

# *Ready? Net. Go!*

## Partnerships Leading the Global Economy

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*Prepared by*



[www.mcconnellinternational.com](http://www.mcconnellinternational.com)

*in collaboration with*



[www.witsa.org](http://www.witsa.org)

## THE STATE OF PLAY

World economic growth depends increasingly on information and communications technologies (ICTs) and the abilities of countries and enterprises to collect, process, and use digital information. “E-Readiness” measures the capacity of nations to participate in the digital economy. An advanced state of national E-Readiness is needed wherever business is to flourish and economies are to grow.

Understanding E-Readiness enables companies to enter new markets aware of both the revenue potential and possible bottlenecks to growth. Governments are also realizing the usefulness of assessments as a tool for benchmarking and prioritizing action. Detailed national-level analysis creates an opening for business, government, and private organizations to come together to improve a nation’s overall ability to participate in the digital economy.

The economic slowdown led by the United States and Europe and the sell-off of technology stocks have raised uncertainties about the future direction of the globalized economy. Many of the companies that supported the recent economic expansion through aggressive technology investments are now moving to a more normal maintenance and periodic replacement cycle. While this may seem like cause for alarm in the technology market, the reality is anything but bleak. Opportunities for continued growth abound in the markets of developing countries. Global, technology-led growth will continue if increasing numbers of people become connected to the Net.

*“The network effect creates productivity increases greater than all other infrastructure changes.”*  
- John Chambers, President & CEO, Cisco Systems

In its first E-Readiness report in August 2000, in the midst of the e-business boom, McConnell International (MI) warned:

*“Around the world, ICT-led economic growth is raising productivity, creating jobs, and increasing incomes. This expansion is at risk, threatening the global economy. . . . [It] has been enabled by the exponential growth in value that comes with connecting more people and organizations to the global network. A failure of key [emerging] countries to act promptly would have an impact far beyond their borders.”<sup>1</sup>*

This is McConnell International’s second E-Readiness report. The 53 countries assessed in this report are positioned to have a profound impact on the new global economy.<sup>2</sup> Collectively

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<sup>1</sup> From *Risk E-Business: Seizing the Opportunity of Global E-Readiness*, available at [www.mcconnellinternational.com](http://www.mcconnellinternational.com).

<sup>2</sup> The countries are: Argentina, Bangladesh, Bolivia, Brazil, Bulgaria, Chile, China, Colombia, Costa Rica, Czech Republic, Ecuador, Egypt, Estonia, Ghana, Greece, Hungary, India, Indonesia, Jamaica, Jordan, Kazakhstan, Kenya, Korea, Kuwait, Latvia, Lebanon, Lithuania, Malaysia, Mexico, Morocco, Nigeria, Pakistan, Panama, Peru, Philippines, Poland, Romania, Russia, Saudi Arabia, Senegal, Slovakia, Slovenia, South Africa, Sri Lanka, Taiwan, Tanzania, Thailand, Turkey, Turkmenistan, United Arab Emirates, Ukraine, Venezuela, and Vietnam.

they represent over two-thirds of the world's population and the greatest potential markets. While the warning stands, the picture is in fact one of opportunity.

As developed countries cope with a temporary slowdown, emerging economies become important sources for e-business growth. These countries' governments, and their private sector partners, now face a great opportunity to narrow the gap between themselves and the global leaders. It is a time for action to remove barriers and move forward, learning from the policy development experiences of developed countries, and standing on their shoulders to leapfrog the old technologies.

In many countries, there is no shortage of entrepreneurial spirit. Small businesses predominate in most developing countries. In short supply are sound e-business ideas—imagining and qualifying opportunities—and the environmental mechanisms to enable those ideas to flourish, such as venture capital, business incubators, and an open business environment. Strong partnerships, led by the private sector, and enthusiastically supported by leaders at all levels of government and by non-governmental organizations, are the best way for countries to improve the business climate for entrepreneurs and make the difference in future global position.

Thus, many opportunities exist to create commercial partnerships that produce strong e-business service offerings. This report provides a glimpse into where those opportunities lie, and an impression of their shape and size. Its up-to-date analysis cuts across all aspects of the digital economy to identify the markets best poised for growth.

## PURPOSE AND METHODOLOGY

When McConnell International published its first E-Readiness report in August 2000, many countries were just awakening to the potential the Net has to offer. Some businesses were only beginning to expand into new markets. Many others were re-examining their operations, outlook, and global relationships based on the promise of the new economy. Many organizations were proclaiming that ICTs could play a role in improving lives and reducing poverty.

The times have changed. Companies are now questioning their assumptions of quick return on investment. Organizations question the impact and sustainability of “model” projects. Governments have expended billions of dollars on the “money-saving, market-opening, transparency-creating, time-reducing” e-government project, only to find that the super system does not integrate with existing systems, or that their target customers, both internal and external to government, cannot access or use it.

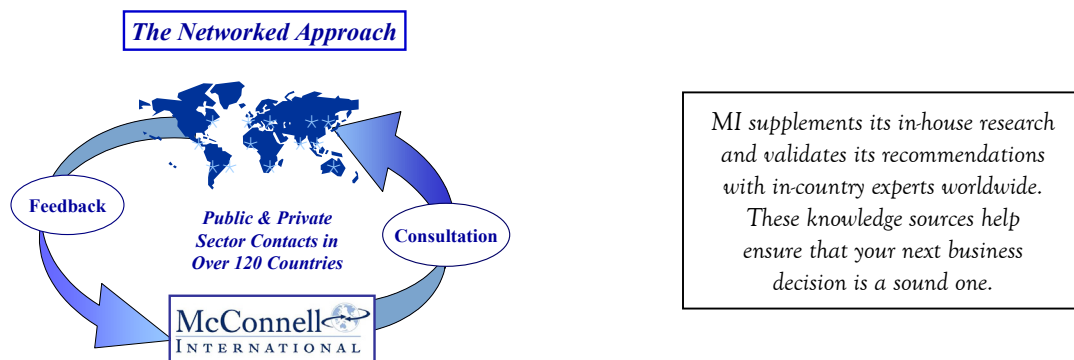
McConnell International has also changed, growing and expanding its network and perspective. Through this growth, its vision and strategy have remained steadfast: to do ethical work of the highest quality at the intersection of business, technology, and governance; to share freely the first fruits of its labor; and to have its work validated and substantiated by its global, people-to-people networks founded on mutual trust. The purpose and methodology of this report reflect this strategy.

In an environment of change, this report revisits the question posed in the first E-Readiness report: Who is poised to prosper in the digital economy? This time the analysis is expanded to highlight strategies and programs that are innovative and will have a positive and sustainable impact. The question becomes: *“Which countries and actions are enabling businesses, governments, and citizens to flourish in the networked economy?”*

The August 2000 report analyzed 42 countries, highlighting the best examples from which other countries could learn. It cautioned that entry into these markets might be risky, as foundations were still being laid, but emphasized that risks needed to be taken. If governments did not provide the necessary foundations, and if businesses did not assist through partnerships to develop infrastructure and sound policies, the global economy would not reach its potential.

This May 2001 report<sup>3</sup> shines a beacon on who is e-ready, who is taking action, and what is working, illuminating the path to economic growth, financial success, and digital inclusion. The report analyzes 53 countries and provides anecdotes on innovative initiatives that are having an impact on E-Readiness. McConnell International encourages companies, governments, organizations, policy makers, global leaders, and citizens of the world to review this report, partner with like-minded institutions, and embrace policies, actions, and opportunities that will make a difference.

The over 500 projects, opportunities, and partnerships considered for this report were collected based on the proven MI methodology of using global, people-to-people networks of mutual trust.<sup>4</sup> MI calls this participatory process “the networked approach.” In developing the



assessments, experts from the public, private, and not-for-profit sectors collaborated internationally to shape the assessment tool and to analyze each country’s capacity to participate in the networked world.

<sup>3</sup> In addition to this report, McConnell International collaborated with *Asia Business Online* to produce a special Asia version, including E-Readiness assessments of Australia and New Zealand. This report may be found in the May edition of *BusinessOnline* magazine and at [www.bolweb.com](http://www.bolweb.com). Since the Asia version went to press, Korea’s E-Readiness ratings have been updated.

<sup>4</sup> Although the ratings in this report were created using the methodology described above, they are solely the views of McConnell International LLC at the time of publication. McConnell International LLC provides these ratings as information only, and is not responsible for the consequences of any decisions made on the basis of these ratings.

Over 300 individuals participated directly in this work in the past nine months.

**Governments.** MI consulted face-to-face with government officials from 21 countries and received feedback and input from 40 countries through personal visits, phone interviews, and e-mail.

**In-Country Experts.** In selected countries, private industry provided additional assistance in verifying and substantiating the ratings. These consultations were aided by the participation of the member associations of the World Information Technology and Services Alliance ([www.witsa.org](http://www.witsa.org)).

**Global Leaders.** The following leaders in global ICT policy, strategy, and development reviewed the results:

- James Dempsey, Center for Democracy and Technology
- Allen Hammond, CIO and Senior Scientist, World Resources Institute
- Geoffrey Kirkman, Managing Director, Information Technologies Group, Center for International Development, Harvard University
- Bruno Lanvin, Executive Secretary of the G8 Digital Opportunity Task Force (DOT Force), World Bank
- Ambassador Percy Mangoela, Chairman, United Nations Working Group on Informatics
- Harris Miller, President, World Information Technology and Services Alliance
- Julia Moffett, Managing Director, Markle Foundation
- Jonathan Peizer, Chief Technology Officer, Open Society Institute, Soros Foundation
- Bill Poulos, EDS, and Drafting Chairman, Cyber Security Committee, Global Business Dialogue on Electronic Commerce (GBDe)

This report describes some of the most innovative and effective activities that are improving countries' level of E-Readiness, many of which are good models for governments to emulate and opportunities in which companies can get involved. Highlights from these initiatives appear throughout the five parts of this report.

- **THE E-READINESS ATTRIBUTES**

The first section provides a global overview of 53 countries' current state of readiness in each of five interrelated attributes: Connectivity, E-Leadership, Information Security, Human Capital, and E-Business Climate. Descriptions of projects and opportunities are the main focus of this section, providing concrete examples of initiatives that are improving countries' E-Readiness. Analysis of each attribute and comments on country improvements since the last report can be found at the conclusion of each attribute's description. Public-private partnerships are given particular attention, and are featured in the Global E-Readiness Summary chart on page 13. The E-Readiness ratings in this chart, updated from the August 2000 report, reflect the consideration of a multitude of qualitative and quantitative factors.

- **IMPACT AND INNOVATION**

The one page summary on page 15 offers a comparative analysis of current initiatives to

improve E-Readiness. Although time is needed before the projects, opportunities, and partnerships considered in this analysis will change a nation's E-Readiness ratings, countries with high levels of impact and innovation are moving fast to enable businesses, governments, and citizens to flourish in the networked economy. Regardless of current levels of E-Readiness, today's leaders in impact and innovation are the places where business opportunities are more likely to develop in the future.

- **BUSINESS OPPORTUNITIES**

While considering the initiatives for the impact and innovative chart described above, McConnell International learned of over 100 opportunities in which businesses and not-for-profit organizations can get involved. This involvement includes providing hardware, software, and systems solutions; consulting with government on legislative and regulatory policies; partnering with governments on e-government projects; and providing sound business models and solutions. Page 12 of this report provides a glimpse of these opportunities in five areas: digital inclusion (e.g., promoting rural access, wiring schools, and increasing small- and medium-sized enterprise (SME) involvement in e-commerce), e-government (e.g., designing portals, delivering G2G, G2B, and G2C e-services, and improving back-office infrastructure and systems), business systems (e.g., designing Net-enabled credit systems, and networking banks to enhance e-banking), and potential e-business partnerships (e.g., designing and joining science and tech parks or incubation hubs, and fostering local, ICT-based industries).

- **COUNTRY SPOTLIGHTS**

In this report, McConnell International chose to spotlight Brazil and India as two examples of countries grappling with large and diverse populations, and cultural advantages and barriers to joining the global economy. These articles, on page 10 and page 20, provide analysis of these challenges, and of innovative approaches being taken to improve the country's E-readiness. Other country analysis can be provided upon request.

- **CONCLUSION**

The report concludes on page 23 with a vision for businesses, governments, organizations, and others interested in building an e-ready society.

Companies can benefit from this report's dependable and timely evaluation of market risks and opportunities from a reliable, independent source, one that cautioned about a potential slowdown nine months ago. Governments receive an independent evaluation of their country's readiness for the digital economy, enabling them to learn from the readiness of other countries, and to promote their progress to the global community. Organizations benefit from validation and verification of the projects and opportunities that are making an impact.

McConnell International invites its readers to take advantage of its in-depth knowledge of the policies, actions, trends, and opportunities that are changing e-business and e-government conditions worldwide to meet their specific e-business and e-government challenges.

# Connectivity

## Are networks easy and affordable to access and to use?

*The ability to exchange information, goods, and services with the rest of the world, including affordable information and communications technology and services, reliable electrical power, and a reasonable transportation system for people and goods, is a necessary but not sufficient condition for participation in the networked economy. Connectivity addresses the overall availability and reliability of these infrastructures. Key elements include:*

- *Availability of wireline and wireless communication services, community access centers (free and paid), and networked computers in businesses, schools, and homes.*
- *Affordability and reliability of network access, including the cost of service, downtime, and the prevalence of sharing access among individuals.*
- *Underlying infrastructure, including the reliability of electrical supply for business-critical computer operations, and the ease of importing and exporting goods and of transporting them within a country.*

Numerous countries are working to expand and upgrade their communications networks. Projects to increase the capacity and coverage of the infrastructure, create local network exchanges, or take new approaches to overcome traditional barriers to access are having the greatest impact.

In Ghana, for example, the utilization of wireless payphone kiosks has provided a quick and inexpensive method to broaden rural access to the networked world. On a larger scale, joint public and private sector funding of a new five-year investment plan will enable the expansion of Korea's high-speed fiber-optic network. With \$30.7 million<sup>5</sup> coming from the government, and the private sector contributing \$22.7 million, the project will create a more stable infrastructure that will transmit data at 100 times current speeds and will incorporate 475 counties across the country, including smaller communities in rural areas. Argentina, Chile, and Estonia are other

leaders in constructing wide-sweeping network access. Kazakhstan is following suit. Recently selected by the European Bank of Reconstruction and Development as a recipient of \$160 million in funds for telecommunications development, Kazakhstan will extend its digital telephone network across the country, improve satellite telephony and Internet access, and install additional payphones.

Today, many countries' domestic Internet traffic travels over international networks. Some countries are creating in-country Internet access points, which can reduce the costs of Internet access. Kenya, for example, recently launched its own Internet exchange point. In Tanzania, a collaborative initiative among local Internet service providers (ISPs) produced the Tanzania Internet Exchange, and in Peru, the private sector was also instrumental in establishing its new network access point.

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<sup>5</sup> All amounts in this report are in U.S. dollars.

In some cases, technological advances are producing new ways to overcome traditional Connectivity obstacles. A grant from the Brazilian government, for example, has aided researchers at the Federal University of Minas Gerais in creating a low-cost personal computer that will enable lower-income members of the population to enjoy more affordable access. The government may partner with global computer manufacturers to build such a product in Brazil, which will enable its partners to avoid the country's high import taxes. It plans to use a portion of its \$500 million telecommunications fund to distribute these homegrown computers to

public medical facilities and schools. In addition, through Caixa Econômica, a state bank, the government plans to offer financing to low-income computer purchasers.

A handful of other countries are looking towards Internet telephony as a low-cost way to communicate over long distances. Pilot projects on Voice over Internet Protocol (VoIP) are enabling some nations to leapfrog technological and regulatory barriers and to foster more widespread connection to the Net.

***Connectivity remains the greatest obstacle to most countries' participation in the digital economy.***

Because a multitude of factors must be in place—affordable and accessible bandwidth, reliable electrical power, and reasonable roads and transport services—a weakness in any one can degrade a country's ability to take advantage of the economic potential of the Internet. Although, in most of the countries rated, one finds islands of high bandwidth and reliable connectivity, even these may not be affordable. The first great challenge for countries is to extend reasonable connectivity to enough people and locations to create a virtual e-society that is large enough to sustain itself and to create a presence on the Net. This challenge is followed closely by the need to extend the network to much broader participation, that is, to begin to minimize the gap between access haves and have-nots.

Improving connectivity takes leadership, including creating a workable regulatory framework for privately held communication and Internet service providers. It takes capital investment from those firms, often from foreign sources, which then requires a favorable business climate. Even under the best conditions, change on this scale takes time. For that reason it is not surprising that only two countries—Korea and Mexico—of those rated in the August 2000 report, have seen their Connectivity rating improve.

A number of promising initiatives exist, particularly in the wireless area and in state-encouraged, privately-funded rural connectivity projects. Some countries will also see substantial new high-bandwidth international connections in the next 12-18 months.

***In MI's view, real Connectivity improvement among key emerging economies can be expected to become evident in late 2002 and 2003.***



# *E-Leadership*

## Is E-Readiness a national priority?

Government has many vital roles in society including assuring stability, peace, equity, and justice. Government's most important task in increasing E-Readiness is to create an environment that encourages private sector action, while protecting consumers. E-Leadership addresses the scope and nature of government and industry efforts to promote the networked world within a country and to promote the country as a regional or global center in the networked world. Key elements include:

- Priority given by government to promoting the development of an e-society on a national level.
- Extent of demonstrated progress on e-government, including efforts to automate governmental processes, offer services to business and citizens electronically, and create national portals.
- Quality of partnerships between industry leaders and government to improve E-Readiness.
- Level of effort to promote access for all citizens.

In a handful of countries, electronic government is transforming government processes and services. Taipei city hall, for example, has connected over 175 governmental authorities via a private broadband information network. This initiative has increased government speed and responsiveness by enabling 85 percent of city hall's documents to be carried via the new intranet.

At the forefront of the e-government revolution, however, stands Estonia, which pioneered its network-based document system in August 2000. After a decision that all cabinet meetings would be conducted on-line as well as in-person, senior government officials were provided with laptops to prepare digital materials for the paperless meetings. Under this system, agendas are updated during meetings, documents are linked to further sources of information, and ministers are able to consult with other ministry officials, all via the Internet. Plans are to create an integrated videoconferencing system, so that ministers may attend sessions when away from the capital.

Efforts such as these serve to familiarize government officials with the advantages of information technology, thereby creating an impetus for further improvements in government services and E-Business Climate, ultimately benefiting the entire population.

*"Modern information and communication technologies offer the prospect of vast improvements in the speed and efficiency with which governments communicate with citizens. By making governments more accessible and more accountable, e-government can help to improve citizens' trust in those that govern them."*

- OECD statement

One example of numerous projects that are bringing e-services to citizens is in Malaysia, where three consortia are collaborating to create an e-government portal under an exclusive government license to build, operate, and transfer the portal at the end of 15 years. The portal will enable citizens to pay utility bills and traffic fines and renew licenses using Internet kiosks, which will be placed throughout urban areas.

Further extending citizens' scope of access, Subtel, Chile's telecommunications regulator, recently enabled citizen access to governmental information via mobile phones, when it created a portal site based on wireless applications protocol (WAP).

In addition to portals, specific e-services projects are receiving increasing attention. Mexico, for example, plans to use the Internet to connect all hospitals across the country. When complete, this e-health initiative will enable information exchange among all health care practitioners and will increase indigenous people's access to medical information.

Government action to create an information society is often aided by the collaborative efforts of public-private

committees. In some cases, support for the creation of such committees comes from the highest levels. Latvia's National Board on Information Society, for example, which includes educational, scientific, and business experts, was established, and is currently managed, by the country's Prime Minister. In Tanzania, a public, private, not-for-profit partnership was formed in the absence of government leadership in, or focal point for, ICT. While one private sector company organized the first meeting of eThinkTank, all of the public and private partners that now comprise and participate in the group own it. This model worked, and in less than one year, eThinkTank has received recognition, legitimacy, funding, and support from its national government, international governmental organizations, and international not-for-profit organizations.

***The existing business environment and government's role in the national digital economy shape the quality of E-Leadership needed in any particular country.***

In every country, a relationship of trust, accountability, and predictability between public and private sectors is essential. For nations with a laissez-faire, market-oriented economy where the government does not itself dominate the economy or the provision of communications services, staying out of the way of market forces, except to protect consumers, is the first priority. The second essential activity in these cases is for government to transform its own operations using the power of ICTs to decrease costs and improve service.

For nations where government remains predominant, the first task is to create an environment in which the ICT industry can thrive and take its place in the world marketplace—thus attracting capital and expertise. The second task is the same as for countries in the first group. Without the injection of ICTs into the core of government operations, policy makers will neither understand what the technology can do nor appreciate the kind of light-handed regulation that the volatility of technology demands.

Increasingly governments are realizing that they cannot ignore the important role of ICTs in economic development. Nine countries - Brazil, Chile, Greece, Korea, Latvia, Pakistan, Philippines, Venezuela, and Vietnam - improved their ratings since the August 2000 report. Five others, however, received lesser ratings, either because of changes in government that interrupted promising initiatives, or because inaction and complacency have caused a loss in momentum.

***E-Leadership will continue to grow in importance as competition among countries intensifies, as will the need for environments and officials that welcome creative public-private partnerships.***

## **BRAZIL-ON-LINE, BIG SPENDING YIELDS NEW IDENTITY**

With less than two years remaining in his second four-year term, President Fernando Henrique Cardoso is striving to leave his legacy, on-line. ICT investments, deregulation, and liberalization have been themes throughout Cardoso's tenure. However, there still are many challenges to overcome. Over 20 million Brazilians live below the poverty line. Geographical barriers and high costs limit teledensity to only 39 percent of the population. A large government bureaucracy also slows the rate of change. To overcome these challenges, the president pledges three goals: paperless government, digital inclusion, and increased investment.

### *Paperless Government, Government-on-Line*

Cardoso has pledged to have all over-the-counter federal services available on the Web by the end of 2002. A new norm eliminates paper communications on bills and legal proposals between the president and his ministers. In October, the government launched its services and information portal, which now features some 800 services and 4,500 information items. Through this one site, users can view their financial status, pay outstanding tax fees, apply for a passport, search for employment, access on-line libraries, and learn federal procedures and laws. Monthly page views have tripled since its launch from four to 12 million, and are projected to reach 70 million by year-end.

Recent e-government accomplishments include over ten million people filing their income taxes electronically, over 130 million people voting electronically, determining the elected candidates in 24 hours, and launching an e-procurement pilot program in January 2001. Services soon to be launched include e-health services and a universal health smart card.

Brazil is sixth worldwide in ICT expenditures and the federal government is the principal consumer. The potential savings from lowering transaction costs, increasing productivity, and the injection of greater transparency makes these expenditures more than worthwhile. The government claims that savings have already been achieved, and are expected to exceed \$154 million a year. These savings are to be reinvested to improve public services. The test will come, however, over the next few years to see if the model of having industry donate technology is sustainable. As PSINet, which donated the web site, and other companies need to show revenue gains, cost-sharing models may be retooled, leaving the government responsible for more of the cost of going paperless.

### *Digital Inclusion, Citizens-on-Line*

With the government moving its services on-line, the question becomes one of access. Less than ten million of Brazil's 170 million citizens are Internet users. Yet this number represents half of all users in Latin America. To increase teledensity and access, the government recently privatized the entire Brazilian state-run telecommunications system and created a regulatory agency

The universalization of access through electronic public presence points program is one of the government's most ambitious projects to fight inequality and promote citizenship. Its pilot project is providing Internet access in 100 localities, using any device that best serves the people (e.g., a locally developed \$300 computer with no hard drive may be used). The program's goal is to connect approximately 1,600 rural communities with populations of 600 people or more to the Net. Another

program enables communities to get on-line. Sampa.org, a network coordinated by community stakeholders, has established ten electronic access points where the community controls the content of its portal, receives free e-mail, and can access public services.

The results of these initiatives will take some time to be felt, but as user rates continue to rise, the telecommunications fund increases, and public, private, and not-for-profit sector partnerships strengthen, the potential of increasing access to the 16,000 targeted rural communities grows.

#### *Investments, Businesses-on-Line*

Brazilian businesses have been moving on-line faster than elsewhere in Latin America. Commercial activities in Brazil that use the Internet comprise nearly half of the Latin American market, in terms of users and in volume of transactions and business deals. To encourage this growth, the government is launching a new web portal with an interactive, searchable database for investment and business opportunities in Brazil. The State of São Paulo has already launched a free information portal for national and foreign investors. Revenues from business-to-government e-commerce will rise substantially this year. A recent law granting tax breaks and incentives for the country's IT sector until 2009 will serve to increase the investments in and diffusion of e-commerce activities.

The results of businesses moving on-line are hard to gauge. Statistics abound- \$580 million in on-line sales predicted this year, ninth in the world for Internet users' time spent on-line per month for January 2001, and six to 16 percent of these users purchasing online. The reality is that Brazil, with its large population, is a ripe market for e-commerce, especially once security issues and digital signatures are addressed. However, fear of Internet taxation, existing heavy customs taxes on non-IT goods, and a poor package delivery infrastructure slow the growth of e-commerce, and leave some businesses concerned and off-line.

#### *What's Missing, Schools-on-Line?*

Not represented on-line in Brazil are the schools. While Brazil possesses a sophisticated installed technology base and qualified people, some of its neighbors have invested more heavily in education. The government now has plans to connect all schools to the Internet by 2005. This goal is ambitious, but important to help Brazil maintain its early advantage and market position, especially when looking at its neighbor Argentina, which has a strong middle class of educated people and invested earlier in IT in education.

Non-profit organizations like the Committee for Democracy in Information Technology (CDI) have felt this need and taken action. CDI has started Information Technology Citizenship schools to train community members in computer skills during intensive three-month courses. The schools are self-sustaining and have trained over 60,000 students.

Programs like CDI's training institutes in poor, rural areas help, but more is needed. Getting computers into all of its schools, training teachers, and developing appropriate curriculum will take time and careful effort. However, unless Cardoso moves quickly to ensure Brazilian children are exposed to technology early, his efforts to leave his mark on-line will go unnoticed by large numbers of unconnected young people.

Five types of *Business Opportunities* abound in the 53 countries examined in this report:

- **DIGITAL INCLUSION**
- **GOVERNMENT SYSTEMS**
- **BUSINESS SYSTEMS**
- **TRAINING**
- **E-BUSINESS PARTNERS**

**16 COUNTRIES - 36 OPPORTUNITIES**

**Bulgaria:** \$14.4 million is currently earmarked to modernize the education system. This *digital inclusion* project includes upgrading equipment and providing Internet access to all schools.

**Hungary:** Over the next two years, \$65.5 million has been allotted for projects ranging from *government systems* development, such as creating a national portal and establishing an e-procurement system, to increasing the number of community access centers and upgrading academic and university networks.

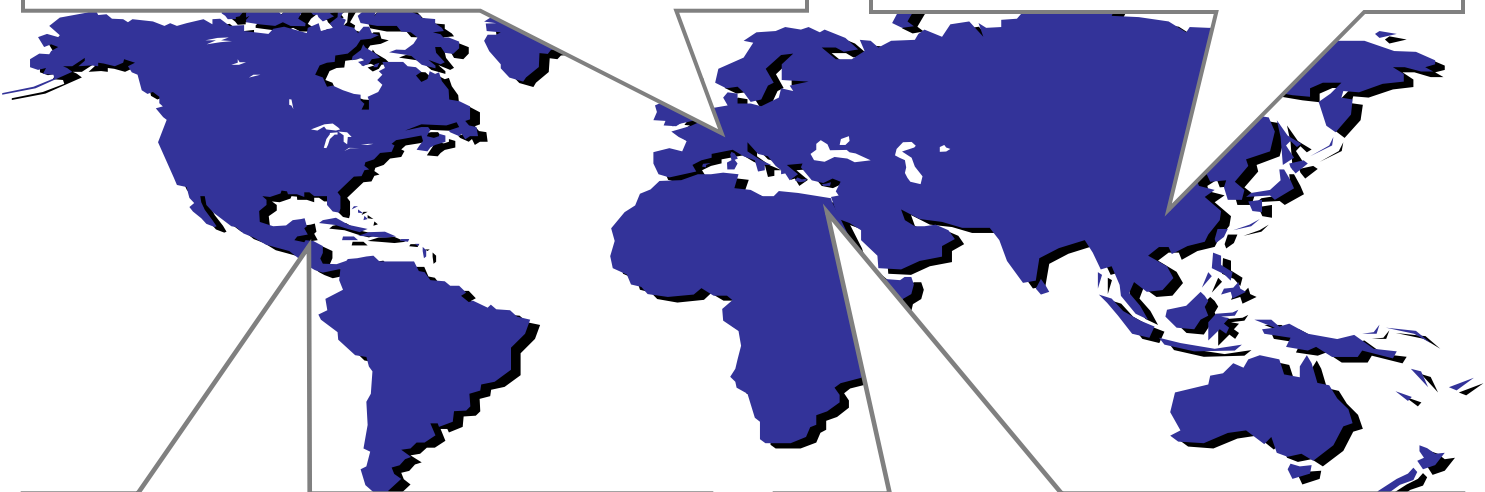
**EUROPE**

**12 COUNTRIES - 28 OPPORTUNITIES**

**Korea:** A long-term project to promote e-commerce and improve e-business infrastructure has been planned. Included in the initiative are *business systems* to facilitate transactions, payments, and document exchange and the establishment of *government systems* for the provision of e-services.

**Pakistan:** \$3.5 million has been planned to fund 11 *digital inclusion* projects, with a focus on upgrading IT facilities in academic settings. In addition, a 700-acre IT hub, which will include a software development park, is looking for *e-business partners*.

**ASIA**



**12 COUNTRIES - 25 OPPORTUNITIES**

**Chile:** Under Enlaces, the successful ICT in education program, \$200 million has been allocated to improve teacher *training* and to introduce new national curriculum over the next five years.

**Mexico:** In a recent speech, President Fox projected that spending on the e-Mexico project will top \$400 million over the next six years. The project will focus on *digital inclusion* for rural areas, including creating communications centers in post offices. In addition, e-commerce, e-education, e-government, and e-health initiatives are being planned.

**LATIN AMERICA AND THE CARIBBEAN**





**13 COUNTRIES - 27 OPPORTUNITIES**

**Egypt:** Two major initiatives are planned. Over 3,000 post offices will be networked to initiate electronic postal services and new applications in postal banking. In addition, the number of "IT Clubs," membership-based computer centers that provide Internet access and *training* courses, is to be increased by 50 each year. Funding for these initiatives will come from a telecommunications fund tied to a \$1 billion upgrade in Egypt's telecommunications backbone.

**Senegal:** A *digital inclusion* project aims to connect 7,000 villages over the next three years.

**AFRICA AND THE MIDDLE EAST**

Country	Connectivity	E-Leadership	Information Security	Human Capital	E-Business Climate
Argentina	↻				
Bangladesh					
Bolivia	↻	↻			
Brazil		↻		↻	↻
Bulgaria					
Chile	↻	↻	↻	↻	↻
China				↻	
Colombia					
Costa Rica					↻
Czech Republic	↻				
Ecuador					
Egypt	↻	↻		↻	
Estonia				↻	
Ghana					
Greece		↻			
Hungary					
India	↻	↻			
Indonesia					
Jamaica		↻		↻	
Jordan		↻			
Kazakhstan					
Kenya					
Korea, Republic of	↻				↻
Kuwait					
Latvia		↻			
Lebanon					
Lithuania		↻			
Malaysia	↻	↻			↻
Mexico		↻			
Morocco					
Nigeria					
Pakistan		↻			
Panama				↻	↻
Peru	↻				
Philippines	↻	↻		↻	
Poland					
Romania					↻
Russia					
Saudi Arabia					
Senegal				↻	
Slovakia					
Slovenia					
South Africa				↻	
Sri Lanka				↻	
Taiwan					
Tanzania		↻		↻	
Thailand		↻			
Turkey		↻			
Turkmenistan					
Ukraine					
United Arab Emirates		↻			
Venezuela					
Vietnam				↻	

LEGEND	
	Blue - indicates that the majority of conditions are suitable to the conduct of e-business and e-government
	Amber - indicates improvement needed in the conditions necessary to support e-business and e-government
	Red - indicates substantial improvement needed in the conditions necessary to support e-business and e-government
	Arrows - indicate public-private partnerships that are achieving E-Readiness impact

## SUMMARY OF E-READINESS ATTRIBUTES

The E-Readiness ratings combine a dynamic evaluation of the relevance and accuracy of quantitative data with an understanding of myriad cultural, institutional, and historical factors relevant to the actual situation in each country. The ratings measure status and progress on five interrelated attributes:

### Connectivity – *Are networks easy and affordable to access and to use?*

- Availability of wireline and wireless communication services, community access centers (free and paid), and networked computers in businesses and homes.
- Affordability and reliability of network access, including the cost of service, downtime, and the prevalence of sharing access among individuals.
- Reliability of electrical supply for business-critical computer operations; and the ease of importing and exporting goods and of transporting them within a country.

### E-Leadership – *Is E-Readiness a national priority?*

- Priority given by government to promoting the development of an e-society on a national level.
- Extent of demonstrated progress on e-government, including efforts to automate governmental processes, offer services to business and citizens electronically, and create national portals.
- Quality of partnerships between industry leaders and government to improve E-Readiness.
- Level of effort to promote access for all citizens.

### Information Security – *Can the processing and storage of networked information be trusted?*

- Strength of legal protections and progress in protecting intellectual property rights, especially for software.
- Extent of efforts to protect electronic privacy.
- Strength and effectiveness of the legal framework to address and prosecute computer crimes, authorize digital signatures, and enable public key infrastructures.

### Human Capital – *Are the right people available to support e-business and to build a knowledge-based society?*

- Quality of and participation levels in the education system, with an emphasis on efforts to create and support a knowledge-based society.
- Penetration of ICT in schools and ability of educators to use and teach in accordance with the technologies.
- Culture of local creativity and information sharing within the society.
- Skills and efficiency of the workforce, and strength of efforts to retain skilled managers and technologists.

### E-Business Climate – *How easy is it to do e-business today?*

- Existence of effective competition among communication and information services providers.
- Transparency and predictability of regulatory implementation, openness of government, rule of law, and general business risk (e.g., political stability, financial soundness).
- Openness to financial and personal participation by foreign investors in ICT businesses.
- Ability of the financial system to support electronic transactions.
- Sponsorship of science and technology parks as hubs of innovation and support for new enterprises.

What these attributes do not make evident, however, is the likelihood for a country to maintain its position as a leader, improve its status, or fall behind in the race to cyberspace. One indicator that can demonstrate this is:

### 🔗 Public-Private Partnerships – *Where are they making a difference in E-Readiness?*

- The arrows coming together symbolically identify innovative initiatives involving collaboration among the public sector, private industry, and not-for-profit organizations.
- Partnerships included enable a balanced approach toward development that considers the needs of multiple stakeholders, thus creating a sense of ownership, greater sustainability, and improved E-Readiness.

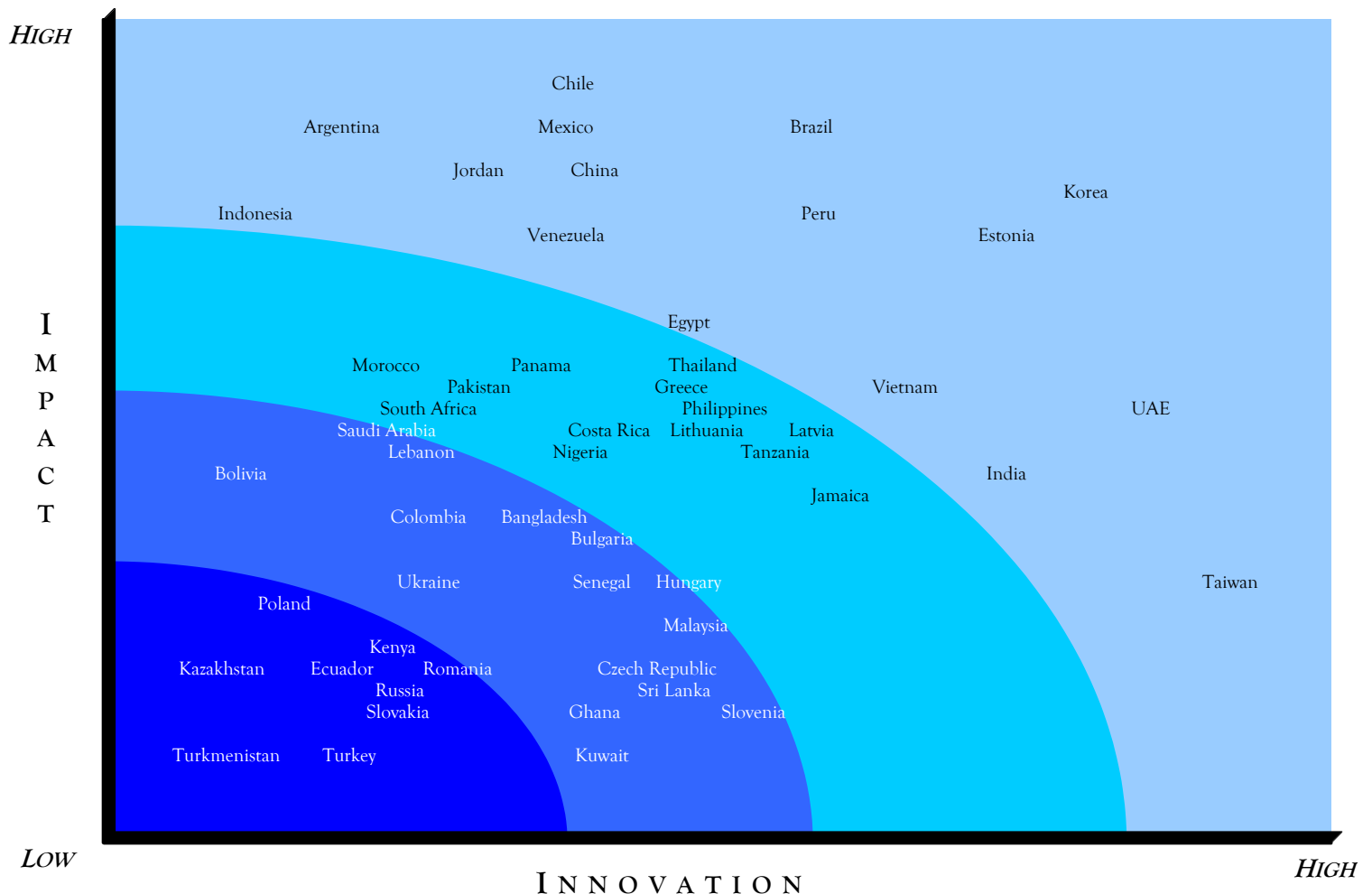
## E-READINESS INITIATIVES: IMPACT AND INNOVATION

While partnerships are the strongest way to progress, they are not the only significant actions underway to improve E-Readiness. McConnell International examined over 500 initiatives across all attributes and countries to determine which are making a real difference in E-Readiness- sound, sustainable programs, reforms, and policies that increase Connectivity, strengthen E-Leadership, improve Information Security, develop Human Capital, and enhance the E-Business Climate.

The actions evaluated included projects completed within the last six months, and opportunities, which are initiatives in which companies can still get involved to shape legislation or participate in funded programs. For some of the projects, such as digital signature laws or privatizing telecommunications, implementation is ongoing. The report examines two key aspects of these actions- impact and innovation.

- **Impact.** To create change in society, multiple actions must be taken and many people involved. Actions that would affect larger portions of the population or were otherwise more comprehensive in scope and effect are favored.
- **Innovation.** New technology and new business models supported by these technologies affect the cost, speed, and transparency of service delivery, and final product in ways recently unimaginable. Projects and opportunities that use new technology or have a new model or approach that will yield greater benefits are assessed more favorably.

This E-Readiness initiatives chart summarizes these evaluations, showing which countries are moving forward with actions that have the potential to make a real difference in their ability to participate in the digital economy. Today's leaders in impact and innovation are the places where business opportunities are more likely to develop in the short-term, irrespective of today's level of E-Readiness. These are the markets of tomorrow.





# Information Security

## Can the processing and storage of networked information be trusted?

*A vital aspect of E-Readiness is the level of information security that an emerging market can assure. Poor protection of intellectual property can stunt the growth of the national software development industry. Inadequate protection of personal data creates barriers to information exchange. Failure to recognize electronic signatures or to permit the use of encryption undercuts trust in the new ways of doing business. Key elements include:*

- *Strength of legal protections and progress in protecting intellectual property rights, especially for software.*
- *Extent of efforts to protect electronic privacy.*
- *Strength and effectiveness of the legal framework to address and prosecute computer crimes, authorize digital signatures, and enable public key infrastructures.*

Many countries' e-business environments continue to suffer due to obsolete laws and weak enforcement mechanisms to protect the creation, maintenance, and dissemination of digital information. A small group of leaders are emerging, however, as some countries are finding innovative means of tackling the unique challenges of safeguarding information in cyber space.

The Polytechnic Engineering School of Brazil's University of São Paulo, for example, recently established an online privacy certificate program for Brazilian web sites that protect users' personal data. Over the past few months, authorities in the same Brazilian state have been seizing pirated software in an effort to discourage piracy. The national government recently followed suit, launching a campaign to reduce software piracy through a consumer awareness campaign, which points out the criminality of selling and purchasing pirated goods.

The Korean government, with the Software Property Rights Council, also recently stepped up its investigations,

targeting nearly 1,500 domestic and foreign corporations, universities, and government offices since President Kim Dae-Jung named controlling software piracy as a priority earlier this year. Furthermore, Korea has planned a cyber crime prevention system targeted against online offenses such as data fraud and privacy intrusion. In addition to establishing damage control centers, the system will include hotlines to international information security networks. The Ministry of Information and Communication also plans to raise public awareness by issuing a white paper on cyber criminal activities.

Although India took great strides in outlawing Internet-related crime when it passed its Information Technology Act last year, it soon found that the majority of its police force had little experience with such matters. To overcome this problem, Indian industry helped organize a National Cyber Cop Committee, which, with the aid and advice of a group of teenage hackers, will train police officers and judicial members on how to identify and prosecute cyber crimes. One area that India's Act did not successfully address, however, was privacy. Instead, the act gave government officials unnecessarily

broad authority to intercept communications.

India is not the only country to have attempted to exploit the expertise of hackers. Earlier this year, Bulgaria's president publicly offered a job to an unknown hacker who had managed to access an official web site without damaging any information.

While several nations are taking steps to protect themselves against an increasingly global threat to digital information, Chile provides a strong model of dual-sector action

to combat cyber crime. Its Public-Private Alliance for ISP Cooperation manages the sharing of security-relevant information and organizes a hacker blacklist.

Finally, in the effort to ensure the secure transmission of electronic documents, numerous countries are currently developing or have recently passed electronic signature legislation, often involving a consultative process with members of the private sector. Firms, governments, and civil society should continue to work cooperatively to strengthen legal frameworks for cyber security.

***Poor Information Security, be it rampant software piracy, weak privacy protection, or networks that are technically or legally vulnerable to criminal attacks, drains the value of otherwise useful efforts to increase E-Readiness.***

In its early stages, the Internet was a network of institutions (primarily universities) that existed in a culture of trust and had underlying trust relationships. Today's Net is a very different place, an international bazaar of unknown participants conducting arms-length transactions. Add in its anything-goes culture, and the Net resembles a youthful jazz band, "cooking" but unpredictable.

Business remains a world that values predictability and assigns a cost to risk. International banks today do not accept e-mail orders from their correspondent banks, preferring telex or phone. But this constraint is temporary. As the Net matures, and the need to transmit more valuable information increases, the secure places on it will become the places for business-to-business transactions.

Consumer e-business will proliferate in a slightly looser environment for two reasons. First, lower value transactions mean statistically lower risk. Second, peer-to-peer arrangements, whether lightly mediated (e.g., Napster, eBay) or direct, will continue to evade efforts to create accountability. The choice here is clear: a new business model for information products, or a cost-effective way to protect small amounts of information.

No changes in ratings occurred since our last report. While a number of countries have made public commitments to reduce software piracy, it is too early to measure the results. Privacy remains an undervalued commodity in most of the countries rated. And, while some, like Korea, are working hard to build secure communications infrastructures, deployment is still in its early stages.

***The market for products that combine information security with convenience will grow strongly in 2002, but information owners will face an increasingly difficult fight to protect copyrighted material.***

# Human Capital

## Are the right people available to support e-business and to build a knowledge-based society?

*To participate in the networked world, a country must develop and retain a strong a cadre of skilled managers and technologists. It also needs a population that is interested in the network and able to use it. Key elements include:*

- *Quality of and participation levels in the education system, with an emphasis on efforts to create and support a knowledge-based society.*
- *Penetration of ICT in schools and ability of educators to use and teach in accordance with the technologies.*
- *Culture of local creativity and information sharing within the society.*
- *Skills and efficiency of the workforce, and strength of efforts to retain skilled managers and technologists.*

Efforts to cultivate highly-skilled workforces are continuing around the globe. In some countries, the toughest problem may be to create incentives to retain skilled workers once they are trained.

Several countries have been emulating Costa Rica's early success in bringing information technology to its schools. In Latin America, two leaders have implemented programs to build IT skill bases early on. In September 2000, Argentina initiated Educ.ar, the country's national educational portal. By the end of this year, the site plans to post the official curriculum for all of the country's primary and secondary schools. During the first five years of its Enlaces program, the government of Chile spent over \$100 million on Internet connections, software, and technical training in schools. Private sector contributions have been vital. Telefonica, for example, provides cost-free Internet access.

Public-private partnerships in other regions are also achieving impact. Sri Lanka's University of Columbo, for example, has

created an "External Degree Program" resulting in a Bachelor of Information Technology. While university faculty members conduct the examinations, the program is linked with research facilities and private sector training institutions to jointly design the curriculum and provide the actual instruction. The program will produce 3,000 graduates in the next three years, 100 times the capacity that the university alone could have produced.

SchoolNet SA is another strong partnership, which joins four South African national government departments with non-governmental organizations and global high-tech companies who are committed to improving technology skills. Various projects have been implemented, including networking of schools and the creation of provincial tech hubs, which provide educational training and support.

In addition to bringing technology to classrooms, many countries are encouraging English instruction to help their citizens gain a competitive edge in the Internet economy.

In Jordan, for example, a two-year long educational reform began last year obliging students to achieve both English and computer literacy. Language instruction will begin from the first grade and computer skills will be taught beginning in the second year of primary school.

E-learning is also gaining in appeal. Mexico's prestigious Technological Institute of Monterrey has instituted virtual classes, which are broadcast via satellite to more than 81,000 students at 1,400 sites throughout Latin America, including Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, Panama, Peru, and Venezuela. With a leaner focus, a unique alternative to conventional IT Parks has enabled Vietnamese techies to gain the knowledge and skills that will help them succeed. A recently launched on-line IT Park, which has received the support of local and global universities, provides a cyber

forum for idea exchange and training, as well as video conference facilities, and a place for businesses to market their services and seek partners.

The most difficult challenge for many countries, however, has been in creating the motivation for skilled members of its populace to refrain from seeking more lucrative opportunities abroad. Malaysia has recently begun to attack this problem head-on. To improve its retention of skilled workers, it has offered an array of incentives designed to attract expatriates who have pursued careers in the IT field. By offering tax exemptions on remitted income for up to two years after their return, exemptions on import duties applying to personal belongings, and permanent residence status to foreign-born spouses and children, Malaysia hopes to reverse its brain drain.

***People are the “why” of the Net. It links individuals to one another across national and institutional boundaries.***

People also make the difference between success and failure in national efforts to become connected. Fortunately, in the words of United Nations Secretary-General Kofi Annan, “Brain power is the one commodity that is equally distributed among the world’s peoples.”

But raw talent is not enough. A broad range of skills—technical, managerial, entrepreneurial, and administrative expertise—is a prerequisite for progress in the digital economy. Many of the countries rated have strong programs underway to develop technical experts, such as software engineers. These people, who cost relatively little to employ, have already enabled several countries to develop a strong, export-oriented computer programming industry. But technical skills are the easiest to transfer. Successful participation in the networked world requires environments that foster entrepreneurship, providing a safe place for indigenous e-businesses to develop. Project management and other entrepreneurial skills can only partly be taught; experience, including the experience of failure, is essential. Without such softer skills, the burgeoning high tech sectors in many countries will remain export-focused enclaves, incapable of spreading the benefits of ICTs to traditional national industries such as agriculture and manufacturing.

Public-private partnerships can be highly successful in this area, particularly where industry’s expertise complements that of universities, to produce high quality engineers and to incubate small businesses.

***Making sustainable, long-term investments in human capital, with strong industry participation, is the most important single action that countries can take to move forward into the networked world.***

## INDIA, INC.—A SURGING, CHAOTIC POWER

Poised to overtake China as the world's most populous country, and accounting for 30 percent of the world's software engineers, India has entered the twenty-first century with great potential and challenges. Certainly Indians are bullish on India, Inc., the brand coined by the National Association of Software and Services Companies in its 1999 study produced in collaboration with McKinsey & Co. This collaboration of NASSCOM president Dewang Mehta and the consultancy's managing director, Rajat Gupta, is an example of the strong onshore-offshore partnerships that are creating a virtuous cycle of human, intellectual, and financial capital flows between expatriate and domestic Indian professionals.

India's one billion people are only beginning to be affected by an export-driven development strategy that aims to increase exports to 30 percent of GDP in 2005, with one-third to come from the ICT sector. Bullock carts overloaded with sugar cane still creep past the telephone access shops that have sprung up in every congested village, the drivers and shop operators both unaware of the valuable information about crop markets that lies just beyond their reach in cyberspace.

The scale of India's ICT challenges is daunting. Connectivity remains the biggest hurdle. Unreliable electrical power, poor roads, harsh climatic conditions which demand rugged equipment, and costly services from a monopoly services provider (scheduled for privatization next year) are the major obstacles. The central government will invest \$50 million in VSAT antennas and servers to create community Internet access in up to 1000 population centers in the next two years. It is also partnering with MIT's Media Lab to promote low cost wireless Internet access.

Human capital is a more complex matter. The existence of 17 official local languages magnifies the challenge of providing basic education in ICT skills. At the university level, the demand for skilled ICT engineers and managers is outstripping the capacity of the educational system. Faculty-student ratios are worsening, and the ability to attract qualified faculty is limited by overly restrictive government rules regarding outside income. On the other hand, retention of skilled young people is improving—more than half the graduates of the best computer institutes now stay in India. Yet, many westerners continue to undervalue the quality of India's technical skill base. Low labor costs continue to be an Indian advantage, but some greater respect is due when, as is the case now, more Indian than U.S. companies have earned the top quality rating from the Carnegie-Mellon University's Software Engineering Institute.

In general, the working relationship between the public and private sectors is a difficult one. The central government is an increasingly essential partner for progress. Notwithstanding the leadership of visionary officials in Delhi, and of visionary politicians in Bangalore and Hyderabad, progress is often stymied by a bureaucracy inherited from the British Empire at the peak of its decline. The crafty denizens of the derisively named "babucracy" are skillful at retaining their middleman status and delaying the potential of e-government to streamline import/export processing, permit issuance, and otherwise strengthen India's national economy.

As a result, the private sector has moved forward in areas where obstacles were fewer. Call centers, a leading service export, are assisted by favorable cost structures for overseas connections, but held back by regulation in domestic markets. And indeed, the Indian ICT market will continue to surge along the paths of least resistance.

What's different today is that the slowdown in the global ICT industry provides a moment in time for action that will remove barriers. In India, the entrepreneurial spirit that energizes small businesses is ubiquitous. Less present, however, are the mechanisms, such as venture capital and business incubators that can help generate sound ICT business ideas and enable them to thrive. What will make a difference in India's future market position are solid partnerships between members of India's global private sector and leaders at both the state and national levels of India's government. Furthermore, there are numerous opportunities for non-Indian companies to collaborate with local partners to develop high-end e-business service offerings.

# *E-Business Climate*

## How easy is it to do e-business today?

*E-businesses operate in a complex context of regulatory policies and institutional arrangements that set and enforce the rules of private action in a competitive marketplace. Where policies and practices favor e-business, return on investments will be higher. Where competition is stifled or the rule of law is weak, investors rightly demand greater premiums for risk. Key elements include:*

- *Existence of effective competition among communication and information services providers.*
- *Transparency and predictability of regulatory implementation, openness of government, rule of law, and general business risk (e.g., political stability, financial soundness).*
- *Openness to financial and personal participation by foreign investors in ICT businesses.*
- *Ability of the financial system to support electronic business transactions.*
- *Sponsorship of science and technology parks as hubs of innovation and support for new enterprises.*

Improvement of nations' E-Business Climate is occurring at a variety of levels. Programs that expand participation in the e-economy to SMEs, for example, are an effective way to ensure future growth.

While the Grameen Bank has gained international recognition for its micro-credit and cellular telephone programs, a lesser-known program is aiding Bangladeshi villagers to access market information via the Internet about the products they produce. By launching a web site, the project will enable rural small businesses to learn about market prices and strengthen their negotiating position with the middlemen who drive down their margins.

In Chile, a public-private partnership led by Corfo, the Chilean government's economic development agency, is supporting the growth of local companies by enlisting the help of several international corporations. Participants provide hardware, Internet access, free web sites, and e-business training programs. One local subsidiary of a sponsoring corporation has created a web site

with content specially targeted for the small business community. On the site, SMEs are able to exchange their goods and services, forge new relationships and business agreements, and access an array of services.

One of the most significant hindrances to the growth of global e-commerce is lack of familiarity with credit cards. South Africa provides an example of an initiative that is underway to build trust in alternative payment methods. Using a smart card system, citizens of the Venda region, one of the country's most remote areas, will be able to obtain state benefits, make payments, or deposit savings through electronic kiosks. By utilizing graphic displays that depict the various transactions, the obstacles presented by illiteracy may be easily overcome. Identification of users through biometric fingerprinting will ensure the security of these transactions. So far, over 8,000 residents of the region have enrolled in the project.

Finally, many projects to improve E-Business Climate are targeted towards the

promotion of international e-commerce. In a move to increase efficiency and reduce illegal activities, China has developed a virtual port to process import and export permits electronically. Utilizing numerous layers of security measures, the port links over 60 permit offices to an electronic database and enables importers and exporters to complete customs declarations and foreign-exchange transactions via the network. In the future, the e-port plans to offer such services as on-line export tax rebates and express customs declarations.

The United Arab Emirates' \$200 million Internet City, launched last year, has already attracted over 200 companies, including many of the global e-players. The city encompasses not only an e-business community, but also government and residential space for up to 100,000 people.

Billing itself as the "first truly intelligent city," the Dubai project features state-of-the-art information and communication technologies, such as video conferencing and networked appliances, integrating aspects of social relations. Companies, households, government offices, and educational and health resources will eventually be linked in a high-speed intranet with a global Internet connection. The entire project, which will grow to include additional incubator facilities, dubbed the Dubai Ideas Oasis, is to be constructed in eight stages over the course of 15 to 20 years. At each stage, upgrades in communications technology will occur to maintain the cutting-edge draw of the complex's communications system. By creating such a unique fully networked city, Dubai hopes to establish itself as the pre-eminent Middle Eastern technology hub.

***Like any business, e-business works best within a regulatory environment that protects consumer and national interests in the least burdensome manner possible, and creates a stable environment where markets can flourish.***

This approach is gaining credence around the world, but much hard work remains to be done. The greatest unfinished task in most countries is the move from a state-owned communications monopoly to a properly regulated private market where multiple providers compete to provide communications services. This transition is not easy, as the experiences of developed countries clearly teach. The speed of technology and market changes outstrips the ability of most regulators to stay current. Where a light hand has been taken, progress has been most pronounced, particularly in the growth of smaller enterprises that are the principal engine of job creation.

Transparency and predictability in official decision-making are as important as a light regulatory hand. While the slow pace and geographic reach of traditional business may have limited the negative impact of corrupt or arbitrary practices, global e-business at Internet speed erodes this cushion in two ways. First, electronic transaction systems are powerful weapons against duplicitous accounting practices. It becomes much more difficult to hide one's tracks when cash becomes less customary as a means of payment.

Second, the Net is, by its nature, a democratizing technology. In its brief history, ICT has repeatedly demonstrated its ability to stay ahead of repressive forces that would turn it from its natural tendency to bring people together into a tool of control. Progressive officials in many governments are embracing the Net's potential to make government more responsive to the citizens. The availability of information about government activities is exploding as government and non-profit organizations peel back the layers that only a few years ago hid most of what government did from the public eye.

While some countries saw their ratings for E-Business Climate drop since the last report, the reason was often a broad-based economic decline that is making business generally less attractive. But the economic slowdown among the developed countries has not yet chilled the global climate for e-business. Three countries – Brazil, Greece, and Slovenia – have improved their ratings since our last report. Indeed, companies that rely on developing countries to supply ICT services, such as software programming, are weathering the slowdown better than those who are not benefiting from the reduced costs such arrangements provide

***Emerging economies and their business partners that want to take advantage of the opening created by the slowdown must move with uncharacteristic speed toward a more open environment. Only a few will be successful in this attempt.***

## CONCLUSION

The world is moving into the twenty-first century on waves of technological change. It is the beginning of an integrated transformation that information, communication, and biotechnologies will bring to every aspect of daily life. No one today can imagine what life will be like in 20 or 30 years, which habits and customs will continue and which will be changed forever. What can be imagined, however, is a world in which the benefits of technology belong to many more people than today. Such a world is more stable, more sustainable, more livable, and more just.

One of the transforming features of ICTs is the way they can bring together people who were previously separated by geography, economics, or politics. Mutual understanding can lead to new relationships among people, societies, and nations. This report's focus on partnerships reflects that potential benefit, but that benefit is not inevitable. The paradigm shift in organizational management, from hierarchical to network-centric, is only just taking hold in the most progressive large companies. And in their external relations, many organizations, both public and private, continue to play a zero-sum game. These non-collaborative models will remain strong until they are shown to be less effective than partnerships.

The market economy is the dominant force in today's society. Competition is a principal stimulus to excellence, and yields benefits for everyone. Partnerships do not mean the end of competition. The dance is rather more subtle, more nuanced. Today's partner in one area may be tomorrow's competitor in another. Managing such complex relationships taxes the Western preference for clear lines, for good guys and bad guys.

But a global world demands subtlety. Governments, businesses, and civil society cannot deal alone with the changes that are coming. This report suggests, somewhat by prescription, but mostly by example, some of the enabling steps that government must take to permit the private sector to be an effective partner. The private side—both business and non-profit—must step up responsibly to the opportunity, taking a broader and longer view. All should remember that no one has a monopoly on hope, on virtue or on insight.



### **WHAT IS McCONNELL INTERNATIONAL?**

McConnell International (MI) is a global technology policy and management consulting firm that helps its clients seize opportunities in the global economy. Clients benefit from MI's strategic insights and build relationships using MI's networked approach. This proven methodology of using trusted public and private networks to leverage the risk of e-business and e-government gives our clients a unique advantage.

### **WHAT IS THE MI MISSION AND VISION?**

McConnell International's mission is to position its clients as global leaders in electronic business and government. MI specializes in ethical work at the intersection of business, technology, and governance, enabling its clients to achieve high levels of E-Readiness.

### **WHAT IS MI'S EXPERTISE?**

McConnell International and its global partners have the most current knowledge available on changing E-Readiness conditions worldwide. MI's published E-Readiness reports evaluate over 50 countries' capacity to participate in the networked economy, backed by broad experience and understanding.

### **WHAT DOES MI DO?**

McConnell International positions its public and private sector clients to take maximum advantage of the global economy through:

- **Strategic Advice.** We develop strategies and plans that consider global and local realities, E-Readiness conditions, your culture and needs, and innovative new technologies and trends.
- **Building Partnerships and Opening Doors.** We identify local and global partners for information and communications technology projects and help businesses and governments build alliances that enable growth and new business.
- **International Visibility.** We promote your business or government as an innovator and leader in the new economy.
- **Research and Analysis.** We provide focused, strategic analyses of e-business and e-government conditions in emerging economies.
- **Project Design.** We identify and help initiate ventures in new and existing markets, yielding more customers, stronger partners, and increased revenues.

### **HOW IS MI UNIQUE?**

McConnell International is recognized as an independent, objective, and discerning voice on the strategic future of the global digital economy. MI distinguishes itself by:

- Focusing solely on e-business and e-government.
- Operating a worldwide, government-to-government Internet policy network of experts in over 120 countries.
- Bringing its clients energy, agility, and appreciation of the absurd.