2004
Iceland	3.00	2004	3.00	2004
Ireland	2.99	2003	2.90	2004
Italy	2.77	2003	2.77	2003
Japan	2.10	2004	2.10	2004
Korea				
Mexico				
Netherlands	2.82	2003	2.50	2004
New Zealand	3.02	2003	2.70	2004
Norway	2.44	2003	2.60	2004
Portugal	2.40	2004	2.40	2004
Spain	2.68	2003	2.70	2004
Sweden	2.52	2003	2.52	2003
Switzerland	3.31	2003	3.31	2003
Turkey				
United Kingdom	2.53	2003	2.53	2003
United States	3.81	2003	3.40	2004

Source: GEM.

Traditional Business Education

Quality of management schools
The indicator measures business executives' perception of the quality of management/business schools (1=limited or poor quality, 7=the best in the world)

Country	Actual Values	Year	Actual Values	Year
Australia	5.2	2003	5.4	2008
Austria	5.0	2003	5.3	2008
Belgium	5.2	2003	5.9	2008
Canada	6.1	2003	5.9	2008
Denmark	5.0	2003	5.6	2008
Finland	5.6	2003	5.5	2008
France	5.9	2003	6.1	2008
Germany	5.0	2003	5.1	2008
Greece	3.5	2003	3.8	2008
Iceland	5.0	2003	5.4	2008
Ireland	5.5	2003	5.4	2008
Italy	4.7	2003	4.2	2008
Japan	4.0	2003	3.8	2008
Korea	4.0	2003	4.8	2008
Mexico	4.2	2003	4.3	2008
Netherlands	5.7	2003	5.5	2008
New Zealand	5.1	2003	5.0	2008
Norway	5.4	2003	5.1	2008
Portugal	4.3	2003	4.6	2008
Spain	5.8	2003	5.9	2008
Sweden	5.7	2003	5.4	2008
Switzerland	6.0	2003	6.0	2008
Turkey	3.9	2003	4.1	2008
United Kingdom	6.2	2003	5.3	2008
United States	6.8	2003	6.0	2008

Source: World Economic Forum (WEF): The Global Competitiveness Report.

Personal Income Tax

Highest marginal income tax plus social contribution
The indicator measures the highest rate of taxation in percentage of the gross wage. The indicator is based on a standard case: single (without children) with high income

Country	Actual Values	Year	Actual Values	Year
Australia	48.50	2003	44.80	2007
Austria	49.80	2003	41.90	2007
Belgium	59.30	2003	69.40	2007
Canada	39.40	2003	36.00	2007
Denmark	62.30	2003	63.00	2007
Finland	50.70	2003	58.50	2007
France	35.60	2003	59.60	2007
Germany	63.20	2003	44.30	2007
Greece	41.10	2003	60.00	2007
Iceland	42.00	2003	37.60	2007
Ireland	44.50	2003	49.00	2007
Italy	55.60	2003	61.10	2007
Japan	32.00	2003	34.00	2007
Korea	23.40	2003	23.90	2007
Mexico	27.00	2003	29.80	2007
Netherlands	52.00	2003	52.00	2007
New Zealand	39.00	2003	39.00	2007
Norway	49.30	2003	53.70	2007
Portugal	35.00	2003	55.60	2007
Spain	33.00	2003	28.00	2007
Sweden	51.20	2003	67.20	2007
Switzerland	35.50	2003	42.80	2007
Turkey	36.80	2003	49.40	2007
United Kingdom	23.00	2003	47.70	2007
United States	39.10	2003	43.30	2007

Source: OECD: Taxing Wages.

Average income tax plus social contributions
The indicator measures the average rate of taxation in percentage of the gross wage. The indicator is based on a standard case: single (without children) with high income

Country	Actual Values	Year	Actual Values	Year
Australia	33.00	2003	28.78	2007
Austria	35.70	2003	37.94	2007
Belgium	47.60	2003	48.79	2007
Canada	27.60	2003	26.92	2007
Denmark	50.10	2003	49.47	2007
Finland	38.30	2003	37.43	2007
France	30.50	2003	33.22	2007
Germany	48.80	2003	45.94	2007
Greece	23.40	2003	32.81	2007
Iceland	35.00	2003	28.37	2007
Ireland	27.60	2003	25.85	2007
Italy	33.90	2003	34.83	2007
Japan	20.50	2003	24.14	2007
Korea	14.50	2003	15.75	2007
Mexico	11.40	2003	13.79	2007
Netherlands	35.30	2003	40.30	2007
New Zealand	26.10	2003	27.29	2007
Norway	36.00	2003	35.86	2007
Portugal	23.40	2003	29.58	2007
Spain	23.70	2003	25.26	2007
Sweden	36.50	2003	37.85	2007
Switzerland	25.70	2003	26.63	2007
Turkey	32.20	2003	32.38	2007
United Kingdom	27.00	2003	30.74	2007
United States	29.60	2003	30.29	2007

Source: OECD: Taxing Wages.

Business Tax

SME tax rates
The indicator measures the corporate SME tax rate

Country	Actual Values	Year	Actual Values	Year
Australia	34.00	2000	30.00	2007
Austria	34.00	2000	25.00	2007
Belgium	24.98	2005	24.98	2007
Canada	18.62	2005	18.62	2007
Denmark	32.00	2000	25.00	2007
Finland	29.00	2000	26.00	2007
France	23.80	2000	15.00	2007
Germany	54.00	2000	38.90	2007
Greece	25.00	2000	25.00	2007
Iceland	30.00	2000	18.00	2007
Ireland	12.50	2000	12.50	2007
Italy	41.30	2000	33.00	2007
Japan	33.30	2000	29.34	2007
Korea	15.00	2004	14.30	2007
Mexico	33.00	2004	28.00	2007
Netherlands	30.00	2000	20.00	2007
New Zealand	33.00	2000	33.00	2007
Norway	28.00	2000	28.00	2007
Portugal	20.00	2004	26.50	2007
Spain	30.00	2000	25.00	2007
Sweden	28.00	2000	28.00	2007
Switzerland	29.40	2000	21.32	2007
Turkey	44.10	2000	20.00	2007
United Kingdom	10.00	2000	20.00	2007
United States	15.00	2004	20.22	2007

Source: OECD: Tax Database.

Taxation of corporate income revenue
The indicator measures the revenue from corporate income tax as percentage of GDP on a three year moving average

Country	Actual Values	Year	Actual Values	Year
Australia	5.14	1999	5.58	2004
Austria	2.32	2000	2.27	2005
Belgium	3.19	2000	3.47	2005
Canada	3.88	2000	3.54	2005
Denmark	2.80	2000	3.63	2005
Finland	4.79	2000	3.41	2005
France	3.13	2000	2.85	2005
Germany	1.39	2000	1.80	2005
Greece	3.09	2000	2.71	2005
Iceland	1.36	1999	1.67	2004
Ireland	3.69	2000	3.61	2005
Italy	3.23	2000	3.01	2005
Japan	3.65	1999	3.78	2004
Korea	2.73	2000	3.81	2005
Mexico				
Netherlands	3.99	2000	3.43	2005
New Zealand	3.90	2000	5.74	2005
Norway	7.46	2000	11.33	2005
Portugal	3.63	2000	3.00	2005
Spain	2.87	2000	3.81	2005
Sweden	3.31	2000	3.58	2005
Switzerland	2.75	2000	2.64	2005
Turkey	2.37	2000	2.17	2005
United Kingdom	3.60	2000	3.44	2005
United States	2.41	2000	3.01	2005

Source: OECD: Tax Revenue as Percent of GDP – 3 Year Moving Average.

Bankruptcy Legislation

Actual cost to close a business
The indicator measures the actual cost to close a business. The cost is measured in percent of estate, based on a standard business closure

Country	Actual Values	Year	Actual Values	Year
Australia	18.00	2003	8.00	2007
Austria	18.00	2003	18.00	2007
Belgium	4.00	2003	4.00	2007
Canada	4.00	2003	4.00	2007
Denmark	8.00	2003	4.00	2007
Finland	1.00	2003	4.00	2007
France	18.00	2003	9.00	2007
Germany	8.00	2003	8.00	2007
Greece	8.00	2003	9.00	2007
Iceland	3.50	2005	4.00	2007
Ireland	8.00	2003	9.00	2007
Italy	18.00	2003	22.00	2007
Japan	4.00	2003	4.00	2007
Korea	4.00	2003	4.00	2007
Mexico	18.00	2003	18.00	2007
Netherlands	1.00	2003	4.00	2007
New Zealand	4.00	2003	4.00	2007
Norway	1.00	2003	1.00	2007
Portugal	8.00	2003	9.00	2007
Spain	8.00	2003	15.00	2007
Sweden	8.00	2003	9.00	2007
Switzerland	4.00	2003	4.00	2007
Turkey	8.00	2003	15.00	2007
United Kingdom	8.00	2003	6.00	2007
United States	4.00	2003	7.00	2007

Source: World Bank.

Actual time to close a business
The indicator measures the time it takes to close a business. Time is recorded in calendar year. The indicator is based on a standard business closure

Country	Actual Values	Year	Actual Values	Year
Australia	1.00	2003	1.00	2007
Austria	1.30	2003	1.10	2007
Belgium	0.90	2003	0.90	2007
Canada	0.80	2003	0.80	2007
Denmark	4.20	2003	1.10	2007
Finland	0.90	2003	0.90	2007
France	2.40	2003	1.90	2007
Germany	1.20	2003	1.20	2007
Greece	2.20	2003	2.00	2007
Iceland	1.00	2005	1.00	2007
Ireland	0.40	2003	0.40	2007
Italy	1.30	2003	1.80	2007
Japan	0.60	2003	0.60	2007
Korea	1.50	2003	1.50	2007
Mexico	2.00	2003	1.80	2007
Netherlands	2.60	2003	1.10	2007
New Zealand	2.00	2003	1.30	2007
Norway	0.90	2003	0.90	2007
Portugal	2.60	2003	2.00	2007
Spain	1.50	2003	1.00	2007
Sweden	2.00	2003	2.00	2007
Switzerland	4.60	2003	3.00	2007
Turkey	1.80	2003	3.30	2007
United Kingdom	1.00	2003	1.00	2007
United States	3.00	2003	1.50	2007

Source: World Bank.

Bankruptcy – Recovery Rate

The indicator measures how many cents on the dollar claimants (creditors, tax authorities, and employees) recover from an insolvent firm

Country	Actual Values	Year	Actual Values	Year
Australia	80.00	2004	79.20	2007
Austria	72.50	2004	72.40	2007
Belgium	86.20	2004	85.50	2007
Canada	89.10	2004	88.80	2007
Denmark	59.80	2004	87.00	2007
Finland	90.20	2004	88.20	2007
France	46.60	2004	47.40	2007
Germany	50.30	2004	53.40	2007
Greece	45.60	2004	44.80	2007
Iceland	81.70	2005	80.30	2007
Ireland	88.90	2004	87.10	2007
Italy	43.50	2004	61.80	2007
Japan	92.40	2004	92.60	2007
Korea	81.10	2004	81.20	2007
Mexico	64.50	2004	63.90	2007
Netherlands	86.20	2004	86.70	2007
New Zealand	71.40	2004	77.10	2007
Norway	87.90	2004	90.70	2007
Portugal	69.90	2004	74.00	2007
Spain	83.40	2004	76.90	2007
Sweden	73.20	2004	74.70	2007
Switzerland	37.00	2004	47.10	2007
Turkey	25.70	2004	20.30	2007
United Kingdom	85.80	2004	84.60	2007
United States	68.20	2004	75.90	2007

Source: World Bank.

Administrative Burdens – Start – Ups

Number of procedures for starting a business
The indicator records all generic procedures that are officially required for an entrepreneur to start an industrial or commercual business

Country	Actual Values	Year	Actual Values	Year
Australia	2	2003	2	2007
Austria	9	2003	8	2007
Belgium	7	2003	3	2007
Canada	2	2003	2	2007
Denmark	4	2003	4	2007
Finland	4	2003	3	2007
France	10	2003	5	2007
Germany	9	2003	9	2007
Greece	16	2003	15	2007
Iceland	5	2005	5	2007
Ireland	3	2003	4	2007
Italy	9	2003	9	2007
Japan	11	2003	8	2007
Korea	12	2003	10	2007
Mexico	7	2003	8	2007
Netherlands	7	2003	6	2007
New Zealand	3	2003	2	2007
Norway	4	2003	6	2007
Portugal	11	2003	7	2007
Spain	11	2003	10	2007
Sweden	3	2003	3	2007
Switzerland	6	2003	6	2007
Turkey	13	2003	6	2007
United Kingdom	6	2003	6	2007
United States	5	2003	6	2007

Source: World Bank.

Number of days for starting a business
The indicator measures the average time spent during each entreprise start-up procedure. Time is recorded in calendar days based on standard assumptions about time; the company and procedure

Country	Actual Values	Year	Actual Values	Year
Australia	2	2003	2	2007
Austria	29	2003	28	2007
Belgium	56	2003	4	2007
Canada	3	2003	3	2007
Denmark	4	2003	6	2007
Finland	33	2003	14	2007
France	53	2003	7	2007
Germany	45	2003	18	2007
Greece	45	2003	38	2007
Iceland	5	2005	5	2007
Ireland	12	2003	13	2007
Italy	23	2003	13	2007
Japan	31	2003	23	2007
Korea	33	2003	17	2007
Mexico	51	2003	27	2007
Netherlands	11	2003	10	2007
New Zealand	3	2003	12	2007
Norway	24	2003	10	2007
Portugal	95	2003	7	2007
Spain	115	2003	47	2007
Sweden	16	2003	15	2007
Switzerland	20	2003	20	2007
Turkey	38	2003	6	2007
United Kingdom	18	2003	13	2007
United States	4	2003	6	2007

Source: World Bank.

Costs Required for starting a Business
The indicator measures the official cost of each procedure in percentage of GNI per capita based on formal legislation and standard assumptions about business and procedures

Country	Actual Values	Year	Actual Values	Year
Australia	2.00	2003	0.80	2007
Austria	6.60	2003	5.40	2007
Belgium	11.30	2003	5.30	2007
Canada	0.60	2003	0.90	2007
Denmark	0.00	2003	0.00	2007
Finland	3.10	2003	1.00	2007
France	3.00	2003	1.10	2007
Germany	5.90	2003	5.70	2007
Greece	69.60	2003	23.30	2007
Iceland	2.90	2005	2.70	2007
Ireland	10.40	2003	0.30	2007
Italy	24.10	2003	18.70	2007
Japan	10.50	2003	7.50	2007
Korea	17.90	2003	16.90	2007
Mexico	18.80	2003	13.30	2007
Netherlands	13.70	2003	6.00	2007
New Zealand	0.20	2003	0.10	2007
Norway	3.90	2003	2.30	2007
Portugal	12.50	2003	3.40	2007
Spain	16.40	2003	15.10	2007
Sweden	0.80	2003	0.60	2007
Switzerland	8.50	2003	2.10	2007
Turkey	37.10	2003	20.70	2007
United Kingdom	1.00	2003	0.80	2007
United States	0.60	2003	0.70	2007

Source: World Bank.

Minimum of capital required for starting a business
The indicatores measures the minimal amount that the entrepreneur needs to deposit in a bank before registration starts in percentage of GNI per capita

Country	Actual Values	Year	Actual Values	Year
Australia	0.0	2003	0.0	2007
Austria	140.8	2003	55.5	2007
Belgium	75.1	2003	20.1	2007
Canada	0.0	2003	0.0	2007
Denmark	52.3	2003	40.7	2007
Finland	32.0	2003	7.7	2007
France	32.10	2003	0.0	2007
Germany	103.8	2003	42.8	2007
Greece	145.3	2003	104.1	2007
Iceland	17.10	2005	14.10	2007
Ireland	0.0	2003	0.0	2007
Italy	49.6	2003	9.8	2007
Japan	71.3	2003	0.0	2007
Korea	402.5	2003	296	2007
Mexico	87.6	2003	11.6	2007
Netherlands	70.7	2003	52.9	2007
New Zealand	0.0	2003	0.0	2007
Norway	33.1	2003	23.4	2007
Portugal	43.4	2003	34.7	2007
Spain	19.6	2003	13.7	2007
Sweden	41.4	2003	31.1	2007
Switzerland	33.8	2003	13.9	2007
Turkey	13.2	2003	16.2	2007
United Kingdom	0.0	2003	0.0	2007
United States	0.0	2003	0.0	2007

Source: World Bank.

Administrative Burdens – Production

Burden of government regulations
Complying with administartive requirements (permits, regulations, reporting) issued by the government in your country is (1=burdensome, 7=not burdensome)

Country	Actual Values	Year	Actual Values	Year
Australia	3.30	2004	3.00	2008
Austria	3.70	2004	3.50	2008
Belgium	2.10	2004	2.70	2008
Canada	3.00	2004	3.50	2008
Denmark	3.60	2004	3.80	2008
Finland	4.70	2004	4.40	2008
France	2.10	2004	2.30	2008
Germany	3.20	2004	3.10	2008
Greece	2.40	2004	2.50	2008
Iceland	4.20	2004	4.70	2008
Ireland	3.40	2004	3.30	2008
Italy	2.40	2004	2.10	2008
Japan	2.80	2004	4.50	2008
Korea	3.20	2004	3.80	2008
Mexico	2.30	2004	2.40	2008
Netherlands	2.70	2004	3.00	2008
New Zealand	2.70	2004	3.30	2008
Norway	3.00	2004	3.40	2008
Portugal	2.80	2004	3.10	2008
Spain	2.70	2004	2.90	2008
Sweden	3.80	2004	3.50	2008
Switzerland	4.20	2004	4.50	2008
Turkey	2.50	2004	2.70	2008
United Kingdom	3.00	2004	3.00	2008
United States	3.40	2004	3.40	2008

Source: World Economic Forum (WEF): World Competitiveness Report.

Time it takes to prepare, file and pay the corporate income tax, the value added tax and social security contributions

Country	Actual Values	Year	Actual Values	Year
Australia	107	2005	107	2007
Austria	272	2005	170	2007
Belgium	160	2005	156	2007
Canada	119	2005	119	2007
Denmark	135	2005	135	2007
Finland	264	2006	269	2007
France	72	2005	132	2007
Germany	105	2005	196	2007
Greece	204	2005	264	2007
Iceland	175	2005	140	2007
Ireland	76	2005	76	2007
Italy	360	2005	360	2007
Japan	315	2005	350	2007
Korea	290	2005	290	2007
Mexico	536	2005	552	2007
Netherlands	700	2005	180	2007
New Zealand	70	2005	70	2007
Norway	87	2005	87	2007
Portugal	328	2005	328	2007
Spain	56	2005	298	2007
Sweden	122	2005	122	2007
Switzerland	63	2005	63	2007
Turkey	254	2005	223	2007
United Kingdom	105	2006	105	2007
United States	325	2005	325	2007

Source: World Bank.

Enforcing contracts

The indicator consists of three indicators (average): 1. Enforcing contracts – number of procedures; 2. Enforcing contracts – time; 3. Enforcing contracts – cost (% of debts)

Country	Actual Values	Year	Actual Values	Year
Australia	17.12	2004	30.96	2008
Austria	33.43	2004	36.79	2008
Belgium	29.06	2004	44.86	2008
Canada	22.09	2004	45.59	2008
Denmark	12.63	2004	49.17	2008
Finland	30.14	2004	35.32	2008
France	43.08	2004	55.50	2008
Germany	39.17	2004	47.44	2008
Greece	33.20	2004	71.20	2008
Iceland	30.11	2007	31.92	2008
Ireland	38.33	2004	40.85	2008
Italy	66.86	2004	63.32	2008
Japan	15.53	2004	41.46	2008
Korea	27.00	2004	38.38	2008
Mexico	67.27	2004	73.26	2008
Netherlands	35.97	2004	46.30	2008
New Zealand	8.52	2004	34.09	2008
Norway	12.02	2004	37.12	2008
Portugal	47.15	2004	57.58	2008
Spain	51.90	2004	73.43	2008
Sweden	22.44	2004	57.56	2008
Switzerland	19.86	2004	47.81	2008
Turkey	30.86	2004	47.65	2008
United Kingdom	27.22	2004	43.37	2008
United States	21.52	2004	34.24	2008

Source: World Bank.

Procedures, time and costs to build a warehouse

The indicator measures an average of three indicators: 1. Average time spent during each procedure; 2. Official cost of each procedure; 3. Number of procedures to build a warehouse

Country	Actual Values	Year	Actual Values	Year
Australia	20.00	2005	32.64	2007
Austria	32.91	2005	31.85	2007
Belgium	31.26	2005	29.19	2007
Canada	24.83	2005	24.22	2007
Denmark	7.24	2005	8.75	2007
Finland	19.31	2005	24.16	2007
France	26.04	2005	20.84	2007
Germany	25.33	2005	19.06	2007
Greece	33.67	2005	30.11	2007
Iceland	26.12	2005	18.44	2007
Ireland	20.43	2005	23.61	2007
Italy	54.00	2005	46.11	2007
Japan	9.84	2005	26.95	2007
Korea	30.43	2005	22.59	2007
Mexico	40.81	2005	25.22	2007
Netherlands	42.61	2005	41.71	2007
New Zealand	2.70	2005	5.99	2007
Norway	16.93	2005	37.01	2007
Portugal	54.91	2005	52.93	2007
Spain	39.91	2005	33.25	2007
Sweden	18.75	2005	20.45	2007
Switzerland	26.86	2005	26.46	2007
Turkey	88.31	2005	71.96	2007
United Kingdom	28.67	2005	31.98	2007
United States	18.15	2005	15.41	2007

Source: World Bank.

Registering property
The indicator measures an average of three indicators:
1. Number of procedures legally required to register property;
2. Time spent in completing the procedures;
3. Registering property costs

Country	Actual Values	Year	Actual Values	Year
Australia	23.72	2004	25.33	2007
Austria	21.77	2004	22.83	2007
Belgium	70.80	2004	73.74	2007
Canada	22.22	2004	22.21	2007
Denmark	22.87	2004	23.31	2007
Finland	17.58	2004	18.43	2007
France	68.20	2004	60.80	2007
Germany	25.87	2004	29.08	2007
Greece	70.28	2004	47.24	2007
Iceland	12.21	2005	12.49	2007
Ireland	43.14	2004	44.99	2007
Italy	27.21	2004	26.81	2007
Japan	27.66	2004	30.17	2007
Korea	34.89	2004	36.12	2007
Mexico	36.70	2004	36.60	2007
Netherlands	25.14	2004	19.68	2007
New Zealand	3.19	2004	3.03	2007
Norway	5.68	2004	6.52	2007
Portugal	43.36	2004	38.27	2007
Spain	30.07	2004	30.34	2007
Sweden	7.08	2004	7.67	2007
Switzerland	14.52	2004	12.28	2007
Turkey	22.89	2004	23.77	2007
United Kingdom	15.94	2004	16.86	2007
United States	11.64	2004	11.86	2007

Source: World Bank.

Labour Market Regulation

Difficulty of hiring
The index measures whether laws or other regulations have implications for the difficulties of hiring a standard worker in a standard company (Exhibit 1). Based on fact-based (yes/no) questions but remodelled into a 0-100 index

Country	Actual Values	Year	Actual Values	Year
Australia	0	2004	0	2009
Austria	0	2004	0	2009
Belgium	11	2004	11	2009
Canada	11	2004	11	2009
Denmark	0	2004	0	2009
Finland	33	2004	44	2009
France	67	2004	67	2009
Germany	33	2004	33	2009
Greece	44	2004	33	2009
Iceland	44	2004	44	2009
Ireland	11	2004	11	2009
Italy	33	2004	33	2009
Japan	0	2004	0	2009
Korea	11	2004	44	2009
Mexico				
Netherlands	17	2004	17	2009
New Zealand	11	2004	11	2009
Norway	44	2004	61	2009
Portugal	50	2004	33	2009
Spain	78	2004	78	2009
Sweden	17	2004	33	2009
Switzerland	0	2004	0	2009
Turkey				
United Kingdom	11	2004	11	2009
United States	0	2004	0	2009

Source: World Bank.

Difficulty of firing
The index measures whether laws or other regulations have implications for the difficulties of firing a standard worker in a standard company (Exhibit 1). Based on fact based (yes/no) questions but remodelled to 0-100 index

Country	Actual Values	Year	Actual Values	Year
Australia	10	2004	10	2009
Austria	40	2004	40	2009
Belgium	10	2004	10	2009
Canada	0	2004	0	2009
Denmark	10	2004	10	2009
Finland	40	2004	40	2009
France	40	2004	40	2009
Germany	40	2004	40	2009
Greece	40	2004	40	2009
Iceland	0	2004	10	2009
Ireland	20	2004	20	2009
Italy	40	2004	40	2009
Japan	30	2004	30	2009
Korea	30	2004	30	2009
Mexico				
Netherlands	70	2004	70	2009
New Zealand	10	2004	10	2009
Norway	40	2004	40	2009
Portugal	50	2004	50	2009
Spain	30	2004	30	2009
Sweden	40	2004	40	2009
Switzerland	10	2004	10	2009
Turkey				
United Kingdom	10	2004	10	2009
United States	0	2004	0	2009

Source: World Bank.

Rigidity of hours index
The indicator measures the rigidity of working overtime

Country	Actual Values	Year	Actual Values	Year
Australia	40	2004	0	2009
Austria	60	2004	60	2009
Belgium	60	2004	40	2009
Canada	0	2004	0	2009
Denmark	20	2004	20	2009
Finland	60	2004	60	2009
France	60	2004	60	2009
Germany	60	2004	60	2009
Greece	80	2004	80	2009
Iceland	40	2004	40	2009
Ireland	20	2004	20	2009
Italy	40	2004	40	2009
Japan	20	2004	20	2009
Korea	60	2004	60	2009
Mexico				
Netherlands	40	2004	40	2009
New Zealand	0	2004	0	2009
Norway	40	2004	40	2009
Portugal	60	2004	60	2009
Spain	60	2004	60	2009
Sweden	60	2004	60	2009
Switzerland	60	2004	40	2009
Turkey				
United Kingdom	0	2004	20	2009
United States	0	2004	0	2009

Source: World Bank.

Extent of incentive compensation
Cash compensation of management (1=is based exclusively on salery, 7=includes bonuses and stock options, representing a significant portion of overall compensation)

Country	Actual Values	Year	Actual Values	Year
Australia	5.80	2004	5.00	2008
Austria	5.10	2004	5.00	2008
Belgium	5.20	2004	4.90	2008
Canada	5.50	2004	5.40	2008
Denmark	5.00	2004	4.90	2008
Finland	5.50	2004	5.00	2008
France	5.40	2004	5.70	2008
Germany	5.90	2004	5.60	2008
Greece	4.30	2004	4.50	2008
Iceland	4.60	2004	4.70	2008
Ireland	5.10	2004	4.90	2008
Italy	4.90	2004	5.00	2008
Japan	3.80	2004	4.30	2008
Korea	4.60	2004	5.40	2008
Mexico	4.10	2004	4.70	2008
Netherlands	5.60	2004	5.30	2008
New Zealand	4.80	2004	4.90	2008
Norway	5.00	2004	4.70	2008
Portugal	4.20	2004	4.50	2008
Spain	5.10	2004	4.90	2008
Sweden	5.40	2004	5.20	2008
Switzerland	4.80	2004	5.60	2008
Turkey	3.30	2004	3.60	2008
United Kingdom	6.00	2004	5.40	2008
United States	6.10	2004	5.50	2008

Source: World Economic Forum (WEF): World Competitiveness Report.

Ease of hiring foreign labour
Labour regulation in your country (1=prevents your company from employing foreign labor, 7=does not prevent your company from employing foreign labor)

Country	Actual Values	Year	Actual Values	Year
Australia	3.90	2005	4.40	2007
Austria	4.10	2005	3.90	2007
Belgium	4.50	2005	4.50	2007
Canada	4.50	2005	4.20	2007
Denmark	4.90	2005	4.90	2007
Finland	4.90	2005	5.50	2007
France	4.50	2005	4.70	2007
Germany	4.30	2005	4.80	2007
Greece	4.80	2005	4.80	2007
Iceland	4.80	2005	5.50	2007
Ireland	5.40	2005	6.00	2007
Italy	5.20	2005	4.80	2007
Japan	4.40	2005	4.60	2007
Korea	4.30	2005	3.70	2007
Mexico	4.60	2005	4.90	2007
Netherlands	4.30	2005	4.50	2007
New Zealand	4.70	2005	4.70	2007
Norway	5.00	2005	5.30	2007
Portugal	5.70	2005	5.50	2007
Spain	5.10	2005	5.10	2007
Sweden	4.50	2005	4.40	2007
Switzerland	5.00	2005	5.40	2007
Turkey	4.80	2005	4.70	2007
United Kingdom	5.50	2005	5.60	2007
United States	4.60	2005	5.10	2007

Source: World Economic Forum (WEF): World Competitiveness Report.

Culture

Self-employment preference
The indicator measures individual's preferences towards being self-employed or being an employee

Country	Actual Values	Year	Actual Values	Year
Australia				
Austria	0.35	2003	0.36	2007
Belgium	0.34	2003	0.30	2007
Canada				
Denmark	0.37	2003	0.36	2007
Finland	0.26	2003	0.35	2007
France	0.43	2003	0.41	2007
Germany	0.44	2003	0.41	2007
Greece	0.51	2003	0.56	2007
Iceland	0.55	2003	0.56	2007
Ireland	0.57	2003	0.56	2007
Italy	0.57	2003	0.55	2007
Japan				
Korea				
Mexico				
Netherlands	0.35	2003	0.35	2007
New Zealand				
Norway	0.43	2003	0.34	2007
Portugal	0.67	2003	0.57	2007
Spain	0.57	2003	0.40	2007
Sweden	0.34	2003	0.35	2007
Switzerland				
Turkey				
United Kingdom	0.46	2003	0.49	2007
United States	0.59	2003	0.61	2007

Source: European Commission.

Desirability of becoming self-employed
The indicator measures people's desire to become self-employed within the next five years. This question was asked only to non-self-employed individuals

Country	Actual Values	Year	Actual Values	Year
Australia				
Austria	0.18	2004	0.16	2007
Belgium	0.19	2004	0.18	2007
Canada				
Denmark	0.26	2004	0.20	2007
Finland	0.15	2004	0.31	2007
France	0.38	2004	0.28	2007
Germany	0.23	2004	0.19	2007
Greece	0.39	2004	0.47	2007
Iceland	0.41	2004	0.41	2007
Ireland	0.38	2004	0.37	2007
Italy	0.38	2004	0.39	2007
Japan				
Korea				
Mexico				
Netherlands	0.26	2004	0.21	2007
New Zealand				
Norway	0.23	2004	0.23	2007
Portugal	0.48	2004	0.30	2007
Spain	0.50	2004	0.29	2007
Sweden	0.20	2004	0.21	2007
Switzerland				
Turkey				
United Kingdom	0.25	2004	0.29	2007
United States	0.46	2004	0.42	2007

Source: European Commission.

Risk for Business Failure
The indicator measures people's perception of being willing to start a business if a risk exists that it might fail

Country	Actual Values	Year	Actual Values	Year
Australia				
Austria	0.54	2003	0.43	2007
Belgium	0.54	2003	0.52	2007
Canada				
Denmark	0.39	2003	0.31	2007
Finland	0.43	2003	0.41	2007
France	0.38	2003	0.41	2007
Germany	0.52	2003	0.55	2007
Greece	0.42	2003	0.40	2007
Iceland	0.43	2003	0.37	2007
Ireland	0.25	2003	0.33	2007
Italy	0.46	2003	0.53	2007
Japan				
Korea				
Mexico				
Netherlands	0.49	2003	0.39	2007
New Zealand				
Norway	0.63	2003	0.32	2007
Portugal	0.57	2003	0.66	2007
Spain	0.40	2003	0.43	2007
Sweden	0.51	2003	0.45	2007
Switzerland				
Turkey				
United Kingdom	0.34	2003	0.43	2007
United States	0.29	2003	0.19	2007

Source: European Commission.

Entrepreneurship among Managers (0-10)

Country	Actual Values	Year	Actual Values	Year
Australia	6.5	2003	6.16	2008
Austria	6.46	2003	6.31	2008
Belgium	5.48	2003	5.56	2008
Canada	6.56	2003	6.23	2008
Denmark	5.75	2003	6.29	2008
Finland	6.27	2003	5.64	2008
France	5.02	2003	5.73	2008
Germany	5.18	2003	5.02	2008
Greece	6.23	2003	5.31	2008
Iceland				
Ireland	6.30	2003	6.35	2008
Italy	5.76	2003	5.21	2008
Japan	3.62	2003	4.50	2008
Korea	5.14	2003	6.44	2008
Mexico	4.82	2003	4.40	2008
Netherlands	6.06	2003	5.32	2008
New Zealand	6.53	2003	5.96	2008
Norway	5.21	2003	5.40	2008
Portugal	3.97	2003	4.39	2008
Spain	5.57	2003	4.94	2008
Sweden	5.59	2003	5.91	2008
Switzerland	6.23	2003	5.82	2008
Turkey	5.96	2003	6.23	2008
United Kingdom	4.94	2003	4.65	2008
United States	7.28	2003	6.46	2008

Source: IMD: World Competitiveness Online.

Image of Entrepreneurs

The indicator measures the image of entrepreneurs according to their status in society ranking the following three categories of people: entrepreneurs, civil servants, and managers in large companies, according to their status in society

Country	Actual Values	Year	Actual Values	Year
Australia				
Austria	31.9	2007	31.9	2007
Belgium	24.6	2007	24.6	2007
Canada				
Denmark	19.6	2007	19.6	2007
Finland	24.1	2007	24.1	2007
France	23.2	2007	23.2	2007
Germany	33.1	2007	33.1	2007
Greece	48.2	2007	48.2	2007
Iceland	32.4	2007	32.4	2007
Ireland	38.5	2007	38.5	2007
Italy	37.6	2007	37.6	2007
Japan				
Korea				
Mexico				
Netherlands	43.3	2007	43.3	2007
New Zealand				
Norway	24.6	2007	24.6	2007
Portugal	35.0	2007	35.0	2007
Spain	36.6	2007	36.6	2007
Sweden	27.6	2007	27.6	2007
Switzerland				
Turkey				
United Kingdom	33.8	2007	33.8	2007
United States	40.3	2007	40.3	2007

Source: OECD: Entrepreneurship Survey.

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