

IBM Global Business Services



IBM Institute for Business Value

Government

How the most advanced nations can remain competitive in the Information Age

Leveraging information and communications technologies for national economic development



IBM Institute for Business Value

IBM Global Business Services, through the IBM Institute for Business Value, develops fact-based strategic insights for senior business executives around critical industry-specific and cross-industry issues. This executive brief is based on an in-depth study by the Institute's research team. It is part of an ongoing commitment by IBM Global Business Services to provide analysis and viewpoints that help companies realize business value. You may contact the authors or send an e-mail to iibv@us.ibm.com for more information.

E-readiness

We are grateful to the Economist Intelligence Unit for allowing us to use data presented in their E-readiness Rankings series of studies (published between 2001 and 2006) in our analysis of trends. The findings and views expressed here do not necessarily reflect those of the Economist Intelligence Unit. Neither the Economist Intelligence Unit, nor its affiliates, can accept any responsibility or liability for reliance by any person on this information.



How the most advanced nations can remain competitive in the Information Age

Leveraging information and communications technologies for national economic development

By James W. Cortada, Ashish M. Gupta and Marc Le Noir

Globally, the use of information and communication technologies (ICT) continues to rise sharply. The overview of this series, “How nations thrive in the Information Age,” describes research findings where the world’s nations occupy one of three tiers: the most advanced “Established Leaders,” the heterogeneous middle tier of “Rapid Adopters” and the “Late Entrants.” In this paper, we highlight the challenges and opportunities for Established Leader nations. To stay on top, countries must not only update existing ICT infrastructures and find new ways of using ICT – they also have to meet their aging populations’ needs.

All nations in developing and advanced economies have become such extensive users of information and communications technologies (ICT) that their economic success now depends on their continued wise promotion and deployment of these by their governments at a national level. Governments in the most economically advanced countries in the world are committed to using these technologies to continue enhancing their nations’ competitiveness and to improve the internal operations of public agencies.

However, just as ICT can offer nations potential opportunities to improve the economic and social quality of citizen’s lives, challenges to national success also exist. Thoughtful policies and effective implementation of national economic development policies that integrate economic, social and technological strategies are essential to compete effectively in the

globalized economy of the twenty-first century. This fact has not been lost on up-and-coming nations who either aspire to challenge the predominance of today’s leading nations or need to function as peers, as is the case for recent entrants into the European Union.²

Thus, there is growing urgency for policy makers to incorporate ICT into economic policies because of expanding international competition for such resources as skilled labor, investment funds and trade. ICT has clearly become an important part of national strategy, largely due to remarkable improvements in various technologies over the past two decades. Also, just in the past few years, there has been a significant up-tick in the adoption of such tools as the Internet, wireless communications, as well as “computing” that is embedded in all manner of goods and services.

Despite leading the world, the Established Leaders – with the longest and most extensive ICT experience – face significant challenges of their own. Among these are replacing older ICT infrastructures; meeting public demand for Internet-based service delivery; promoting more innovative uses of technology; and, perhaps most critical, finding ways to mitigate the negative consequences of needs of their aging populations.

Studies have been conducted over the past half decade by the Economist Intelligence Unit (EIU), in collaboration with the IBM Institute for Business Value. This research reviewed trends in nearly 70 countries, detailing major shifts in economic activities. The growing use of ICT is one of the most obvious trends in innovating economies. Equally important, national strategies and leading practices are emerging that can be leveraged by all nations that wish to remain competitive.

The E-readiness Rankings: Research methodology

The EIU has published an annual E-readiness ranking of the world's largest economies since 2000. *E-readiness* is defined as an indication of how amenable a national market is to Internet-based opportunities. The ranking evaluates the technological, economic, political and social assets of 68 countries and their cumulative impact on respective information economies.

The rankings are based upon nearly 100 quantitative and qualitative criteria, organized in six distinct categories: Connectivity and Technology Infrastructure, Business Environment, Consumer and Business Adoption, Legal and Policy Environment, Social and Cultural Environment, and Supporting e-services.

How the most advanced nations can remain competitive in the Information Age

Leveraging information and communications technologies for national economic development

Key E-readiness trends

Analyses of the E-readiness research results demonstrate a number of patterns of practices around the world. The world's largest economies, within a specific tier, seem to share similar sets of political, economic, social and technological attributes, and can be categorized into three tiers based on the extent of ICT deployment:

- *Established Leaders* (or Tier 1 countries) – The most extensive and mature users of ICT.
- *Rapid Adopters* (or Tier 2 countries) – Countries which have made rapid progress in ICT development in recent years and are beginning to challenge the most advanced economies or the *Established Leaders*.
- *Late Entrants* (or Tier 3 countries) – Countries that started the new century with inadequately developed social, economic, political and legal infrastructures, and where ICT only influences a very small part of their economies.

The Established Leaders (see Figure 1) are the focus of this executive brief. Established Leaders have long optimized several sets of activities within their economies and societies that led to their preeminent position in the global economy over the past half century, and helped them attain the highest standards of living in the world.

These activities include:

- Effectively using and continuously improving all manner of technology, including ICT
- Creating legal and policy environments that make it easier to adopt technologies
- Enabling the creation of new businesses more easily than in many other nations
- Provisioning society with such prerequisites as higher levels of literacy and education, and medical and social services.

The cumulative result of such investments, when coupled with ongoing ICT investments, made it possible for these countries to enjoy high economic standards. The process is evident all over the world, from the United States and Canada, to the Nordic countries in Europe, to Hong Kong and Singapore in Asia. New Zealand is an example of a Tier 1 country that has made many favorable changes over the last two decades (see Appendix 1 for details).

FIGURE 1.
Established Leaders (or Tier 1 countries).

Rank	Country	Rank	Country
1	Denmark	11	Norway
2	United States	12	Germany
3	Switzerland	13	Singapore
4	Sweden	14	New Zealand
5	United Kingdom	15	Austria
6	Netherlands	16	Ireland
7	Finland	17	Belgium
8	Australia	18	Korea
9	Canada	19	France
10	Hong Kong	20	Bermuda

Source: Annual E-readiness Rankings 2001-2006, Economist Intelligence Unit.

Established Leaders – the most extensive and mature ICT users – improved their e-readiness by 9 percent in the past six years.

What do the Established Leader nations have in common? When measured against various influential criteria, they have clearly evolved their use of technologies regularly, indeed inventing virtually all of the ICT of the past two centuries. Established Leader governments have historically been some of the most sophisticated early users of ICT within their own societies.

In addition, these governments aggressively promoted the export of such technologies and encouraged creation of new businesses. However, as first entrants in many instances, they also now face the problem of replacing the older ICT infrastructures upon which they have become dependent to support their internal operations and serve their citizens.

Over the past half-dozen years alone, the overall e-readiness performance of all countries has improved significantly, although the pace of development varied across the

three tiers. The most extensive and mature ICT users, Established Leaders, improved their e-readiness by 9 percent just in the past six years. Rapid Adopters improved their use of technology and creation of the necessary infrastructure (such as improving education) by 22 percent, thereby beginning to challenge the leaders in the pace of ICT enablement. Late Entrants – laggards in the use of ICT for national economic development – have also committed to transforming their societies, with rates of development now mimicking those of Rapid Adopters (See Figure 2).

In short, over the past half-decade, the over 60 countries surveyed have dramatically increased their e-readiness and thus their ability to compete on a global basis with both the necessary ICT and social/legal infrastructures. Rapid Adopters have made the greatest progress, while Late Entrants have experienced difficulty in embracing the practices of countries above them (see Figure 3).

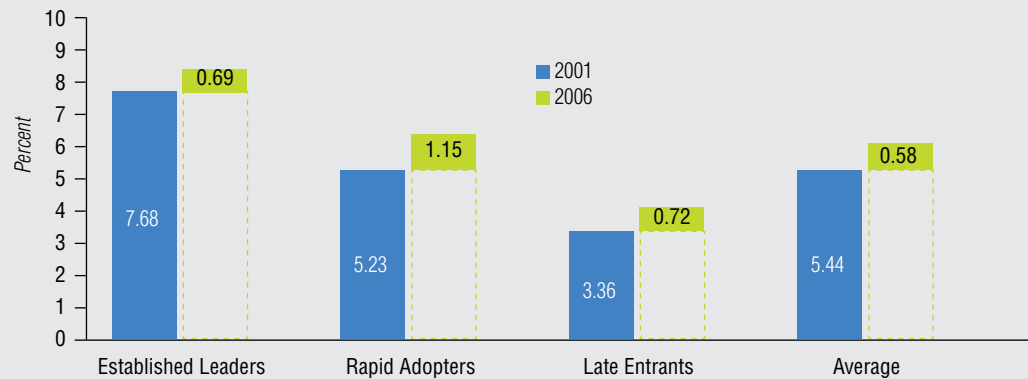
FIGURE 2.
Performance on key criteria.

Criteria^A	Established Leaders	Rapid Adopters	Late Entrants
Mean years of schooling	9-10	6-7	3-4
Internet literacy (% of population)	50-60%	15-20%	2-5%
Per capita spending on ICT (US\$)	2000-2500	500-800	100-200
Mobile penetration (% of population)	80-90%	60-70%	20-30%
Laws covering Internet (1-10, 10 best)	8-9	5-6	3-4
Ease of registering new business (1-10, 10 best)	8-9	6-7	2-3
Average days for registering a new business	16-18	30-35	55-60 ^B

Note: A) Figures represent average value/range for a Tier. B) In some countries in Tier 3, the average days for registering new business exceed 100.

Source: The 2006 E-readiness Rankings, Economist Intelligence Unit.

FIGURE 3.
Average increase in E-readiness score over 2001-2006.



Note: Average overall increase for all the countries between 2001 (60 countries) and 2006 (68 countries) is relatively lower (at 0.58) than the increases for individual tiers (at 0.69 for Established Leaders, 1.15 for Rapid Adopters and 0.72 for Late Entrants, respectively). This lower overall increase is because a majority of new countries added to the rankings during this period had lower absolute E-readiness scores..
Source: Annual E-readiness Rankings 2001-2006, Economist Intelligence Unit.

Established Leaders: Profiles and key trends

This group is made up of the top 20 countries in our rankings and it includes many nations from Western Europe, North America and Asia-Pacific (see Appendix 2 for the list of countries in each tier). Politically, they generally have representative governments, are pro-competition, and are open to foreign investments and ownership. They also have flexible labor laws and extensively developed labor markets.

Governments have advanced highly developed e-government strategies. Most became early adopters of ICT, in many instances as early as the 1950s and 1960s, which explains why numerous government agencies still have legacy systems that owe their origins to computing from these earlier decades.

Economically, per capita gross domestic product (GDP) tends to be high, in the range of US\$30,000 to US\$50,000 for most countries. In these countries, new businesses can be registered very quickly, usually in 18 to 20 days. Businesses' expenses for complying with government regulations are the lowest of the three tiers, and few legal impediments exist for their growth inside the nation and overseas. There are also multiple funding sources available for new start-up businesses.

These successes and advantages of the Established Leaders are relative to the performance of all other nations, yet even they have much room for improvement.

However, as discussed below, even the most advanced countries still have much room for improvement because they must compete with each other for talent, capital and business while serving citizens who are increasingly aware of what other governments do for their people.

E-government leading practice: Denmark

Denmark has done quite well on the E-readiness Rankings in last half dozen years, occupying the top spot in 2006. One of the reasons for the country's strong showing has been its superior e-government infrastructure. The structure of the local public sector is undergoing big reforms currently, with fewer organizations expected to deliver an increased share of public functions and services (271 municipalities to be reduced to 98 and 14 counties to become five regions).

From an ICT infrastructure point of view, two leading practices³ demonstrate why Denmark is leading the rankings. First, the Civil Registration System (CRS) provides citizens with a personal identification number to be used by the entire public sector for administrative purposes. Second, the Public Key Infrastructure (PKI) provides citizens, companies and public entities with software-based "official" digital signatures to be used in delivery of public services like Customs and Tax Administration, and potentially for online service delivery by private companies such as banks, insurance and pension companies.

Another example of the progressive nature of e-government reforms in the country⁴ is the use of electronic procurement mandate in February 2005 for public services by business and individuals. According to the European Commission, e-procurement is saving Danish businesses €50 million (US\$63 million) and taxpayers as much as €150 million (US\$188 million) per year.

Source: 2006 Annual E-readiness Rankings, Economist Intelligence Unit.

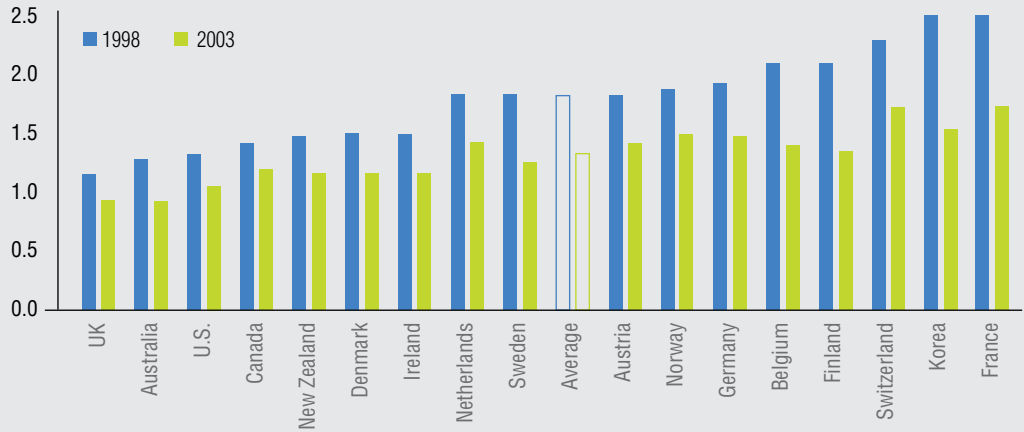
More than any other set of nations, Established Leaders have liberalized both product markets and labor legislation, largely in the 1980s and 1990s. These led to strong macroeconomic environments and labor markets, both prerequisites for a strong ICT environment. The United Kingdom, New Zealand, Canada, Denmark, United States, Netherlands and Ireland have done the most. Consequently, they have enjoyed some of the strongest macroeconomic conditions over time. (see Figure 4).

Additionally, this collection of countries reduced significantly local barriers to entrepreneurship and competition, particularly between 1998 and 2003 – just as the Internet was becoming a global force influencing the behavior of firms around the world. This facilitated more effective diffusion of ICT in their economies.

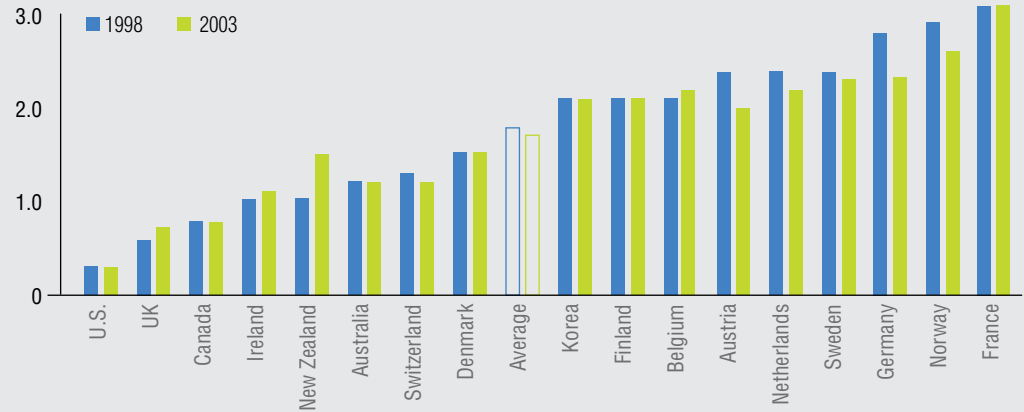
Countries such as Ireland, New Zealand, and Germany reduced legal barriers to entry, although they still have room for improvement when compared to economic rivals (see Figure 5). Austria, Netherlands and Sweden also proved aggressive in improving their competitive environments as well. Yet at the same time, Australia, United States, France and Denmark still have some of the highest remaining barriers to competition among the most advanced economies in the world. This could be explained in part by the simultaneous presence of state-controlled enterprises and legal barriers to competition in these countries.

FIGURE 4.
Product market regulation and employment protection legislation.

Product market regulation, Established Leaders (Tier 1 countries)
(0-6, with 6 being most stringent)



Employment protection legislation, Established Leaders (Tier 1 countries)
(0-6, with 6 being most stringent)

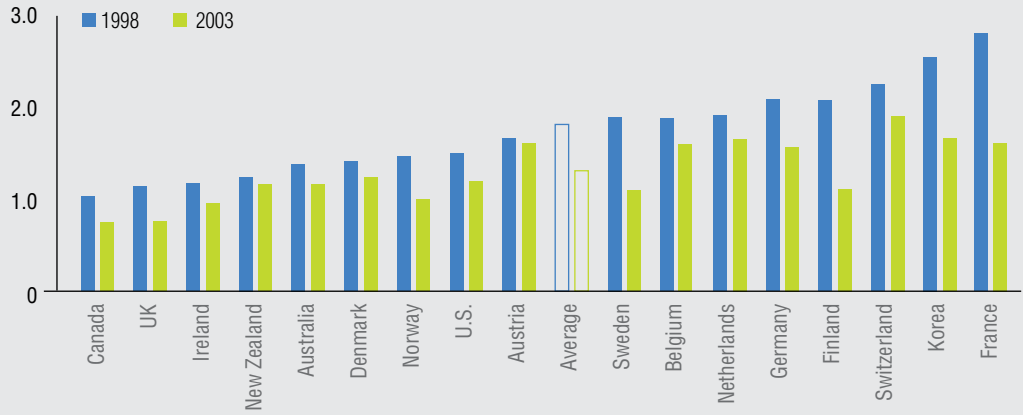


Source: "Economics Department Working Papers No 226 and Employment Outlook 2004." Organisation for Economic Co-operation and Development; Conway, P., V. Janod and G. Nicoletti. "Product Market Regulation in OECD Countries, 1998 to 2003." OECD Economics Department Working Paper, No 419. 2005.

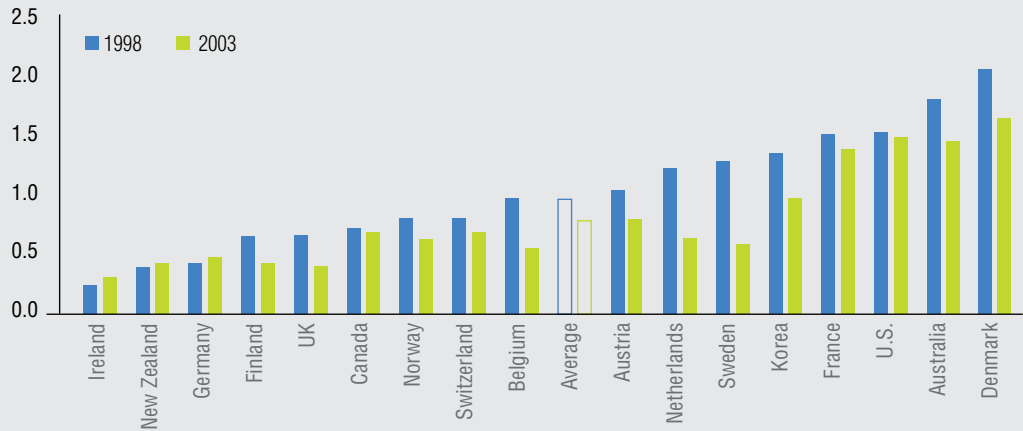
Note: Data not available for Hong Kong, Singapore and Bermuda. Employment Protection Legislation (EPL) score is an average of Temporary and Permanent Employment Contract factor scores and does not include Collective Dismissal factor score. This is done to be able to compare EPL scores across countries and years.

FIGURE 5.
Barriers to entrepreneurship and competition.

Barriers to entrepreneurship, Established Leaders (Tier 1 countries)
(0-6, with 6 being most stringent)



Barriers to competition, Established Leaders (Tier 1 countries)
(0-6, with 6 being most stringent)



Source: "Economics Department Working Papers No 226 and Employment Outlook 2004." Organisation for Economic Co-operation and Development; Conway, P., V. Janod and G. Nicoletti. "Product Market Regulation in OECD Countries, 1998 to 2003." OECD Economics Department Working Paper, No 419. 2005.

Note: Data not available for Hong Kong, Singapore and Bermuda.

Unlike the other tiers of nations, Established Leaders face a serious economic challenge in the form of rapidly aging populations.

In the area of employment protection, public officials have to balance several potentially conflicting priorities: protecting employees from harsh arbitrary work practices; encouraging job security; and enabling employers to add or reduce the number of employees.

Officials in rapidly evolving economies also want to create circumstances where skills can evolve and workers can move from one industry or sector to another in response to changing needs of an economy. This creates opportunities for higher levels of employment, although there is possibly some cost of worker turnover. The question is thus how much flexibility an economy needs regarding the evolution and deployment of its workforce. The more an economy is changing, the greater its need for flexibility.

Socially, Established Leaders have very low population growth combined with high life expectancy rates. On average, citizens in these countries have 10 or more years of formal education and rank in the top 20 in the United Nations' Human Development (HDI) Index.⁵ However, their populations are also aging faster than any other parts of the world. This will require extensive resources to address three particular areas: pensions, medical care and providing government services to those less ambulatory than younger populations.

Aging populations represent a unique differentiator from all other tiers of nations and loom as one of the most serious challenges for these economies (see Figure 6). In a recent study of the problem, The IBM Institute for Business Value described a series of strate-

gies national governments could implement to remediate these issues, including replacing older processes and uses of ICT with new ones better suited to this population.⁶ Naturally, the private sector in these countries also faces the same problems and opportunities.⁷

Employment Protection Legislation (EPL): Performance of OECD countries

The changes over time in the summary EPL indicators suggest that there has been some convergence in the strictness of EPL among OECD countries. Most of the changes occurred in the 1990s, mostly the result of a relaxation of rules in countries where legislation was particularly strict.

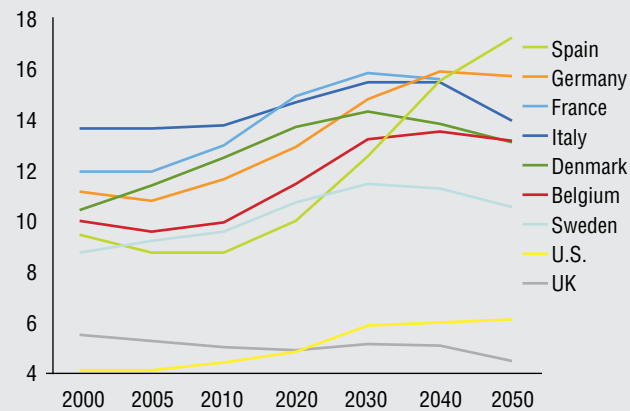
However, despite the convergence, the relative position of countries across the overall spectrum of EPL has not changed much since the late 1980s. The U.S., the UK and Canada continue to be the least regulated countries. Stricter employment protection remains a feature of southern European countries.

Restrictions on the maximum duration of fixed term contracts or temporary work agencies (TWA) jobs have been eased in several countries. Denmark and Sweden have removed all restrictions on the types of work for which TWA employment is legal. Denmark also eliminated restrictions on the number of renewals. The maximum duration of successive contracts has been increased in Belgium, Germany, the Netherlands and other countries. These actions are improving the flexibility of the employment pools in these nations.

Source: "Economics Department Working Papers No. 226 and Employment Outlook 2004." Organisation for Economic Co-operation and Development.

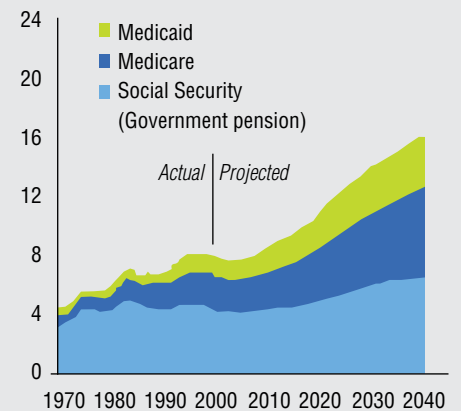
FIGURE 6.
Projected budgetary social benefits spending, EU and U.S.

Drivers of EU spending
 (Percent of GDP)



Source: EU Economic Policy Committee/Congressional Budget Office.

Drivers of U.S. spending
 (Percent of GDP)



Source: U.S. Congressional Budget Office, Midrange assumptions.

Technologically, Internet literacy is quite high by global standards, with 50 to 60 percent of the population using this technology and 80 to 90 percent using mobile telephones. Citizens spend the most on ICT per capita, in the range of US\$2000 to US\$2500. They are also switching rapidly to broadband and wireless uses of ICT. There is a strong e-services market and their governments play leading roles in defining Internet laws and intellectual property management.

Measured by E-readiness scores, these countries have remained very similar for a number of years, reflecting the use of mature technologies. Many of their social, legal and political infrastructures are well advanced. These countries have taken the lead in changing their legal and policy environments relating to ICT use – most specifically, the Internet – while their business environments have remained generally stable and prosperous, supported by sound government policies.

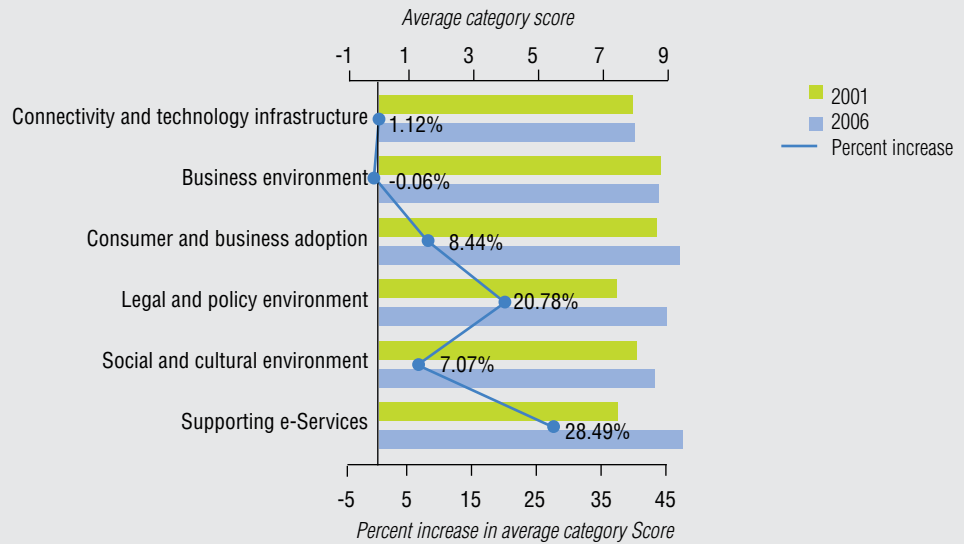
Figure 7 summarizes the performance of these countries during the early years of the new century. Over the past half dozen years, membership in this elite group has remained relatively constant (18 of 20) with several others that could easily have been included here. Nations included tend to be West European (12 of 20) and Japan has come and gone (possibly only momentarily) as a member, while Korea recently ranked high enough to join this tier.

So what should Established Leaders do next?

As increasing ICT penetration ceases to be a competitive advantage, countries in the leading tier will need to raise the bar by increasing the efficiency and use of their current ICT infrastructure. Established Leader nations will want to take action on political, economic, social and technological issues as they increase their societies' ability to compete in a rapidly evolving global economy.

To remain in the top tier, Established Leader nations will need to focus on continued improvement of their ICT efficiency and find new ways to use or enhance their current ICT infrastructure.

FIGURE 7.
Established Leaders E-readiness scores 2001-2006.



Source: The 2001-2006 E-readiness Rankings for Tier 1 nations, Economist Intelligence Unit.

In fact, Rapid Adopters have started to challenge the economic and social effectiveness of Established Leaders as the second tier strives to achieve the same high standards of living the first tier has enjoyed over the past two decades. Thus, while the leaders encourage Rapid Adopters to upgrade their technological, political, social and economic infrastructures – as is happening with new entrants into the European Union, the World Trade Organization (WTO) and NAFTA – global competition increases on many levels.

The political environment for Established Leaders, while quite strong, calls for several sets of initiatives. Governments should consider taking the following actions:

- Reduce or maintain product and labor market regulations at low levels to facilitate sustained economic growth
- Coordinate government e-strategy through a single point of entry for all government services online, a process already underway in North America, parts of Asia and Western Europe
- Promote development of the next generation of infrastructure in the delivery of services to the nation, from further use of the Internet to open source software and widely accepted technical standards.⁸
- Continue implementing market reforms that reduce the costs of new technologies to facilitate access for people who are currently excluded due to high costs.

UK Online Citizen Portal

The UK has been one of the leaders in the e-readiness surveys making an appearance in the top five slots regularly in the last six years.

There has been an unmistakable drive by the government to make the country one of the leaders in ICT adoption.

Recently, the Government, industry, trades unions and consumer groups have come together to deliver the UK Online Citizen Portal, an initiative to provide a single point of entry to all central and local Government content online. The portal will provide general information about the UK Online programs, bringing together information and advisory services from over 1000 central and local government Web sites. The design of the portal has been kept simple and accessible to meet citizens' needs, and to encourage those who may be nervous about trying new technology.

Economically, governments should focus on four essential strategies and policies:

- Increase cross-sector and cross-community linkages through exchange of leading practices and sharing of technology infrastructure among entities. This would contribute toward increasing the overall effectiveness of ICT within an economy.
 - Make digital channels more convenient and more cost-effective for both governments and businesses, and to encourage higher adoption by consumers and citizens.
 - Strengthen governance for e-commerce and Internet security with local industries to promote online trade.
- Gradually prepare for a declining public workforce, due to retirement, by transforming the way services are delivered and making them more IT-intensive than labor-intensive.

Socially, much good work has been done, particularly with education, but will need to be enhanced in order not to be overtaken by advancing countries that are increasingly engaging effectively in the war for talent.⁹ Specifically, governments can leverage solid experience in this area, for example:

- Improve the quality of secondary and tertiary education while concentrating on reducing school drop-out rates. Also, train citizens for jobs in emerging growth areas, such as healthcare.
- Improve access to education and job opportunities to those sectors of any population currently deprived due to geographical constraints, ethnic background or physical disability.
- Reform social welfare systems to reflect the reality of aging populations, such as with incentives and other support, to allow people to work longer while facilitating easier immigration for critical professions.¹⁰
- Integrate and continue to automate systems that exchange and share demographic data across multiple government agencies, striving for "one-stop" service to citizens, particularly for the elderly and in support of young families and children.

As countries in the middle tier of Rapid Adopters make progress with their use of ICT, Established Leader countries will find themselves in a footrace to maintain their top e-readiness rankings.

Case study: Service Canada

Canada has been ranked among the top 10 countries on the E-readiness Rankings for a number of the last half dozen years and occupied the 9th spot in the 2006 annual rankings. It enjoys a strong business environment supported by a strong e-services infrastructure.

Service Canada provides a single Government of Canada service delivery network that brings together a comprehensive set of government services and benefits. Before the substantive drive to transform the service delivery was embarked upon, the channel was expensive and difficult for the government to manage. The aging and siloed service infrastructure made it difficult for both citizens and businesses to deal with it. Clients were facing complex and redundant reporting and evidentiary requirements.

The aim of the transformation was to increase accountability by transferring focus of policy and service from programs to citizen segments and communities. This design was intended to achieve improved policy outcomes by delivering bundled programs, services and benefits into service offerings through an integrated, multi-channel environment that is partnership and network based. As an example, a simple single application for multiple services and programs, completed at birth, will combine new child care allowance, provincial birth registration and certificate, social insurance number, and other education grants and tax benefits reducing the need for multiple interactions with the government.

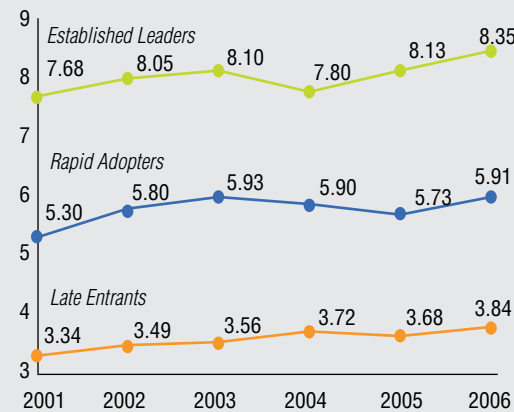
Source: Morales, Albest and Breul, Jonathan. "Market-based government through innovation: How public sector leaders are improving collaboration and focusing on citizens." August 2006. IBM Global Business Services. http://www-935.ibm.com/services/us/cio/empower/empow_wp_gbs_marketbased.pdf

Despite enormous investments in technological infrastructure over the past half-century, it no longer is sufficient for governments to commit strongly to a vision of an Information Age society and governmental services. Established Leaders must upgrade aging ICT infrastructures to compete with the newest ones being created by the Rapid Adopters and Late Entrants that are not burdened with massive investments in older ICT. Essential improvements include:

- Develop and execute clearly articulated modern digital strategies and measure results against targets, such as the percent invested in specific types of ICT (for example, measuring broadband usage by citizens or government).¹¹
- Coordinate in a formal manner government-industry programs to enable efficient rollout of new technologies and their uses.
- Develop efficient technologies for commercialization and implement transfer rules to speed their diffusion into the local society and global market.

When compared to the other two clusters of nations, the evidence points to the fact that the Established Leaders, which were the earliest and most advanced users of ICT, are continuing to progress. They are extending their long standing tradition of innovating both internal governmental operations and externally with their national economies. As Figure 8 illustrates, however, many other nations are doing that too. In short, a footrace to maintain primacy of performance is well underway.

FIGURE 8.
E-readiness scores by Tier, 2001-2006.



Note: Slight decreases in 2004 and 2005 were the result of changes in criteria used in the rankings.

Source: The 2001-2006 E-readiness Rankings, Economist Intelligence Unit.

Several key questions can help government officials in Established Leader nations to set priorities for taking action to remain global ICT leaders.

The way forward for Established Leaders

The nations reviewed in this paper represent some of the most advanced, largest economies in the world, and are the source of most technological innovations. In short, they collectively have deep experience in using ICT and leveraging many legal, social and economic capabilities to sustain such high standards of living. However, these nations are not immune from the competition coming from countries that are rapidly catching up in terms of their own economic, social and technological advancements.

Each of the Established Leader countries has opportunities to improve how it functions in the world's economy and how its government performs daily work. There is no rest for any of these nations if they desire to maintain their high standards of living and leading competitive positions in the world.

As suggested to all nations, our findings point out that national progress can come only if successes occur simultaneously on four fronts: political, economic, social and technological. For each country, however, the areas requiring the most emphasis will vary .

Established Leaders of the world could enhance both the quality of life of their citizens and competitiveness in the world economy in two primary ways. One is to update existing ICT infrastructures and the ways of using these technologies (particularly by government). At the same time they promote the evolution and development of new ICT products and services, they must address the needs of their increasingly aging populations. Where these nations are headed is not so much toward a flat world – that has largely happened. More precisely, they are returning to a time when technological sophistication and economic balance-of-power reached an equilibrium. The world is once again moving in that direction.

So, what is a public official in an Established Leader nation to do to continue moving forward? Some questions of particular relevance to Established Leaders include:

- How well am I addressing the immediately impending retirement of substantial numbers of government and private sector workers?
- What can I do further to redesign government services to support all retiring citizens in an effective and affordable way, especially before more than a third of my experienced public servants retire over the next half decade?

- What improvements in our social policies would make my society a place that attracts talent from other nations needed in our economy, and creates a healthy and prosperous society?
- Can I make government-citizen interactions more efficient by bringing all the government services under a single umbrella and enabling a more integrated delivery?
- How can I measure my nation's progress in its overall improvements? How should I do that for government as well?¹²

The evidence demonstrates clearly that every nation will have different answers to these questions, but what is very evident is that governments at all levels will have to play a central role in leading their citizens and institutions through this evolution. Indeed, governments on all continents are moving quickly today to make improvements and their economies are also transforming rapidly. The most advanced economies are not immune from the process; they too are participating in the step change currently underway in the economies of most nations. This situation has understandably created a sense of urgency for governments to exercise strong leadership.

In the case of ICT, rates of adoption of leading practices are increasing in pace each year, requiring that governments, leading companies and organizations move expeditiously to keep up and excel. It is why IBM, the Economic Intelligence Unit, the United Nations, the European Union and many international corporations are among the many organizations that are tracking and participating in this global process of transformation in public administration and economic innovation.

As political scientist Robert Gilpin reminded his readers, it is the leading political powers of the world that can “cooperate to fashion a more stable and humane international political and economic order.”¹³ This is a situation the world has not experienced in recent centuries, but has in the past. As Gilpin argued, it is where nations are headed.

About the authors

James W. Cortada is a member of the IBM Institute for Business Value, where he leads teams that conduct research on the key issues facing governments around the world. He is the author of over 100 articles and 40 books, most dealing with the role and management of technology in modern society. He has consulted extensively in the public sector over the past three decades and has been at IBM for over 30 years. He holds a Ph.D. in modern economic history from Florida State University. He may be reached at jwcorta@us.ibm.com.

Ashish M. Gupta is a strategy consultant in the IBM London office and advises clients in the financial services industry. Prior to joining IBM, he worked as an analyst for a global IT consulting firm and was a manager with a multinational bank in India. He holds a degree in engineering and an MBA from the Indian Institute of Management Ahmedabad. He can be reached at ashish.m.gupta@uk.ibm.com.

Marc Le Noir is a member of the IBM Institute for Business Value, conducting research on the key issues facing governments around the world, particularly within Europe. He has consulted extensively in the public sector worldwide and authored studies on government topics, such as e-government, performance management in the public sector and integrated border management. He holds an economic masters degree, as well as a financial MBA degree. Marc can be reached at marc.le.noir@be.ibm.com.

Contributors

Denis McCauley, Director Global Technology Research, Economist Intelligence Unit

George Pohle, Vice President and Global Leader, IBM Institute for Business Value

Roel Spee, IBM Europe and Asia-Pacific Leader, Global Location Strategies and Economic Development Services

Gene DePrez, IBM Americas Leader, Global Location Strategies and Economic Development Services

About IBM Global Business Services

With business experts in more than 160 countries, IBM Global Business Services provides clients with deep business, process, and industry expertise across 17 industries, using innovation to identify, create, and deliver value faster. We draw on the full breadth of IBM capabilities, standing behind our advice to help clients innovate and implement solutions designed to deliver business outcomes with far-reaching impact and sustainable results.

For additional details on this report, please contact Susanne Dirks at The IBM Institute for Business Value's Center for Economic Development in Dublin, Ireland. She can be reached at susanne_dirks@ie.ibm.com.

Appendix 1: Case study – New Zealand

New Zealand (NZ) has been one of the fastest movers in the last half dozen years on the E-readiness Rankings, gaining six places to reach the 14th spot in 2006 (next only to Switzerland which gained 8 ranks).^A A lot of factors contributed to NZ's strong performance, the most important being a strong political will to make a difference. NZ has done well to push reforms in the product market with OECD indices of overall product market regulation indicating that it is one of the most liberal economies and continues to show improvement.

The Employment Contracts Act initiated labor reforms in May 1991 with the objective of creating an efficient labor market. However, a slight increase in OECD's EPL indicator between 1998 and 2003 seems to indicate an undesirable increase in regulation that has the potential to make labor market less flexible. In order to maintain a healthy labor market, policies will need careful evaluation to verify that these do not reduce labor market flexibility or add to average labor costs, either of which could be counter-productive for companies operating in the economy.

NZ enjoys a strong macro-economic environment although its GDP per capita of around US\$26,500 lagged most of its OECD peers in 2005. Firm entry and exit rates have been high compared to many OECD countries pointing toward existence of policies that do not impede the firm turnover process – firm entry occurs because entrepreneurs believe they can sell their product or service profitably; firm exit occurs as competitive pressures result in the closure of less productive firms.

A recent World Bank report placed NZ at the second spot globally for the ease of doing business in the country.^B FDI restrictions in the country mostly reflect screening requirements which are considered less restrictive than hard ceilings. Non-tariff measures for industry protection purposes do not exist and average applied tariffs are below the OECD average.

NZ still has some way to go before it can achieve a strong social environment as compared to its OECD peers. NZ's 19th rank on UN's HDI rankings for 2003^C puts it behind most of the other Established Leader countries. Life expectancy has increased for the population as a whole in the last 20 years, but some minorities still lag the trend. NZ scores high on education, with the mean years of schooling at 10 years or more. Although academic performance is good at high school level, the proportion of low achievers is greater than other OECD countries. Experts and leading policy makers have pointed out that NZ also needs to address persistent educational under-achievement of certain ethnic minorities. Expansion of early childhood education and development of well-coordinated early intervention programs may also help address this problem to a certain extent.

NZ was also one of the first countries in OECD to deregulate its telecom sector with market opened to private players in 1989, leading to faster development and reduced tariffs. There has been a sustained, well-coordinated government effort to increase ICT diffusion in the economy with a well-articulated digital strategy and funding support for implementation. In 1995, a coordinated e-government approach developed the first online government directory, which later became a single point of entry for all government services online. By the mid-1990s, 25 of the 38 core NZ public service departments had established a presence online.

The IT Policy Taskforce, set up in 1997, developed a more strategic approach to the government's online presence, advising the government on a vision for online services and development of a sector-wide strategy. It launched the first ICT strategy for schools, Interactive Education, in 1999. Many more initiatives followed to bridge the divide created by geographical or socio-economic positioning.

Sources:

A *The Annual E-readiness Rankings 2001 to 2006*, Economist Intelligence Unit.

B *The World Bank Group. "Doing Business in 2007 – How to Reform (Overview)"*

http://www.doingbusiness.org/documents/DoingBusiness2007_Overview.pdf.

C *Human Development Indicator (HDI)*, Human Development Report 2003. <http://hdr.undp.org/>.

Appendix 2: Countries in each tier and E-readiness Ranking

Established Leaders		Rapid Adopters		Late Entrants	
Rank	Country	Rank	Country	Rank	Country
1	Denmark	21	Japan	41	Brazil
2	United States	22	Israel	42	Argentina
3	Switzerland	23	Taiwan	43	Jamaica
4	Sweden	24	Spain	44	Bulgaria
5	United Kingdom	25	Italy	45	Turkey
6	Netherlands	26	Portugal	46	Saudi Arabia
7	Finland	27	Estonia	47	Thailand
8	Australia	28	Slovenia	48	Venezuela
9	Canada	29	Greece	49	Peru
10	Hong Kong	30	UAE	50	Romania
11	Norway	31	Chile	51	Colombia
12	Germany	32	Czech Republic	52	Russia
13	Singapore	33	Hungary	53	India
14	New Zealand	34	Poland	54	Jordan
15	Austria	35	South Africa	55	Egypt
16	Ireland	36	Slovakia	56	Philippines
17	Belgium	37	Malaysia	57	China
18	Korea	38	Lithuania	58	Ecuador
19	France	39	Latvia	59	Sri Lanka
20	Bermuda	40	Mexico	60	Nigeria
				61	Ukraine
				62	Indonesia
				63	Algeria
				64	Kazakhstan
				65	Iran
				66	Vietnam
				67	Pakistan
				68	Azerbaijan

Source: The 2006 E-readiness Rankings, Economist Intelligence Unit.

References

- ¹ Cortada, James W. Ashish M. Gupta, and Marc Le Noir. "How rapidly advancing nations thrive in the Information Age: Leveraging ICT for national economic development." IBM Institute for Business Value. January 2007.
- ² Ibid.
- ³ "OECD Peer Review Of E-Government In Denmark; Pre-Publication Draft: Version 2 – 29." Organisation for Economic Co-operation and Development. September 2005. http://e.gov.dk/uploads/media/OECD_analyse_af_digital_forvaltning_i_Danmark_09-2005.pdf
- ⁴ "The 2006 E-readiness Rankings." Economist Intelligence Unit.
- ⁵ Human Development Indicator (HDI), Human Development Report 2003. <http://hdr.undp.org/>.
- ⁶ Cortada, James W., Dr. Sally Drayton, Marc Le Noir, Richard Lomax. "Securing Future Prosperity: How Governments Can Be a Catalyst." IBM Institute for Business Value. April 2005.
- ⁷ Casher, Amy and Eric Lesser. "Gray Matter Matters: Preserving Critical Knowledge in the 21st Century." IBM Institute for Business Value. May 2003; Feurpeil, Steffen, Carsten Hausmann, and Eric Lesser. "Addressing the Challenge of an Aging Workforce." IBM Institute for Business Value. 2005.
- ⁸ For examples, see DiMare, Jay. "Changing the Way Industries Work: The Impacts of Service-Oriented Architecture." IBM Institute for Business Value; DiMare, Jay. "Service-Oriented Architecture: A Practical Guide to Measuring Return On That Investment." IBM Institute for Business Value. 2006.
- ⁹ Recently described by Florida, Richard. *The Flight of the Creative Class: The New Global Competition for Talent*. (New York: HarperBusiness, 2005).
- ¹⁰ Heintzman, Ralph. "Towards Citizen Centered Service – The Government of Canada's Service Improvement Strategy." *Canadian Government Executive*, Issue 4. 2001.
- ¹¹ For recent examples of these kinds of activities, see Kamensky, John M. and Albert Morales (eds.). *Managing for Results 2005*. (Lanham, Md.: Rowman & Littlefield, 2005).
- ¹² Dijkstra, Sietze and Marc Le Noir. "The Big Lie About Transparency: How to Implement Performance Management in Government Successfully." IBM Institute for Business Value. October 2004. <http://www-03.ibm.com/industries/government/doc/content/resource/thought/1263011109.html>.
- ¹³ Gilpin, Robert. *Global Political Economy: Understanding The International Economic Order*. (Princeton, N.J.: Princeton University Press, 2001).



© Copyright IBM Corporation 2007

IBM Global Services
Route 100
Somers, NY 10589
U.S.A.

Produced in the United States of America
02-07
All Rights Reserved

IBM and the IBM logo are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries, or both.

Other company, product and service names may be trademarks or service marks of others.

References in this publication to IBM products and services do not imply that IBM intends to make them available in all countries in which IBM operates.