



The state of e-government around the world



Part 2

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Chapter 4

World e-government rankings 59

Chapter 5

Citizen empowerment and inclusion 83

Chapter 6

Measuring e-government 93

Chapter 4

World e-government
rankings

4.1	Global e-government development	60
4.2	Regional comparisons	61
4.2.1	E-government in Africa	61
4.2.2	E-government in the Americas	65
4.2.3	E-government in Asia	68
4.2.4	E-government in Europe	71
4.2.5	E-government in Oceania	74
4.3	Economic groupings	75
4.4	Progress in online service provision	75
4.4.1	How governments rank in online services	76
4.4.2	About the services governments provide online	77
4.4.3	The data behind the rankings	81

The United Nations E-Government Survey 2010 finds that citizens are benefiting from more advanced e-service delivery, better access to information, more efficient government management and improved interactions with governments, primarily as a result of increasing use by the public sector of information and communications technology. Most countries have published a tremendous amount of information online, many going beyond basic websites to provide national portals that serve as a major starting point for users to connect to government services in different ministries. At the same time, many developing countries need to devote additional energy to transactional services as well as the electronic means of engaging citizens in public consultation and decision-making.

To better reflect the higher expectations of e-government development around the world, the United Nations Department of Economic and Social Affairs introduced significant changes to the survey instrument in this round, focusing more on how governments are using websites and Web portals to deliver public services and expand opportunities for citizens to participate in decision-making. The number of questions increased from 86 in 2008 to 95 in 2010. More specifically, twenty-five questions were added and 16 questions removed from the questionnaire in the 2010 survey round, while 29 questions were modified.

Table 4.1 Top 20 countries in e-government development

Rank	Country	E-government development index value	Rank	Country	E-government development index value
1	Republic of Korea	0.8785	11	Singapore	0.7476
2	United States	0.8510	12	Sweden	0.7474
3	Canada	0.8448	13	Bahrain	0.7363
4	United Kingdom	0.8147	14	New Zealand	0.7311
5	Netherlands	0.8097	15	Germany	0.7309
6	Norway	0.8020	16	Belgium	0.7225
7	Denmark	0.7872	17	Japan	0.7152
8	Australia	0.7863	18	Switzerland	0.7136
9	Spain	0.7516	19	Finland	0.6967
10	France	0.7510	20	Estonia	0.6965

As a result of these changes, the world average of the e-government development index registered a slight decline compared to previous years. Nevertheless, the decline should not be interpreted as the degeneration of e-government on a global scale since the index measures e-government development of countries relative to one another within a given year. More importantly, a drop in a country's ranking may serve as a reminder of the need to devote greater resources to improving online services and expanding access to telecommunication infrastructure.

Box 4.1 United States Social Security Administration leads in customer satisfaction

United States: Social Security Administration

According to the American Customer Satisfaction Index for the 3rd quarter of 2009, the Social Security Administration (SSA) is the top government portal in terms of citizen satisfaction. Citizens have rated the SSA's Retirement Estimator and the IClaim as the two highest e-government services with a score of 91 and 90 respectively.

The Customer Satisfaction Index looks at functionality, navigation, look and feel, site performance and content to determine the level of customer satisfaction. The SSA portal receives a high number of repeat customers and has become one of the primary resources for information on social services in the United States. The SSA portal has continued to make improvements to respond to customers' needs, which has led to an increase in loyalty and cost savings.



http://www.ssa.gov

4.1 Global e-government development

High-income countries enjoy the top rankings in the e-government development index in 2010 as in previous years. Among the top five countries in the 2010 United Nations E-Government Survey, the Republic of Korea received the highest score (0.8785), followed by the United States (0.8510), Canada (0.8448), the United Kingdom (0.8147) and the Netherlands (0.8097).

Figure 4.1 shows that Europe (0.6227) and the Americas (0.4790) score above the world average (0.4406). Asia (0.4424) is almost the same as the world average. Africa (0.2733) and Oceania (0.4193) score below the world average.

The majority of positions in the top 20 rankings belong to high-income countries, which is not surprising since they have the financial resources to develop and rollout advanced e-government initiatives, as well as to create a favorable environment for citizen engagement and empowerment. Developed countries have a distinct advantage in achieving higher rankings in the survey, as nearly two-thirds of the weight of e-government development index is allocated to the telecommunication infrastructure and human capital components, which both require long-term investment. For emerging and developing countries, the challenge is to invest in all three dimensions – online services, telecommunication infrastructure and education – to narrow the current digital gap. In other words, having a great website does little in e-service provision if the majority of people in the country cannot read or write, nor if they have no access to the Internet.

Box 4.2 Bahrain embraces Web 2.0

Bahrain: Web 2.0

Bahrain's e-government programme has been innovative when it comes to customer's centrality. Citizen involvement has been ensured right from the strategy formulation and continuous feedback has been obtained during implementation. In continuation to this philosophy, the Bahrain e-government program has embraced the Web 2.0 to reach its customers. Ministers and senior government officials have established an open-door policy to interact with citizens. The e-government program has its presence on social networking sites such as Facebook and YouTube. In addition, the national portal and ministry websites provide features such as open forums, blogs, live chats, online polls, e-newsletters and other interactive services that involve citizens in government decision making. For instance, two of the ministers and the CEO of the e-Government Authority have interacted with citizens through such blogs.

Citizens' participation and constructive feedback was recognized and implemented by changing the national portal and reprioritizing its objectives, thereby achieving 85 % of customer satisfaction on the e-government programme as per the May 2009 Survey.



http://www.bahrain.bh/

What is noteworthy is that some developing countries have begun to catch up with higher-income countries despite these challenges. Bahrain (0.7363), for example, has made significant strides in the two years since the previous survey, moving up in the rankings to 13th place in 2010 from 42nd place in 2008. Bahrain's recent emphasis on citizen engagement and the electronic provision of government services has propelled the country into the top 15 in e-government development, somewhat closer to Singapore (0.7476) which is among the global leaders in provision of electronic and mobile public services.

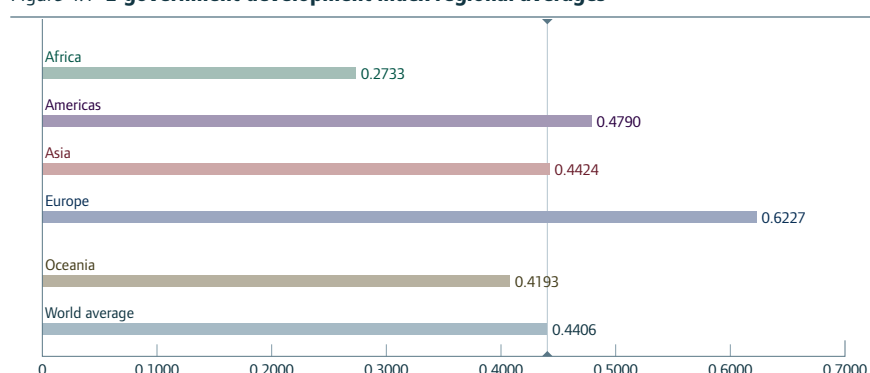
Mobile technology will become an affordable tool to fill in the digital gap between developed and developing countries, given the rapid price decline of mobile products. Emerging and least developed countries have already demonstrated that they are capable of narrowing the digital gap by investing in websites and Web portals and by applying tools such as telecentres, kiosks, community centres and other similar outlets to increase access to the Internet. They are adopting the use of mobile technology at a fast rate, which will trigger the need to develop more mobile e-government services. The private sector in these countries has an opportunity to work with government to create and distribute mobile services. The 2010 survey recorded an increase in the use of mobile technology for communication from governments to citizens, whether it is simple SMS, alert notification or a full-fledged mobile service.

In general, Member States are channelling more human and financial resources to fulfill the ever-increasing digital needs.

The 2010 survey found that some countries are increasingly active in seeking customer satisfaction through online polls, blogs, surveys and other means. This indicates that a growing number of countries have recognized the importance of citizen feedback via Internet and are taking advantage of social networking tools to create better websites and Web portals.

Though emerging and developing countries have yet to fill the digital gap, table 4.1 shows that those developing countries that have channeled more investment to telecommunications infrastructure, education and online services could compete with developed countries and, in some cases, even score higher.

Figure 4.1 **E-government development index regional averages**



4.2 Regional comparisons

On a regional basis, Europe receives the highest score, followed by the Americas. These are the only two regions above the world average. Africa continues to lag far below the world average, given that most of the world's least developed countries are in this region and they generally lack the financial and human resources to fully implement e-government. The Asian region is slightly above the world average, but the Republic of Korea is the exception, as it stands at the top of 2010 rankings in the e-government development index.

4.2.1 E-government in Africa

Figure 4.2 indicates that all sub-regions in Africa fall below the world average. However, there has been some improvement in the region, especially in Middle, Northern and Western Africa since the 2008 survey. Northern Africa leads the region and is closely followed by the Southern Africa. Western Africa lags far behind the other sub-regions and is the lowest scoring sub-region in the 2010 Survey.

Table 4.3 shows that Tunisia leads Africa in e-government development, followed by Mauritius and Egypt. It also shows that the majority of countries in the 'top ten' rankings are developing countries from Northern and Southern Africa.

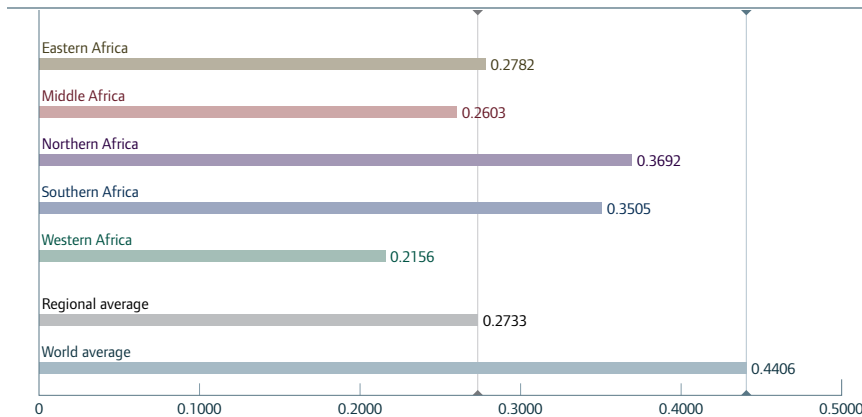
Eastern Africa

Mauritius (0.4645) and the Seychelles (0.4179) continue to lead the region, though both countries register lower rankings in the 2010 Survey. Mauritius dropped by 14 positions and the

Table 4.2 **Regional comparisons**

Region	E-government development index value	
	2010	2008
Africa	0.2733	0.2739
Eastern Africa	0.2782	0.2879
Middle Africa	0.2603	0.2530
Northern Africa	0.3692	0.3403
Southern Africa	0.3505	0.3893
Western Africa	0.2156	0.2110
Americas	0.4790	0.4936
Caribbean	0.4454	0.4480
Central America	0.4295	0.4604
Northern America	0.8479	0.8408
South America	0.4869	0.5072
Asia	0.4424	0.4470
Central Asia	0.4239	0.3881
Eastern Asia	0.6470	0.6443
Southern Asia	0.3248	0.3395
South-Eastern Asia	0.4250	0.4290
Western Asia	0.4732	0.4857
Europe	0.6227	0.6490
Eastern Europe	0.5449	0.5689
Northern Europe	0.7113	0.7721
Southern Europe	0.5566	0.5648
Western Europe	0.7165	0.7329
Oceania	0.4193	0.4338
World average	0.4406	0.4514

Figure 4.2 E-government development in Africa



Map 4.1 Sub-regions of Africa

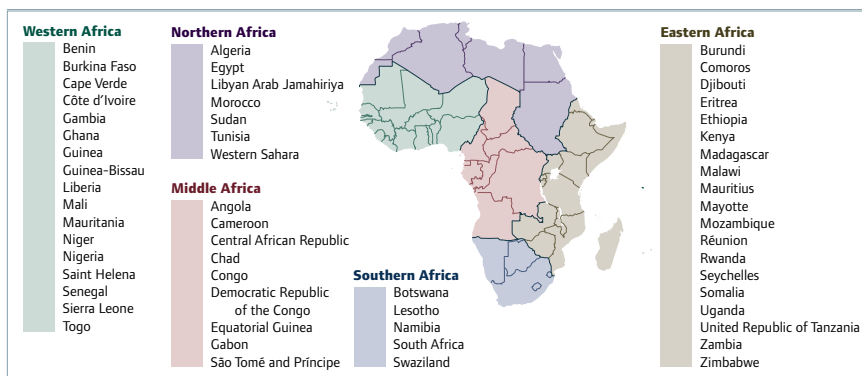


Table 4.3 Top ranked countries in Africa

Rank	Country	E-government development index value		World e-government development ranking	
		2010	2008	2010	2008
1	Tunisia	0.4826	0.3458	66	124
2	Mauritius	0.4645	0.5086	77	63
3	Egypt	0.4518	0.4767	86	79
4	South Africa	0.4306	0.5115	97	61
5	Seychelles	0.4179	0.4942	104	69
6	Cape Verde	0.4054	0.4158	108	104
7	Libya	0.3799	0.3546	114	120
8	Botswana	0.3637	0.3647	117	118
9	Lesotho	0.3512	0.3805	121	114
10	Gabon	0.3420	0.3228	123	129
	World average	0.4406	0.4514		

Seychelles dropped by 35 positions. Seychelles has the best infrastructure and education indices, which explains its high ranking in the region.

Zambia (0.2810) and Zimbabwe (0.3230) both improved in e-government development. Zambia jumped 15 positions to stand at 143rd in the 2010 Survey ranking and Zimbabwe jumped 12 positions to rank the 129th.

Table 4.4 E-government development in Eastern Africa

Country	E-government development index value		World e-government development ranking	
	2010	2008	2010	2008
Mauritius	0.4645	0.5086	77	63
Seychelles	0.4179	0.4942	104	69
Kenya	0.3338	0.3474	124	122
Zimbabwe	0.3230	0.3000	129	137
United Republic of Tanzania	0.2926	0.2929	137	143
Madagascar	0.2890	0.3065	139	135
Uganda	0.2812	0.3133	142	133
Zambia	0.2810	0.2266	143	158
Rwanda	0.2749	0.2941	148	141
Malawi	0.2357	0.2878	159	146
Comoros	0.2327	0.1896	160	170
Mozambique	0.2288	0.2559	161	152
Djibouti	0.2059	0.2279	170	157
Ethiopia	0.2033	0.1857	172	172
Burundi	0.2014	0.1788	174	174
Eritrea	0.1859	0.1965	175	169
Somalia	...	...	...	...
Sub-regional average	0.2782	0.2879		
World average	0.4406	0.4514		

Notwithstanding the overall low scores of the e-government development index in the region, some countries have managed to improve their Web presence either in national portals or ministry websites.

Kenya's national portal received the highest score in the region, followed by Mauritius and Madagascar. Ethiopia registered the third highest online service score in the region, whilst its infrastructure and education indices hindered it from scoring higher in the e-government development index.

The websites of most ministries in the region provide basic information, but e-services are generally not available. The Ministry of Education of Mauritius scored the highest among ministries in the region.

Middle Africa

The majority of countries in Middle Africa generally scored higher in the 2010 Survey and improved their respective rankings.

Gabon (0.3420) leads the sub-region in the 2010 Survey and has moved up six positions compared to the 2008 Survey. This should be attributed to Gabon's edge in infrastructure and education indices. São Tomé and Príncipe (0.3258) stands at the second position in the ranking, followed by Angola (0.3110) and Congo (0.3019).

Table 4.5 E-government development in Middle Africa

Country	E-government development index value		World e-government development ranking	
	2010	2008	2010	2008
Gabon	0.3420	0.3228	123	129
São Tomé and Príncipe	0.3258	0.3215	128	130
Angola	0.3110	0.3328	132	127
Congo	0.3019	0.2737	135	148
Equatorial Guinea	0.2902	0.2890	138	145
Cameroon	0.2722	0.2734	149	149
Democratic Republic of the Congo	0.2357	0.2177	158	162
Central African Republic	0.1399	0.1412	181	179
Chad	0.1235	0.1047	182	182
Sub-regional average	0.2603	0.2530		
World average	0.4406	0.4514		

In the area of 'online service assessment', Cameroon's ministries of health and education enjoyed the highest scores among all ministries in the region. These ministries were the only ones in the region to benefit from some degree of citizen involvement.

Northern Africa

The region as a whole performed better in the 2010 Survey. Tunisia (0.4826) received the highest score in the region, followed by Egypt (0.4518), Libya (0.3799) and Morocco (0.3287). Tunisia's Ministry of Finance provides a number of e-services and a wealth of information and scored the highest among all ministries in the region. In addition, each ministry's websites in Tunisia (health, education, labour and social services) all receive the highest scores in the region in its respective category.

Egypt stands the second in the regional ranking, but its national portal enjoys the highest ranking in the region. Egypt and Algeria both regressed

Box 4.3 AfriAfya, Kenya

Kenya: AfriAfya

AfriAfya, the African Network for Health Knowledge Management and Communication is comprised of seven of the largest health NGOs in Kenya with the goal of harnessing ICTs to improve community health in rural and other marginalized Kenyan communities. The network provides communities with relevant up-to-date health information through a two-way communication with health-care providers.



<http://www.afriafya.org/>

Box 4.4 Cyber Ethiopia

Ethiopia: Cyber Ethiopia

The Amharic language has Africa's oldest script, which has been used for written communication since 100 B.C. The CyberEthiopia initiative has converted the Amharic script so that it is Web-friendly, responding to the challenge of digital multilingualism and the development of the local script for digital use. The use of the Amharic script on the Internet facilitates Ethiopia's digital inclusion and full participation in the information society.



<http://www.cyberethiopia.com>

in the 2010 Survey, falling to the 86th and 131st positions respectively. Morocco has jumped 14 positions to a global rank of 126th. Libya and Sudan have improved their rankings as well since the 2008 Survey.

Libya continues to lead in the human capacity index, followed by Tunisia and Algeria. The telecommunication infrastructure in the region remains low compared to other regions, with Tunisia having the highest infrastructure index. Morocco leads the region with the highest ratio of Internet users per 100 inhabitants.

Table 4.6 E-government development in Northern Africa

Country	E-government development index value		World e-government development ranking	
	2010	2008	2010	2008
Tunisia	0.4826	0.3458	66	124
Egypt	0.4518	0.4767	86	79
Libya	0.3799	0.3546	114	120
Morocco	0.3287	0.2944	126	140
Algeria	0.3181	0.3515	131	121
Sudan	0.2542	0.2186	154	161
Sub-regional average	0.3692	0.3403		
World average	0.4406	0.4514		

Box 4.5 **Algeria alerts citizens to their new national hotline for H1N1**

Algeria: H1N1 National Hotline

On the national portal of Algeria <http://www.ands.dz/> there is a link titled "Alerte Grippe Porcine", for the H1N1 flu. The feature takes the user to a portal page with a specific section for health care professionals along with resources for citizens with links to information and medical resources, a new telephone hot line number, audios from radio spots sharing information on symptoms to watch for and hygiene protocol, and weekly health newsletters have been archived.



<http://www.ands.dz/>

Southern Africa

All the countries in Southern Africa scored lower in the 2010 Survey than they did two years ago. South Africa (0.4306) continues to lead the region, but it also witnessed the most dramatic drop in rank, to 97th in the 2010 Survey. Botswana, Lesotho and Namibia have maintained the similar e-government rankings in 2010 Survey as compared to the 2008 Survey. Swaziland did not receive any scores in the online service index because none of its websites could be opened during the review period.

The Western Africa region is the lowest ranking region in the 2010 Survey, showing virtually no improvement since the 2008 Survey. This should be mainly attributed to poor telecommunications infrastructure and low human capacity in the region. Broadband access is practically non-existent in the region, and the best case is Cape Verde with only 1.48 subscribers per 100 inhabitants.

Table 4.7 **E-government development in Southern Africa**

Country	E-government development index value		World e-government development ranking	
	2010	2008	2010	2008
South Africa	0.4306	0.5115	97	61
Botswana	0.3637	0.3647	117	118
Lesotho	0.3512	0.3805	121	114
Namibia	0.3314	0.3445	125	126
Swaziland	0.2757	0.3454	145	125
Sub-regional average	0.3505	0.3893		
World average	0.4406	0.4514		

Cape Verde (0.4054) leads the regions thanks to its higher telecommunication infrastructure and human capacity components, followed by Côte d'Ivoire (0.2805) and Ghana (0.2754).

Côte d'Ivoire enjoys the highest online service score followed by Cape Verde, Mali, Senegal and Burkina Faso. Côte d'Ivoire also experienced the most significant change in rankings as compared to the 2008 Survey, gaining 29 positions to rank 144th globally. Côte d'Ivoire barely had a Web presence in 2008 but the current survey finds that the national and ministry websites are much more robust and offer a wealth of information. Mauritania also improved its ranking by 9 positions from the 2008 Survey to rank 157th globally. Other countries remained essentially unchanged in global rankings.

Western Africa

Table 4.8 **E-government development in Western Africa**

Country	E-government development index value		World e-government development ranking	
	2010	2008	2010	2008
Cape Verde	0.4054	0.4158	108	104
Côte d'Ivoire	0.2805	0.1853	144	173
Ghana	0.2754	0.2997	147	138
Nigeria	0.2687	0.3063	150	136
Mauritania	0.2359	0.2028	157	168
Senegal	0.2241	0.2531	163	153
Togo	0.2150	0.2191	165	160
Liberia	0.2133	0.2170	166	163
Gambia	0.2117	0.2253	167	159
Benin	0.2017	0.1860	173	171
Mali	0.1815	0.1591	176	175
Sierra Leone	0.1697	0.1463	177	178
Burkina Faso	0.1587	0.1542	178	176
Guinea-Bissau	0.1561	0.1521	179	177
Guinea	0.1426	0.1402	180	180
Niger	0.1098	0.1142	183	181
Sub-regional average	0.2156	0.2110		
World average	0.4406	0.4514		

Any substantive progress in e-government development in the region is likely to be a long way off, given its poor telecommunication infrastructure, low human resources capacity and the amount of investment required – which far exceeds the financial capacity of the region. Despite limited resources, a few countries managed to improve their e-government. The national website of Benin features podcasting and online forums with a dozen thematic areas for its citizen's participation. Ghana's national website utilizes a 'social media' box featuring tools such as YouTube and containing direct links to the Facebook accounts of government officials in the Ministry of Information.

4.2.2 E-government in the Americas

Figure 4.3 illustrates that the status of e-government development in Northern America, which is far ahead of other regions. The region's two countries, the United States and Canada, enjoy the second and third global ranking respectively in the 2010 Survey. Central America is the only region in the Americas that registered a regional average below that of the world average, though many developing countries in this region scored above the world average.

Among the top 10 countries in the Americas, five countries are from South America, three are from the Caribbean, and one is from Central America.

Caribbean

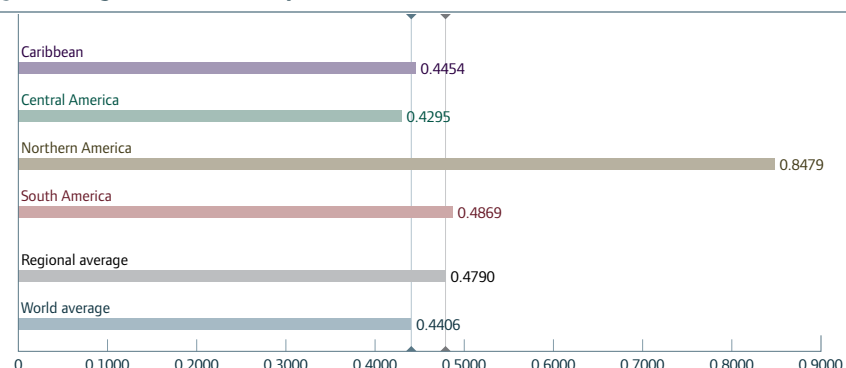
In the 2010 Survey, the Caribbean region witnessed some improvement and consequently elevated its score above the world average. In the 2008 Survey, its e-government development index was slightly below the world average.

Table 4.10 E-government development in the Caribbean

Country	E-government development index value		World e-government development ranking	
	2010	2008	2010	2008
Barbados	0.5714	0.5667	40	46
Antigua and Barbuda	0.5154	0.4485	55	96
Bahamas	0.4871	0.4911	65	71
Trinidad and Tobago	0.4806	0.5307	67	54
Saint Kitts and Nevis	0.4691	0.4814	75	78
Dominican Republic	0.4557	0.4943	84	68
Saint Lucia	0.4471	0.4746	88	80
Jamaica	0.4467	0.4679	89	85
Saint Vincent and the Grenadines	0.4355	0.4306	94	98
Cuba	0.4321	0.3990	96	111
Grenada	0.4277	0.4545	99	92
Dominica	0.4149	0.3746	105	116
Haiti	0.2074	0.2097	169	165
Sub-regional average	0.4454	0.4480		
World average	0.4406	0.4514		

Barbados (0.5714) continues to lead the region thanks to its better telecommunication infrastructure and higher adult literacy and gross enrolment, followed by Antigua and Barbuda (0.5154) and the Bahamas (0.4871). Barbados leads the Caribbean in both Internet users and broadband subscribers per 100 inhabitants. This advantage allowed Barbados to maintain its e-government edge despite the fact that other countries scored more highly in online services.

Figure 4.3 E-government development in the Americas



Map 4.2 Sub-regions of the Americas

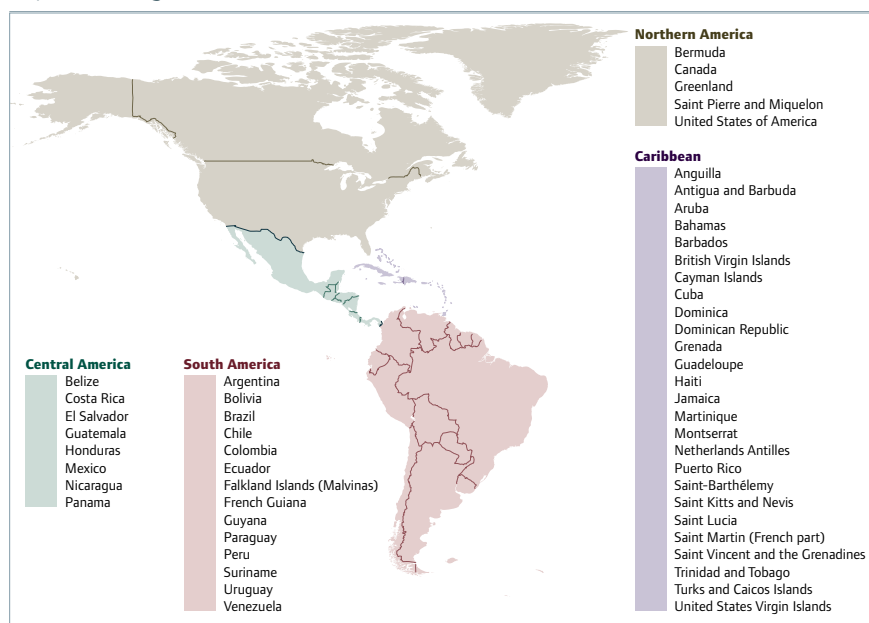


Table 4.9 Top ranked countries in the Americas

Rank	Country	E-government development index value		World e-government development ranking	
		2010	2008	2010	2008
1	United States	0.8510	0.8644	2	4
2	Canada	0.8448	0.8172	3	7
3	Colombia	0.6125	0.5317	31	52
4	Chile	0.6014	0.5819	34	40
5	Uruguay	0.5848	0.5645	36	48
6	Barbados	0.5714	0.5667	40	46
7	Argentina	0.5467	0.5844	48	39
8	Antigua and Barbuda	0.5154	0.4485	55	96
9	Mexico	0.5150	0.5893	56	37
10	Brazil	0.5006	0.5679	61	45
	World average	0.4406	0.4514		

Barbados is the first country in the region to have an integrated single-sign-on service for its national portal. Single-sign-on services allow citizens greater ease and flexibility in performing necessary online tasks with the government.

Antigua and Barbuda saw the biggest increase in the global ranking by 41 positions to rank 55th globally. Cuba and Dominica also had their rankings increase significantly over the 2008 Survey by 15 and 11 positions respectively. Cuba is now ranked 96th and Dominica 105th globally.

The Dominican Republic, Trinidad and Tobago and Cuba led the region in the area of online services. Top scores in ministry sites were received by Education and Labour in the Dominican Republic along with the Ministry of Health in Cuba.

The Dominican Republic's Ministry of Labour offers key user services to citizens, including Emplateya.net, an employment seeking portal with polls and online form submissions and a related website, FlujoMigratorio, for tracking emigration and employment in Spain.

The national portal for Grenada integrates great design with social media elements that enable its citizens, especially youth, to share information on social networking platforms with the government.

The Ministry of Finance of Trinidad and Tobago has implemented a Web-based procurement tool, Finance.gov.tt, that allows suppliers to bid online for contracts to supply of goods or services.

Central America

The region of Central America has regressed in relative terms since the 2008 Survey, when it scored higher above the world average. In the 2010 Survey, its e-government scoring falls below the world average. The vast majority of countries in the region received lower scores in the 2010 Survey as compared to the 2008 Survey. Mexico (0.5150) leads the region followed by Costa Rica (0.4749) and El Salvador (0.4700).

Mexico experienced the most significant drop in global rankings. It fell by 19 positions from the 2008 Survey to the 2010 Survey and is currently ranked 56th globally. The degeneration of Mexico's e-government is mainly attributed to the much lower score for online services, which dropped from 0.7057 to 0.4413. The following countries

also saw significant drops, with Costa Rica down by 12 positions, Guatemala by 13 positions and Belize by 13 positions.

Table 4.11 E-government development in Central America

Country	E-government development index value		World e-government development ranking	
	2010	2008	2010	2008
Mexico	0.5150	0.5893	56	37
Costa Rica	0.4749	0.5144	71	59
El Salvador	0.4700	0.4974	73	67
Panama	0.4619	0.4718	79	83
Honduras	0.4065	0.4048	107	110
Guatemala	0.3937	0.4283	112	99
Nicaragua	0.3630	0.3668	118	117
Belize	0.3513	0.4102	120	107
Sub-regional average	0.4295	0.4604		
World average	0.4406	0.4514		

Northern America

The United States and Canada continue to score high in the 2010 Survey. The United States (0.8510) was ranked the second and Canada (0.8448) was ranked the third globally. The United States and Canada were also ranked the second and the third respectively in the online service index. Both countries have well-developed portals with a wide spectrum of e-services for their citizens. They have both created a favorable environment to encourage citizens to participate in decision-making around political issues and to provide feedback.

Table 4.12 E-government development in Northern America

Country	E-government development index value		World e-government development ranking	
	2010	2008	2010	2008
United States	0.8510	0.8644	2	4
Canada	0.8448	0.8172	3	7
Sub-regional average	0.8479	0.8408		
World average	0.4406	0.4514		

Canada has a strong online presence with a national portal that offers quick access to government programmes and information on popular services. It links to Service Canada, a robust e-services portal for citizens, Canada Business for entrepreneurs and Canada International for Canadians living abroad. The national portal also has a 'My Government Account' feature that provides a

single point of access for a citizen to manage a personalized set of links to the information and services offered by the Government of Canada. A mobile wireless portal is being developed to provide news, directories and other information.

The national portal of the United States is a leader in e-government. The USA.gov homepage links to more than 100 online government services and transactions. A navigational tool bar organizes information in categories for citizens, business and non-profit organizations, government employees, and visitors to the country. It then breaks these categories down even further so users can quickly locate the information and services. In addition, the national portal also offers its general information in 88 languages with extensive online services for foreigners wishing to conduct business, work, study and travel in the United States. It also includes live personal assistance via 'Live Help/Web Chat'. The site also makes it very easy to connect and communicate with the government via social media tools such as YouTube, Twitter, Facebook and the 'Gov Gab Blog', where bloggers share tips and information from the Federal government and where citizens can comment and share their own experiences.

In response to the global economic crisis, the national portal also provides a link to Recovery.gov, which offers information and data on the current economic crisis, tracking of the recovery funding, and how citizens can benefit from it.

South America

Colombia (0.6125) enjoys the highest global ranking in the region in the 2010 Survey, climbing by 21 positions from the 2008 Survey. It ranked higher than Chile, Argentina, Brazil and Uruguay. Chile (0.6014) and Uruguay (0.5848) stand second and third in the region.

The national portal of Colombia features a variety of online services, especially with the procedures and services section, which allows citizens to search by department or region. The site also provides a link to Programa Gobierno en Linea, a comprehensive and user-friendly information resource about e-government activities that is easy to navigate. Colombia's national website also features e-Ciudadano, an initiative on digital literacy through which citizens can take courses and become certified.

Box 4.6 Panama's Primera Dama

Panama: The First Lady's website Primera Dama

The First Lady's website Primera Dama is making a considerable effort to support the poor and women. Her site can be browsed by a direct link from the national website and has a national campaign of 'No Violence Against Women'. In conjunction with the Ministry of Agricultural Development, a micro-credit initiative was implemented to support rural and indigenous women. The initiative, which is promoted on the First Lady's website, is geared to improving the economic activity in the community that is dedicated to domestic activities and production for food consumption.



<http://www.presidencia.gob.pa>

Box 4.7 Guatemala e-procurement

Guatemala: E-procurement Website

Guatemala has well-organized e-procurement website linked directly from the national website as well as from most of the ministry websites. It provides information about the contracts and procurement system of the state, with comprehensive e-government features and services including registration with authentication and viewing of contracts awarded. It lists all opportunities for suppliers and products for buyers.



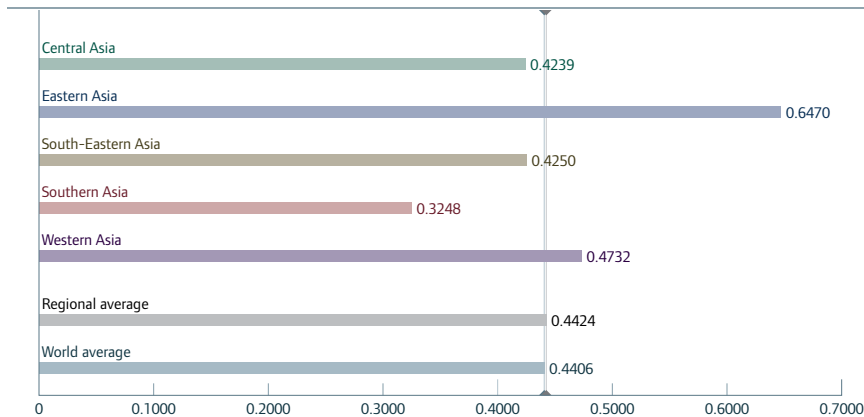
<http://www.guatecompras.gt/>

The website of the Ministry of Labour of Peru was the only ministry site in the region to offer a page, Revalora Perú, dedicated to unemployment in light of the global economic crisis. It explains the government's response and features a special programme on labour restructuring and government stimulus activities.

Table 4.13 E-government development in South America

Country	E-government development index value		World e-government development ranking	
	2010	2008	2010	2008
Colombia	0.6125	0.5317	31	52
Chile	0.6014	0.5819	34	40
Uruguay	0.5848	0.5645	36	48
Argentina	0.5467	0.5844	48	39
Brazil	0.5006	0.5679	61	45
Peru	0.4923	0.5252	63	55
Venezuela	0.4774	0.5095	70	62
Ecuador	0.4322	0.4840	95	75
Bolivia	0.4280	0.4867	98	72
Paraguay	0.4243	0.4654	101	88
Guyana	0.4140	0.4375	106	97
Suriname	0.3283	0.3472	127	123
Sub-regional average	0.4869	0.5072		
World average	0.4406	0.4514		

Figure 4.4 E-government development in Asia



Map 4.3 Sub-regions of Asia

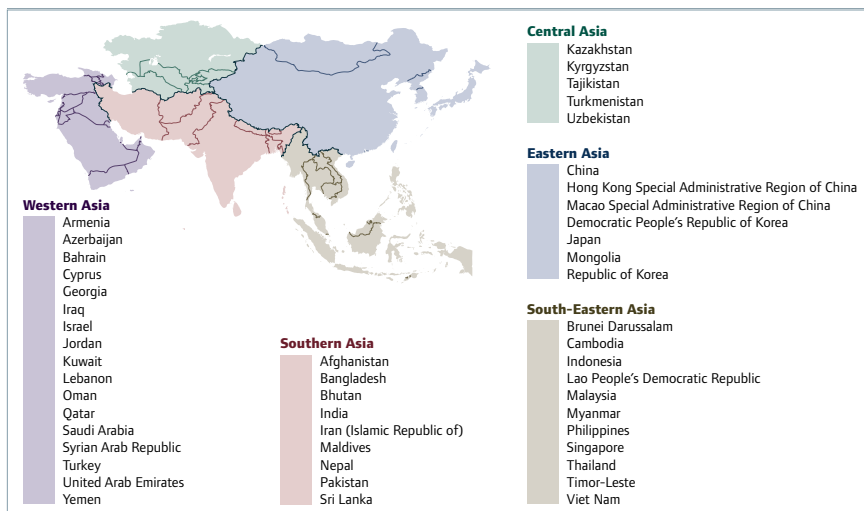


Table 4.14 Top ranked countries in Asia

Rank	Country	E-government development index value		World e-government development ranking	
		2010	2008	2010	2008
1	Republic of Korea	0.8785	0.8317	1	6
2	Singapore	0.7476	0.7009	11	23
3	Bahrain	0.7363	0.5723	13	42
4	Japan	0.7152	0.7703	17	11
5	Israel	0.6552	0.7393	26	17
6	Malaysia	0.6101	0.6063	32	34
7	Cyprus	0.5705	0.6019	42	35
8	Kazakhstan	0.5578	0.4743	46	81
9	United Arab Emirates	0.5349	0.6301	49	32
10	Kuwait	0.5290	0.5202	50	57
	World average	0.4406	0.4514		

Uruguay offers customized online services through Mi Portal, a prominent link on the home page of the national website. Mi Portal offers strong online features organized by thematic areas for citizens, business and government.

Argentina's Ministry of Health provides an official page on the H1N1 flu virus with downloadable videos, informational pamphlets and links to virtual libraries. Argentina's Ministry of Labour dedicates sections of its homepage to special topics such as child labour, women in the workplace and war veterans.

Bolivia's Ministry of Health and Sports (Social Welfare) offers a one-stop portal at Promocion de la Salud that covers special topics ranging from gender violence to environmental health to disability.

4.2.3 E-government in Asia

The Asian region presents a mixed picture with Eastern Asia far exceeding the world average for e-government development while Southern Asia lags far behind, as illustrated in figure 4.4. This dichotomy also mirrors the income disparities between the two regions. Central and South-Eastern Asia are slightly lower than the world average, while Western Asia is above the world average.

Table 4.14 shows that the Republic of Korea, Singapore and Bahrain enjoy the top three rankings in the region. Five countries from Western Asia made the top 10 in the region. Eastern Asia and South-East Asia, each had two countries in the top 10, while Central Asia had one country in the top 10.

Central Asia

Table 4.15 E-government development in Central Asia

Country	E-government development index value		World e-government development ranking	
	2010	2008	2010	2008
Kazakhstan	0.5578	0.4743	46	81
Uzbekistan	0.4498	0.4057	87	109
Kyrgyzstan	0.4417	0.4195	91	102
Tajikistan	0.3477	0.3150	122	132
Turkmenistan	0.3226	0.3262	130	128
Sub-regional average	0.4239	0.3881		
World average	0.4406	0.4514		

Central Asia has made the most significant improvement as a region from the 2008 Survey, with Kazakhstan (0.5578) making one of the most dramatic leaps in the 2010 Survey to continue

to lead the region. Uzbekistan, Kyrgyzstan and Tajikistan have all improved their national and ministry websites.

Among national portals, Kyrgyzstan received the highest ranking in the region. The national portal includes transactional aspects and was strong on citizen engagement.

Eastern Asia

The Republic of Korea (0.8785) was the highest ranking country in the 2010 Survey and its national portal also received the highest ranking. It scored particularly high in providing e-services and tools for citizen engagement. The ministries of health, education and social welfare scored the highest among ministries.

Table 4.16 E-government development in Eastern Asia

Country	E-government development index value		World e-government development ranking	
	2010	2008	2010	2008
Republic of Korea	0.8785	0.8317	1	6
Japan	0.7152	0.7703	17	11
Mongolia	0.5243	0.4735	53	82
China	0.4700	0.5017	72	65
Democratic People's Republic of Korea	...	...	...	...
Sub-regional average	0.6470	0.6443		
World average	0.4406	0.4514		

Japan (0.7152) ranked second in the region in the 2010 Survey, dropping down one place from the previous survey. Mongolia (0.5243) gained 29 positions to be ranked 53rd globally, a dramatic rise due primarily by efforts to enhance its national portal and ministry websites to offer more e-services available and more on-line content.

China fell slightly in the 2010 Survey and the Democratic People's Republic of Korea has a very limited Web presence as in the 2008 Survey.

The national portal of Japan was ranked the second highest in Asia. The portal is rich in e-information and content and provides extensive links to ministries and key government resources.

The Ministry of Finance of Mongolia scored the highest in the region for its category. Its portal provides comprehensive e-services and opportunities for citizens to provide feedback.

The Ministry of Finance of Mongolia provides a portal for e-procurement where users can register for online bids, sort through different types of tenders, see upcoming tenders, and find out results of previous tenders. E-Procurement is available in the Mongolian and English languages. There is a newsletter and additional information regarding legislation, bidding and guidelines.

Southern Asia

Table 4.17 E-government development in Southern Asia

Country	E-government development index value		World e-government development ranking	
	2010	2008	2010	2008
Maldives	0.4392	0.4491	92	95
Iran (Islamic Rep. of)	0.4234	0.4067	102	108
Sri Lanka	0.3995	0.4244	111	101
India	0.3567	0.3814	119	113
Bangladesh	0.3028	0.2936	134	142
Pakistan	0.2755	0.3160	146	131
Bhutan	0.2598	0.3074	152	134
Nepal	0.2568	0.2725	153	150
Afghanistan	0.2098	0.2048	168	167
Sub-regional average	0.3248	0.3395		
World average	0.4406	0.4514		

In this region, most portals and websites have remained stagnant since the 2008 Survey in terms of developing new features. As a result, the region as a whole has regressed in the 2010 Survey and remains far below the world average. Maldives (0.4392) continues to lead the region because it gained the highest scores for infrastructure and education indices. Nevertheless, its online services received very low scores and made very limited progress in overall e-government development. Iran (0.4234) and Bangladesh (0.3028) are the two

Box 4.8 Kazakhstan – putting citizens first

Kazakhstan: User-friendly site

The national website of Kazakhstan is a user-friendly one-stop-shop that allows a one click access to E-Gov.kz, the country's e-government portal, which offers a comprehensive selection of e-services for citizens. The portal also provides information on the national e-government development programme with 17 different projects aimed at improving services to the citizen in a convenient (online) and cost-effective manner. E-services include e-payments, e-documents, e-registrations, e-signatures, e-forms, etc. The portal also contains videos and educational programmes for children, online discussions and consultations, and other citizen engagement tools. This distinctive approach is intended to enhance the role of the government and facilitate building citizens' trust in government authorities.



E-Gov.kz

Box 4.9 Japanese portal provides access to statistical information

Japan: Statistical information portals

Japan's E-Stat portal is directly accessible and prominently featured on the extensive national e-government portal. A user-friendly interface provides users with options to gain easy access to official Japanese statistics, learn about meta data, understand statistical systems and study statistics. There is also a search option to find further statistics by ministries and government agencies. Users can securely register to receive email updates on statistics and have the option to subscribe to RSS Feeds. A mobile version of the portal is also available.



<http://www.e-stat.go.jp/>
<http://www.e-gov.go.jp/>
<http://e-stat.go.jp/SG1/estat/mbTopE.do/>

Box 4.10 Republic of Korea's national portal

Republic of Korea: National portals

The Republic of Korea's national portal is exceptional in its design and provision of features to its citizens. It is an integrated system allowing citizens easy access to government information and contains features for mobile alerts, forms, transactions and online consultation. For e-participation, users are connected to ePeople, a single online service that integrates the e-services of all government agencies. The aim of ePeople is to improve the transparency of government administration, improve corruption reporting and engage citizens through petitions, proposals and policy discussions. Users are connected to a secure login portal for all e-government transactions and form submissions.



<http://www.korea.go.kr/>
<http://www.epeople.go.kr/>
<http://egov.go.kr/>

Box 4.11 Singapore spearheads development of mobile services

Singapore: Mobile government

Singapore's mobile cellular market is characterized by energy and innovation with some 6.5 million mobile devices in use for a penetration rate of 136 percent. Mobile service delivery is a strategic initiative of the country's iGov2010 master plan. Citizens and businesses have expressed a high level of satisfaction and enjoy the convenience of accessing more than 300 public services through mobile technology. The next wave of mobile services planned by the Singapore Infocomm Development Authority will support even more 24/7 transactions, including some that use near field technology to enable payment of train and bus fares, redemption of e-coupons, and even the opening of doors with the tap of a phone against a wireless reader. Commercial relationships between mobile cellular companies and network providers help ensure availability of the requisite technology.



<http://www.ecitizen.gov.sg/mobile/>

exceptions, both having significantly improved their government development scores and global rankings in 2010 Survey.

Among national portals in the region, India has the highest ranking portal with the highest online services score. It has the most e-services and tools for citizen engagement in the region.

South-Eastern Asia

The national portal of Singapore has an organized and effective online approach to providing information to its users through portals and micro-sites. Each main tab directs its site visitors to portals by user group. Businesses access EnterpriseOne, a portal with e-services and information tailored to businesses. Citizens and residents are directed to E-Citizen, an e-services portal that features the personalized single sign-on site SingPass for payment services and mobile services.

Table 4.18 E-government development in South-Eastern Asia

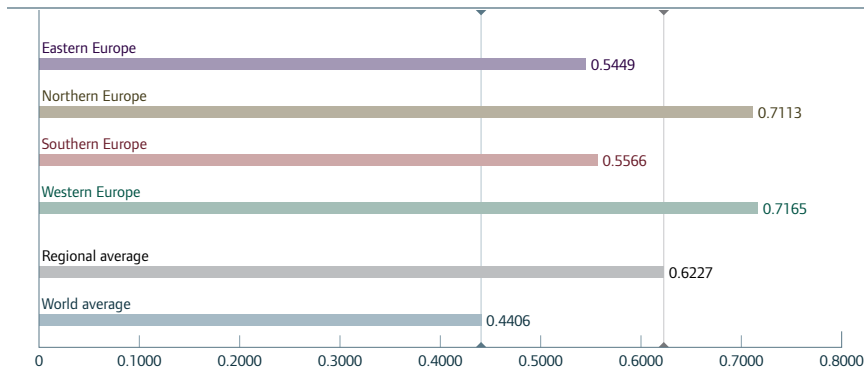
Country	E-government development index value		World e-government development ranking	
	2010	2008	2010	2008
Singapore	0.7476	0.7009	11	23
Malaysia	0.6101	0.6063	32	34
Brunei Darussalam	0.4796	0.4667	68	87
Thailand	0.4653	0.5031	76	64
Philippines	0.4637	0.5001	78	66
Viet Nam	0.4454	0.4558	90	91
Indonesia	0.4026	0.4107	109	106
Cambodia	0.2878	0.2989	140	139
Myanmar	0.2818	0.2922	141	144
Lao People's Democratic Republic	0.2637	0.2383	151	156
Timor-Leste	0.2273	0.2462	162	155
Sub-regional average	0.4250	0.4290		
World average	0.4406	0.4514		

Box 4.12 Malaysia – utilizing mobile technology

Malaysia: mySMS system

Malaysia's mySMS system won the 2009 AICTA award given to projects of creativity and excellence in ICT in Malaysia. The system enables users to receive information on demand, documents on demand, and broadcast information from government agencies, including emergency information to basic notifications. The system also allows users to provide complaints to government agencies.

Figure 4.5 E-government development in Europe



Map 4.4 Sub-regions of Europe

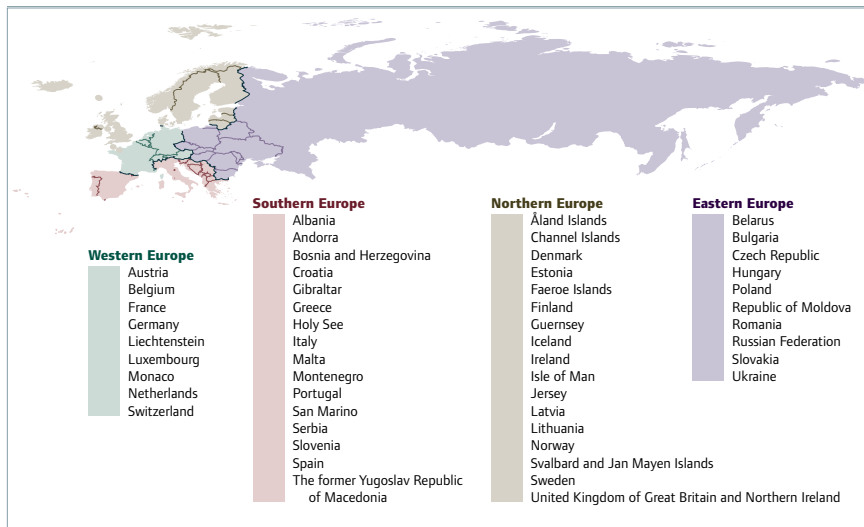


Table 4.20 shows that the United Kingdom emerged as the new leader in Europe in the 2010 Survey, followed by the Netherlands. In the top 10 list, Western Europe had five countries, Northern Europe had four countries, Southern Europe had one country and there were no countries from Eastern Europe.

Eastern Europe

The region as a whole has not changed much since the 2008 Survey. In the 2010 Survey, Hungary (0.6315) has moved ahead of the Czech Republic (0.6060) to lead the region. The national portal of Hungary was ranked the highest in the region. Poland and Ukraine moved down in the rankings. The Republic of Moldova (0.4611) moved up 13 positions to be ranked 80th globally.

Table 4.21 E-government development in Eastern Europe

Country	E-government development index value		World e-government development ranking	
	2010	2008	2010	2008
Hungary	0.6315	0.6494	27	30
Czech Republic	0.6060	0.6696	33	25
Slovakia	0.5639	0.5889	43	38
Bulgaria	0.5590	0.5719	44	43
Poland	0.5582	0.6134	45	33
Romania	0.5479	0.5383	47	51
Ukraine	0.5181	0.5728	54	41
Russian Federation	0.5136	0.5120	59	60
Belarus	0.4900	0.5213	64	56
Republic of Moldova	0.4611	0.4510	80	93
Sub-regional average	0.5449	0.5689		
World average	0.4406	0.4514		

The website of the Ministry of Finance of Ukraine scored the highest among ministries based on its content and citizen engagement, although e-services were limited. The Ministry of Finance of Romania also scored high for the region due to the availability of a number of e-services as well as extensive content.

Northern Europe

Table 4.22 E-government development in Northern Europe

Country	E-government development index value		World e-government development ranking	
	2010	2008	2010	2008
United Kingdom	0.8147	0.7872	4	10
Norway	0.8020	0.8921	6	3
Denmark	0.7872	0.9134	7	2
Sweden	0.7474	0.9157	12	1
Finland	0.6967	0.7488	19	15
Estonia	0.6965	0.7600	20	13
Ireland	0.6866	0.7296	21	19
Iceland	0.6697	0.7176	22	21
Lithuania	0.6295	0.6617	28	28
Latvia	0.5826	0.5944	37	36
Sub-regional average	0.7113	0.7721		
World average	0.4406	0.4514		

The United Kingdom (0.8147) enjoys the highest ranking in Europe. The national portal of the United Kingdom was ranked the third in the 2010 Survey. The Scandinavian countries as a whole scored lower. Sweden dropped from first position in the 2008 Survey to the 12th in global ranking in the 2010 Survey, which is mainly attributed to the regression of its online services.

With the exception of the United Kingdom, all the countries in the region had lower e-government indexes in the 2010 Survey.

The United Kingdom offers a comprehensive and user-friendly national portal. The home page features 16 categories of information most often accessed, e.g. Motoring, Parents, Environment & Greener Living, Disabled, Money, Tax & Benefits, Government & Citizens' Rights, Health & Wellbeing and Crime & Justice. A tab on the top navigation tool bar titled 'Do It Online' also links to the 16 categories, and specifically to all of the transactions that can be conducted online within these categories. Citizens can text in a key word and receive information via mobile phone on job opportunities, public transport delays, train schedules, nearest passport or doctors offices, emergency and terror alerts and many other services. The United Kingdom's Web network also features a wide range of public consultations, mostly available at specific ministry sites; model-practice portals for public tenders and contracts; and e-services at the Government Gateway.

The website of the Ministry of Finance of Norway was ranked highest among ministries in the region in the 2010 Survey.

Southern Europe

Table 4.23 E-government development in Southern Europe

Country	E-government development index value		World e-government development ranking	
	2010	2008	2010	2008
Spain	0.7516	0.7228	9	20
Slovenia	0.6243	0.6681	29	26
Malta	0.6129	0.6582	30	29
Croatia	0.5858	0.5650	35	47
Italy	0.5800	0.6680	38	27
Portugal	0.5787	0.6479	39	31
Greece	0.5708	0.5718	41	44
TFYR Macedonia	0.5261	0.4866	52	73
Andorra	0.5148	0.5175	57	58
Montenegro	0.5101	0.4282	60	100
Bosnia and Herzegovina	0.4698	0.4509	74	94
Serbia	0.4585	0.4828	81	77
Albania	0.4519	0.4670	85	86
San Marino	...	...	...	...
Sub-regional average	0.5566	0.5642		
World average	0.4406	0.4514		

Spain (0.7516) continues to lead the region and moved up in the global ranking in the 2010 Survey. Spain enjoys a well-developed online e-services portal, Red.es, with clear statements to citizens about its purpose and mission, plus services from its national portal. Slovenia (0.6243) and Malta (0.6129) were ranked the second and the third in the region. The former Yugoslav Republic of Macedonia, Montenegro, and Bosnia and Herzegovina improved the most in the region in the 2010 Survey,

Box 4.13 Belgium's electronic identification card

Belgium: My Belgium national portal

The national portal of Belgium has a link called My Belgium that is the single point of contact to government information and services. Over 9 million Belgians have eID cards that allow them to download authenticated certificates from their personal file from the MyBelgium portal.



<http://www.belgium.be>
<http://www.mybelgium.be>

Box 4.14 Austria – support for gender equality

Austria: Gender equality website

Austria has a website that supports gender equality. It provides information about current government initiatives such as 'Equal pay and revenue transparency for women' and the 'New Child' law. The website promotes a programme provides parents with additional income during the first 14 months of the child's life, supporting mothers, fathers and single parents during difficult economic times.



<http://www.frauen.bka.gv.at>

Box 4.15 Germany – applying e-government tools to educate children

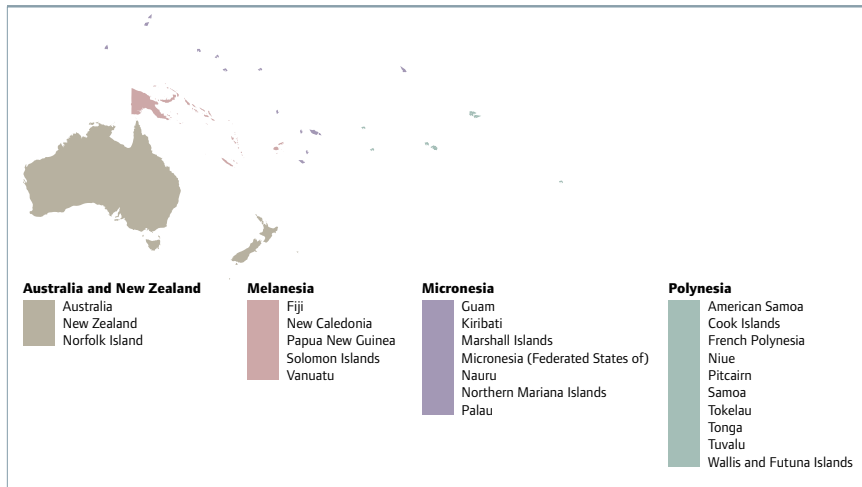
Germany: Gender equality website

The national portal of Germany has a link off the homepage to a website for children to learn how their government works, Regierenkapieren. It has tabs for interactive features titled such as 'discover', 'games' and 'questions' and a daily news section. It captures the children's attention and gives them a better understanding of the process of government.



<http://www.bundesregierung.de/>
<http://www.regierenkapieren.de/>

Map 4.5 Sub-regions of Oceania



with the former Yugoslav Republic of Macedonia gaining 21 positions to be ranked 52nd globally, Montenegro gaining 40 positions to be in 60th position and Bosnia and Herzegovina gaining 20 positions to be 74th. These changes were attributable to the improvement in telecommunication infrastructure and online services.

Western Europe

The Netherlands (0.8097) continues to lead the region in the global rankings of the 2010 Survey, with France (0.7510) and Germany (0.7309) ranked second and the third respectively. Liechtenstein saw the most significant progress and was ranked 23rd globally in the 2010 Survey, which could be attributed to its efforts to improve online services.

Table 4.24 E-government development in Western Europe

Country	E-government development index value		World e-government development ranking	
	2010	2008	2010	2008
Netherlands	0.8097	0.8631	5	5
France	0.7510	0.8038	10	9
Germany	0.7309	0.7136	15	22
Belgium	0.7225	0.6779	16	24
Switzerland	0.7136	0.7626	18	12
Liechtenstein	0.6694	0.5486	23	49
Austria	0.6679	0.7428	24	16
Luxembourg	0.6672	0.7512	25	14
Monaco	...	...	...	...
Sub-regional average	0.7165	0.7329		
World average	0.4406	0.4514		

The national portal of Portugal is informational and integrated and provides a clear gateway to services for citizens, including e-services. The site provides link to all ministries, including links to various services for citizens, such as Emprego 2009 for access to educational and professional resources.

Montenegro combined effective graphic design with efficient navigation for a visually related series of portals and websites, including those of the national government and all of its ministries. It worked well as a result of investment in back office integration. The various sites polling users about what they would like to see changed or improved on their government’s websites.

The Education Ministry of Serbia had one of the best online resources for students including information on student loans and scholarships, foreign government and foundations scholarships, international competitions, and Republic of Serbia Foundation Scholarships. Students can buy their books online and access their school records.

The website of the Ministry of Health of Belgium received the second highest ranking among that of the health ministries in the 2010 Survey based on the excellent provision of e-services to citizens. The country’s Ministry of Labour has a website with a notable usability/user experience. For example, when a user searches on its site, any results that are associated with an e-government feature or service will be marked with the letter ‘e’ in the form of a red icon next to the search results, cuing the user to click.

The national portal of the Netherlands offers a gateway to the municipalities of the Netherlands. It also harbors a substantive resource for elderly and disabled individuals wishing to locate online government services.

4.2.5 E-government in Oceania

Australia (0.7863) continues to lead the Oceania region with New Zealand (0.7311) in second position. Among the island states in the Pacific, Palau (0.4189) and Fiji (0.3925) are the leading countries in e-government development.

The extensive national portal for Australia helps citizens to navigate to key features, government initiatives, services and information. The website prominently features the Social Inclusion website with the

vision of society in which all Australians feel valued and are equipped with the opportunity to participate fully in society. New features on the site include State, Territory and Local Government Search within the national site, smart forms for enrolling to vote and making complaints, and new e-consultation features for public consultation, blogs and a feature called Bright Ideas where citizens can provide new ideas and perspectives on a specific or any subject.

Table 4.25 E-government development in Oceania

Country	E-government development index value		World e-government development ranking	
	2010	2008	2010	2008
Australia	0.7863	0.8108	8	8
New Zealand	0.7311	0.7392	14	18
Palau	0.4189	0.0000	103	...
Fiji	0.3925	0.4156	113	105
Samoa	0.3742	0.3761	115	115
Tonga	0.3697	0.3950	116	112
Vanuatu	0.2521	0.2510	155	154
Solomon Islands	0.2445	0.2748	156	147
Papua New Guinea	0.2043	0.2078	171	166
Kiribati	...	...	...	...
Marshall Islands	...	...	...	...
Micronesia (Federated States of)	...	...	...	...
Nauru	...	...	...	...
Tuvalu	...	...	...	...
Sub-regional average	0.4193	0.4338		
World average	0.4406	0.4514		

4.3 Economic groupings

Table 4.26 illustrates the top 25 developing countries in the 2010 Survey. Many developing countries have been investing in streamlining the national and ministry portals and websites to better offer more e-services and more actively engage citizens in dialogues with government. The digital divide between the developed countries and developing countries is gradually closing in the e-government arena.

Table 4.27 provides a list of the least developed countries, which face severe constraints to e-government development.

Finally, some countries do not appear in the ranking of the 2010 United Nations E-Government Survey. The Survey lacked data in significant areas for these countries, which made it impossible to either construct an index on infrastructure or human resources capacity, or both. Tables in the

Table 4.26 Top ranked developing countries

Rank	Country	E-government development index value		World e-government development ranking	
		2010	2008	2010	2008
1	Republic of Korea	0.8785	0.8317	1	6
2	Singapore	0.7476	0.7009	11	23
3	Bahrain	0.7363	0.5723	13	42
4	Israel	0.6552	0.7393	26	17
5	Colombia	0.6125	0.5317	31	52
6	Malaysia	0.6101	0.6063	32	34
7	Chile	0.6014	0.5819	34	40
8	Uruguay	0.5848	0.5645	36	48
9	Barbados	0.5714	0.5667	40	46
10	Cyprus	0.5705	0.6019	42	35
11	Kazakhstan	0.5578	0.4743	46	81
12	Argentina	0.5467	0.5844	48	39
13	United Arab Emirates	0.5349	0.6301	49	32
14	Kuwait	0.5290	0.5202	50	57
15	Jordan	0.5278	0.5480	51	50
16	Mongolia	0.5243	0.4735	53	82
17	Ukraine	0.5181	0.5728	54	41
18	Antigua and Barbuda	0.5154	0.4485	55	96
19	Mexico	0.5150	0.5893	56	37
20	Saudi Arabia	0.5142	0.4935	58	70
21	Russian Federation	0.5136	0.5120	59	60
22	Brazil	0.5006	0.5679	61	45
23	Qatar	0.4928	0.5314	62	53
24	Peru	0.4923	0.5252	63	55
25	Belarus	0.4900	0.5213	64	56
	World average	0.4406	0.4514		

Annex provide the raw scores for the telecommunication infrastructure, human capacity and online service indexes of these countries.

A number of countries are engaged in the development of regional e-government strategies, as illustrated by the examples in box 4.16.

4.4 Progress in online service provision

The number of e-services available on government websites continues to grow by leaps and bounds. Every year it is evident that more and more e-services are put into operation in government websites. A country's strength in online service provision is measured against four benchmarks.

- Does the national government provide basic information services online?
- Does the national government use multimedia technology and promote two-way exchanges with citizens?

Table 4.27 E-government development in least developed countries¹

Rank	Country	E-government development index value		World e-government development ranking	
		2010	2008	2010	2008
1	Maldives	0.4392	0.4491	92	95
2	Samoa	0.3742	0.3761	115	115
3	Lesotho	0.3512	0.3805	121	114
4	São Tomé and Príncipe	0.3258	0.3215	128	130
5	Angola	0.3110	0.3328	132	127
6	Bangladesh	0.3028	0.2936	134	142
7	United Republic of Tanzania	0.2926	0.2929	137	143
8	Equatorial Guinea	0.2902	0.2890	138	145
9	Madagascar	0.2890	0.3065	139	135
10	Cambodia	0.2878	0.2989	140	139
11	Myanmar	0.2818	0.2922	141	144
12	Uganda	0.2812	0.3133	142	133
13	Zambia	0.2810	0.2266	143	158
14	Rwanda	0.2749	0.2941	148	141
15	Lao People's Democratic Republic	0.2637	0.2383	151	156
16	Bhutan	0.2598	0.3074	152	134
17	Nepal	0.2568	0.2725	153	150
18	Sudan	0.2542	0.2186	154	161
19	Vanuatu	0.2521	0.2510	155	154
20	Solomon Islands	0.2445	0.2748	156	147
21	Mauritania	0.2359	0.2028	157	168
22	Democratic Republic of the Congo	0.2357	0.2177	158	162
23	Malawi	0.2357	0.2878	159	146
24	Comoros	0.2327	0.1896	160	170
25	Mozambique	0.2288	0.2559	161	152
26	Timor-Leste	0.2273	0.2462	162	155
27	Senegal	0.2241	0.2531	163	153
28	Yemen	0.2154	0.2142	164	164
29	Togo	0.2150	0.2191	165	160
30	Liberia	0.2133	0.2170	166	163
31	Gambia	0.2117	0.2253	167	159
32	Afghanistan	0.2098	0.2048	168	167
33	Haiti	0.2074	0.2097	169	165
34	Djibouti	0.2059	0.2279	170	157
35	Ethiopia	0.2033	0.1857	172	172
36	Benin	0.2017	0.1860	173	171
37	Burundi	0.2014	0.1780	174	174
38	Eritrea	0.1859	0.1965	175	169
39	Mali	0.1815	0.1591	176	175
40	Sierra Leone	0.1697	0.1463	177	178
41	Burkina Faso	0.1587	0.1542	178	176
42	Guinea-Bissau	0.1561	0.1521	179	177
43	Guinea	0.1426	0.1402	180	180
44	Central African Republic	0.1399	0.1412	181	179
45	Chad	0.1235	0.1047	182	182
46	Niger	0.1098	0.1142	183	181
47	Kiribati	...	...	...	...
48	Somalia	...	...	...	...
49	Tuvalu	...	...	...	...
	World average	0.4406	0.4514		

- Does the national government use the Internet to deliver public services and solicit occasional input on matters of public interest?
- Does the national government connect public service functions and routinely consult with citizens on matters of public policy?

If there is clear evidence that a country does all four of these things well, and therefore has established a digital foundation for citizen empowerment and inclusion, then it will be highly placed in the online service index.

Overall, the bar for online service has shifted up and the global index average is down in the 2010 Survey as compared to 2008. The present Survey gives more weight to more advanced stages of online development, e.g. availability of transactional services and promotion of the connected approach to e-government. Half of the total available points for online services are assigned to these stages. Specifically, the survey instrument allocates 68 points to characteristics of an emerging online presence (16.9 percent), 116 points to an enhanced online presence (28.8 percent), 169 points to a transactional presence (41.9 percent) and 50 points to a connected presence (12.4 percent) for a maximum possible score of 403.

4.4.1 How governments rank in online services

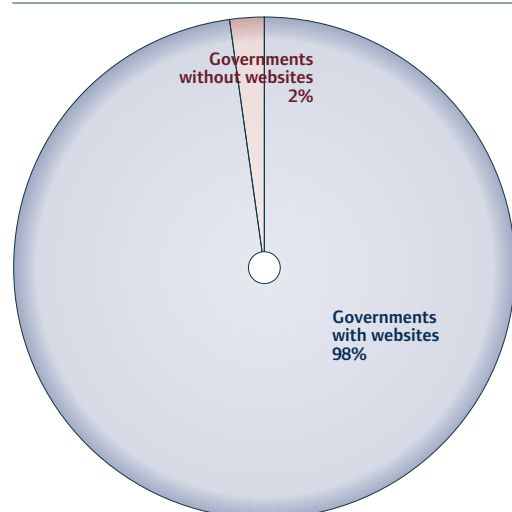
First position in online services is held by the Republic of Korea (1.0000), followed by the United States (0.9365) and Canada (0.8825). Several of the top-ranked countries in 2010, as seen in table 4.28, are newcomers or have otherwise made significant gains in the last two years. Notable climbers include Bahrain, Chile, Colombia, Singapore and the United Kingdom, which have joined the world's top performers in online service development.

Growth of online services is especially strong in the case of middle-income countries. In 2010, middle-income countries accounted for four positions among the top 10 in the online service development index, and 14 positions among the top 35 countries.

A country's strength in online service provision correlates positively with its use of new technology such the emerging tools for social networking. The 2010 Survey put greater emphasis on online service provision and networking with citizens,

engaging and empowering them to be part of the governance process. Social networking tools enable governments to consult with citizens and expand opportunities for participation in decision-making processes. They can be used to garner feedback and opinions and to elicit support for public policy. To engage citizens, more countries have developed sites in the social networking arena and more are in the process of doing so.

Figure 4.6 **Nearly all governments have websites**



Some low-income countries are lagging far behind the world trend towards more and better e-government development. Some countries have no national portal or ministry websites for education, finance, health, labour and social services. Consequently, these countries receive a score of zero for the online service index. Countries with no online presence include Central African Republic, Somalia and Swaziland. These countries could not be ranked for online services development because they had no government websites. However, Central African Republic and Swaziland received an e-government development score because the country had sufficient data to calculate the indexes for telecommunications infrastructure and human capacity.

Sometimes e-government development can change quickly. The 2008 Survey reported that Zambia had no online presence and yet by the 2010 Survey the country's national sites were readily available and easily assessed.

Table 4.28 **Top 20 countries in online service development**

Rank	Country	Online service index value	Rank	Country	Online service index value
1	Republic of Korea	1.0000	11	France	0.6825
2	United States	0.9365	12	Netherlands	0.6794
3	Canada	0.8825	13	Denmark	0.6730
4	United Kingdom	0.7746	14	Japan	0.6730
5	Australia	0.7651	15	New Zealand	0.6381
6	Spain	0.7651	16	Malaysia	0.6317
7	Norway	0.7365	17	Belgium	0.6254
8	Bahrain	0.7302	18	Chile	0.6095
9	Colombia	0.7111	19	Israel	0.5841
10	Singapore	0.6857	20	Mongolia	0.5556

4.4.2 About the services governments provide online

An increasing number of governments are endeavouring to meet the needs of the citizens by providing more online content and e-services and by creating a level of online dialogue that was not in place even a few years ago, according to the 2010 Survey. Portals are becoming more integrated and streamlined. It is easier than ever for citizens to find information and services online. This is especially true in developed and middle-income countries. Least developed countries are starting to incorporate many of the online tools that developed and middle-income countries now use, including videos and social networking tools. Only a few countries are able to offer many secure transactions online, however, although the trend is toward more e-forms and e-payments.

Box 4.16 Regional e-government strategies

Ministers responsible for e-government policy in the European Union issued a "Ministerial Declaration on e-Government" in November 2009 that shared a common vision, objectives and implementation approach for 2011-2015.

The Persian Gulf region has developed e-government standards and structures that are implemented throughout the region. The countries in the Gulf Cooperative Council are working together and sharing their e-government experiences to advance the region as a whole. All GCC countries were represented at a regional e-government conference in December 2009 in Oman. Awards were presented for innovative e-government programmes, services and solutions in the region.

African Ministers confirmed their willingness to promote inter-governmental cooperation in having common frameworks for e-Government regional development at a meeting in Mexico in September 2009. In February 2010, ICT will be the focus of the Summit of the African Union, with the theme 'Information and Communication Technologies in Africa: Challenges and Prospects for Development.'

A draft regional Caribbean e-Government strategy 2010-2014 was prepared in 2009 with the active participation of senior e-government representatives of Caribbean States and UNDESA support. It produced by Caribbean Centre for Development Administration (CARICAD), an agency of CARICOM. This strategy contains a consensus on e-government vision, goals, strategic initiatives, immediate outcomes and implementation plan for Caribbean countries.

The International Telecommunication Union (ITU) is planning to organize a series of regional summits, strategies and products, including the Arab States and the Americas. The effort is part of its 'Connect the World by 2015 initiative'.

Ninety-eight percent of countries have some presence on the Web, either by having a national portal or ministry website, as illustrated in figure 4.6. This number has not changed since 2008.

Certain features are common across many websites. Table 4.29 reveals that most government websites have a section for archived information and a section called ‘What’s New’. These features enable users to find information on past activities that are no longer highlighted on the website and encourage users to browse updated information. In contrast, only 44 percent of governments have a section that provides ready answers to frequently asked questions (FAQ). The use of FAQs can reduce the amount of time and human resources devoted to public inquiry functions, and improve public perception that the government is responsive to citizens’ concerns.

Table 4.29 **Characteristics of an emerging online presence**

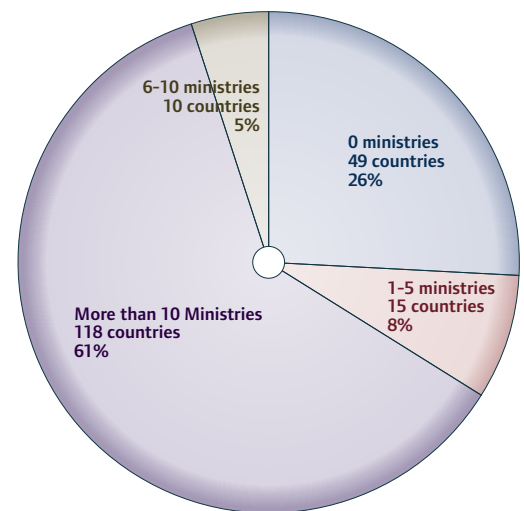
Feature	Number of countries	Percent
What’s new?	156	81
Frequently asked questions	85	44
Archived information	166	86

Most national portals have direct links to their respective ministries. The 2010 Survey finds that 61 percent of national portals contain links to more than 10 ministry websites, as illustrated in figure 4.7. These links allow citizens visiting a national portal to link quickly and directly to the information and services offered by a particular ministry, avoiding separate searches. They can simply go to the national homepage and access the ministry websites.

Figure 4.7 also shows that one quarter of national portals do not have links to any ministries, which means that they are either completely segregated from the websites of ministries, or the ministries in these

countries do not have websites at all. Citizens visiting national portals with links to only five or less ministries in their homepages must search outside for information that should be readily accessible. Ideally, the homepage of a country’s national portal should have links to all ministry and government agency websites.

Figure 4.7 **Number of ministries linked to a national portal**



Site maps can be found on slightly over 50 percent of national portals, as per table 4.30. This very useful feature helps citizens to find pages on the website without having to guess where information might be found. Links to other public sector services are provided on 67 percent of national portals, which makes them a one-stop shop for information and services.

Table 4.30 **Site maps and linkages from national portals**

Feature	Number of countries	Percent
Site map is available	102	53
Links between national home pages and ministries/departments	143	74
Links between national home page and public sector services	129	67

More than 50 percent of ministry websites have site maps, help or FAQs available or are integrated with the national portal, as shown in figure 4.8. Ministries of finance are more likely than other ministries to be integrated with the national portal and to include a site map.

Even static forms are not widely available on national portals. Figure 4.9 indicates that 63

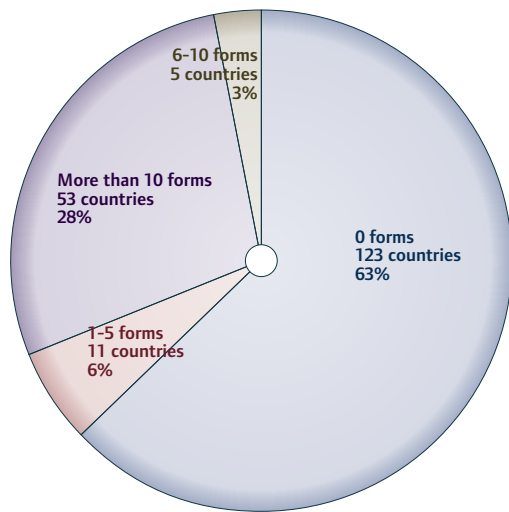
Box 4.17 Leaders in transactional and connected e-government

Who are the world leaders in transactional and connected e-government? The following countries are in the third or fourth stage of online services development: Australia, Austria, Belgium, Canada, Denmark, Estonia, Finland, France, Germany, Japan, Malaysia, Netherlands, New Zealand, Norway, Republic of Korea, Singapore, Spain, Sweden, United Kingdom and United States.

These countries have been integrating back-office operations and providing e-services to citizens in a seamless manner. Information is efficiently transferred between agencies and departments. In addition, these countries have a proven track-record of using Web 2.0 tools to communicate with citizens and regularly receive inputs from them. These inputs are used to shape public policy and law. The level of public trust in government is higher among advanced e-government countries than in many other places.

percent of countries have not provided citizens with the capability of downloading static forms, let alone forms that can be filled-out and submitted online. In many least developed countries citizens can download forms, complete them by hand and manually submit them to the relevant ministry or department.

Figure 4.9 **Availability of static online forms**



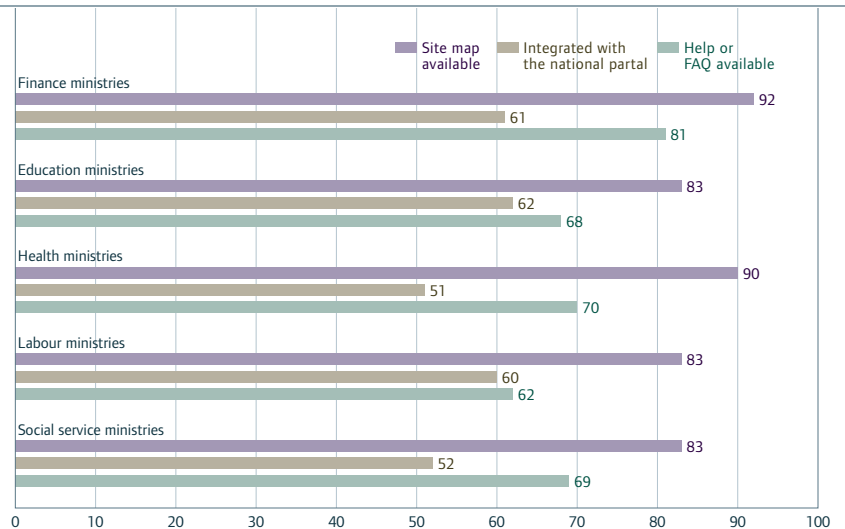
Some 49 percent of national portals or websites are in more than one language. Where a site has more than one language, English is usually the second language, demonstrating the continued importance of that language on the Internet. In a few cases, ministry websites are in English only, while English is not the first language of that country.

Table 4.31 **Website design features: RSS, audio, video, language**

Feature	Number of countries	Percent
Site meets provides at least minimal level of web content accessibility	24	13
Site support audio and/or video content	95	49
Site provides real simple syndication (RSS)	68	35
Site offers content in more than one language	95	49

The use of real simple syndication (RSS) feeds jumped from 10 percent of national portals in the 2008 Survey to 35 percent in the 2010 Survey. This means that more national portals are automatically releasing information and content to individual subscribers. Citizens are informed whenever any updates are made.

Figure 4.8 **Features of ministry websites**



Multimedia is gaining importance in the configuration of most national and ministry websites, with 49 percent of national portals supporting audio and/or video content, up from only 38 percent in 2008.

Table 4.32 **Support of mobile access**

Feature	Number of countries	Percent
Site supports WAP/GPRS access	24	13
Site offers service to send alert messages to mobile phones	25	13
User can apply for registration or application by mobile phone	14	7
Users can pay registration fees, fines, etc. by mobile phone	17	4

Figure 4.10 **Selected countries with high transactional presence scores**

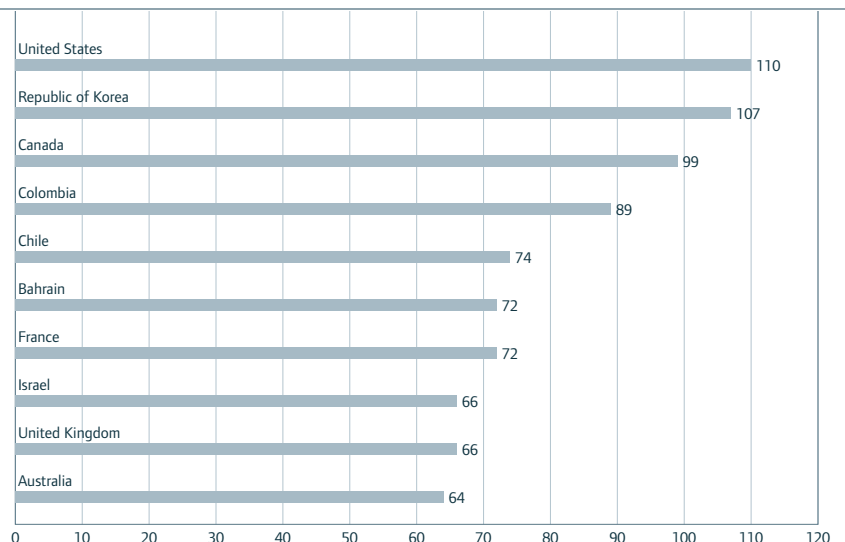
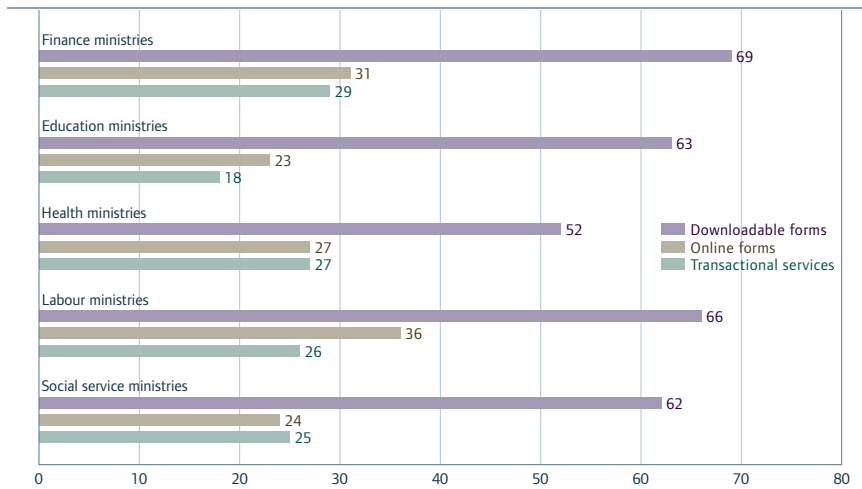


Figure 4.11 Number of ministry websites with online forms and transactional services



Wireless devices such as mobile phones are being used by some governments to provide services in the form of alert messages, applications or fee payment. Table 4.33 indicates a slight increase in the number of national portals using wireless application protocol (WAP) for wireless communication. In 2008, 19 national portals had WAP implemented.

Wireless devices such as mobile phones are almost equally popular in developing countries as they are in developed countries. In 2008, 14 national sites offered mobile alerts, while in 2010, that number increased to 25. Such an increase is minor compared to the major opportunity that wireless devices offer to governments interested in providing electronic content and services to their citizens. Meanwhile, only in seven countries can users pay registration fees, fines, etc. via mobile access provided through their national portals. These countries are Bahrain, Croatia, Estonia, Israel, Mongolia, New Zealand and Sudan.

Table 4.33 Online payment

Payment type	Number of countries	Percent
Taxes	34	18
Registrations	36	19
Permits, certificates, identification cards	33	17
Fines	22	11
Utilities	18	9

Compared to mobile payment options, more are offered through online portals. How many countries allow online payment of taxes, fines, registrations, utilities, and certificates from their

national portals? The majority of countries in table 4.33 were middle income countries. Since 2008, there has been a slight increase of governmental online payment facilities.

Transactional services

Only a few countries are able to offer many transactional services online at this time. However, countries with the highest scores in figure 4.10 offer a wide range of integrated transactional e-services that cater to many segments of society. They have comprehensive back office integration systems and secure networks on which these e-services operate, giving citizens security and confidence. The United States, the Republic of Korea and Canada are the top three countries in terms of transactional opportunities. The developing countries are well-represented in the top 10 with four countries: Bahrain, Chile, Colombia and Israel.

Table 4.34 Online submissions

Feature	Number of countries	Percent
Online forms	53	28
Online transactions	60	32
Application for government benefits	32	17
Acknowledgement of receipt	19	10

Table 4.35 Connected presence

Feature	Number of countries	Percent
Single sign-on	31	16
Electronic identity management and authentication	33	17
One-stop shop	130	68
Information in machine readable format	74	39
Interaction with Head of State	61	32

Table 4.36 Connecting to citizens

Feature	Number of countries	Percent
Citizens can request personal information about themselves	21	11
Users can tag, assess and rank content	7	4
Users can initiate proposals	16	8
Users can personalize the website	12	6
Government has committed to incorporating e-participation outcome in decision making	22	11

Fewer than one-third of governments provide citizens with the possibility of online transactions and the online submission of e-forms, as shown in table 4.34 on online submissions. In addition, less

than 20 percent of governments allow citizens to apply for government benefits online. The main reason for this low number is the complex integration that is required among different systems to ensure compatibility and a seamless interaction. All administrative or financial transactions need to be performed over a secure network. The threat of identify theft or financial fraud is too great on an unsecured network.

The websites of ministries of finance have the most downloadable forms and online transaction services available for citizens, while the ministries of labour have the most e-forms, as seen in figure 4.11.

Governments are having some success in creating a 'connected presence' with their national portals. Table 4.37 shows that they are creating websites that support citizens by making it easier for them to find information, by integrating sites into a one-stop shop, and by creating single-sign-on for access to all government services. The level of sophistication of the single-sign-on varies greatly among countries. Very few single-sign-on systems have reached the level of Singapore's Sing-pass.

Governments are inviting citizens to become more actively involved in determining the design and content of portals and websites. Table 4.36 lists a variety of ways this is being done. Some countries allow users to personalize their own 'Mysite' from the information found on government portals. Six countries allow citizens to tag and rank content, which allows them to have more control of the information provided in the portals.

4.4.3 The data behind the rankings

What kind of data goes into measuring a country's performance in online services? Table 4.37 shows categories on online service data including emerging information services, enhanced information services, transactional services and connected services. The scores include the total scores for the national portal and five ministries. The maximum points that a country could attain is 403.

Table 4.38 shows online service data for selected developing countries. Most developing countries are still limited in the transactional aspect of e-government. None of the countries listed were able to obtain over 50 percent of the points available in the transaction stage.

Table 4.37 **Breakdown of online service scores for top ranked countries**

Rank	Country	Emerging information services (stage 1)		Enhanced information services (stage 2)		Transactional services (stage 3)		Connected services (stage 4)		Total	
		Points	Score (%)	Points	Score (%)	Points	Score (%)	Points	Score (%)	Points	Score (%)
1	Republic of Korea	66	97	106	91	112	66	31	62	315	78
2	United States	62	91	97	84	115	68	21	42	295	73
3	Canada	59	87	83	72	104	62	32	64	278	69
4	United Kingdom	61	90	87	75	71	42	25	50	244	61
5	Australia	58	85	76	66	69	41	38	76	241	60
5	Spain	60	88	88	76	68	40	25	50	241	60
7	Norway	61	90	85	73	69	41	17	34	232	58
8	Bahrain	63	93	72	62	72	43	23	46	230	57
9	Colombia	57	84	51	44	89	53	27	54	224	56
10	Singapore	54	79	82	71	64	38	16	32	216	54
11	France	54	79	71	61	77	46	13	26	215	53
12	Netherlands	60	88	80	69	55	33	19	38	214	53
13	Denmark	54	79	88	76	52	31	18	36	212	53
13	Japan	59	87	78	67	56	33	19	38	212	53
15	New Zealand	59	87	76	66	46	27	20	40	201	50
16	Malaysia	51	75	73	63	55	33	20	40	199	49
17	Belgium	57	84	66	57	54	32	20	40	197	49
18	Chile	57	84	44	38	74	44	17	34	192	48
19	Israel	49	72	45	39	66	39	24	48	184	46
20	Mongolia	47	69	49	42	54	32	25	50	175	43
21	Germany	54	79	76	66	23	14	20	40	173	43
22	Jordan	50	74	44	38	57	34	17	34	168	42
23	Egypt	55	81	51	44	49	29	12	24	167	41
24	Kazakhstan	66	97	53	46	24	14	23	46	166	41
24	Sweden	54	79	67	58	26	15	19	38	166	41

Table 4.38 **Online service levels in selected developing countries**

Rank	Country	Emerging information services (stage 1)		Enhanced information services (stage 2)		Transactional services (stage 3)		Connected services (stage 4)		Total	
		Points	Score (%)	Points	Score (%)	Points	Score (%)	Points	Score (%)	Points	Score (%)
30	Tunisia	52	76	40	34	50	30	10	20	152	38
32	Uruguay	51	75	43	37	36	21	21	42	151	37
36	Kuwait	41	60	39	34	58	34	7	14	145	36
39	Mexico	45	66	52	45	26	15	16	32	139	34
40	El Salvador	48	71	30	26	46	27	10	20	134	33
44	Argentina	53	78	42	36	22	13	13	26	130	32
45	Peru	53	78	37	32	26	15	13	26	129	32
49	Philippines	48	71	25	22	35	21	16	32	124	31
53	Uzbekistan	52	76	39	34	18	11	10	20	119	30
54	Cyprus	44	65	39	34	19	11	15	30	117	29
55	Brazil	53	78	34	29	10	6	19	38	116	29
55	China	54	79	40	34	4	2	18	36	116	29
55	India	45	66	41	35	22	13	8	16	116	29
55	Oman	47	69	33	28	26	15	10	20	116	29
59	Dominican Republic	46	68	30	26	24	14	15	30	115	29
62	Turkey	57	84	29	25	9	5	14	28	109	27
62	Ukraine	55	81	31	27	7	4	16	32	109	27
65	Trinidad and Tobago	50	74	39	34	12	7	6	12	107	27
67	Thailand	50	74	31	27	15	9	9	18	105	26
68	Russian Federation	49	72	28	24	15	9	12	24	104	26

Table 4.39 Online service levels in least developed countries¹

Rank	Country	Emerging information services (stage 1)		Enhanced information services (stage 2)		Transactional services (stage 3)		Connected services (stage 4)		Total	
		Points	Score (%)	Points	Score (%)	Points	Score (%)	Points	Score (%)	Points	Score (%)
60	Bangladesh	48	71	44	38	5	3	15	30	112	28
65	Angola	52	76	38	33	9	5	8	16	107	27
95	Lesotho	52	76	29	25	1	1	1	2	85	21
106	Afghanistan	41	60	25	22	5	3	2	4	83	21
111	Ethiopia	32	47	23	20	3	2	5	10	73	18
114	Bhutan	30	44	21	18	6	4	2	4	63	16
116	Mali	29	43	12	10	9	5	8	16	59	15
120	Senegal	32	47	14	12	3	2	7	14	58	14
121	Rwanda	34	50	14	12	2	1	5	10	56	14
121	United Republic of Tanzania	34	50	21	18	...	...	...	...	55	14
124	Mozambique	32	47	13	11	3	2	6	12	55	14
125	Nepal	30	44	22	19	...	...	1	2	54	13
126	Madagascar	28	41	13	11	4	2	7	14	53	13
127	Maldives	27	40	24	21	...	...	...	...	52	13
129	Burkina Faso	26	38	13	11	...	...	10	20	51	13
129	Sudan	23	34	16	14	2	1	8	16	49	12
134	Samoa	24	35	21	18	...	...	...	...	49	12
135	Cambodia	25	37	13	11	2	1	3	6	45	11
138	Timor-Leste	23	34	16	14	...	...	3	6	43	11
143	Benin	20	29	10	9	4	2	3	6	42	10
145	Zambia	21	31	8	7	...	...	4	8	37	
146	Uganda	18	26	11	9	...	...	3	6	33	
150	Democratic Republic of the Congo	17	25	7	6	...	...	4	8	32	
150	Mauritania	11	16	13	11	1	1	3	6	28	
150	São Tomé and Príncipe	21	31	7	6	...	...	...	...	28	
154	Gambia	16	24	9	8	...	...	1	2	28	
154	Myanmar	19	28	7	6	...	...	...	...	26	
156	Lao People's Democratic Republic	12	18	9	8	2	1	2	4	26	
160	Togo	6	9	8	7	3	2	5	10	25	
163	Liberia	11	16	7	6	...	...	2	4	22	
167	Djibouti	9	13	3	3	...	...	3	6	20	
167	Yemen	9	13	4	3	...	...	2	4	15	
169	Solomon Islands	7	10	6	5	...	...	1	2	15	
170	Burundi	8	12	2	2	...	...	3	6	14	
172	Niger	4	6	2	2	3	2	3	6	13	
173	Guinea	5	7	2	2	3	2	1	2	12	
174	Equatorial Guinea	2	3	5	4	...	...	3	6	11	
175	Comoros	5	7	3	3	...	...	1	2	10	
175	Kiribati	4	6	5	4	...	...	...	...	9	
179	Eritrea	3	4	4	3	...	...	...	...	9	
181	Chad	3	4	2	2	1	1	...	...	7	
181	Haiti	3	4	2	2	...	...	1	2	6	
184	Guinea-Bissau	...	...	3	3	1	1	1	2	6	
184	Malawi	3	4	2	2	...	...	...	...	5	
186	Tuvalu	1	1	3	3	...	...	...	...	5	
186	Vanuatu	1	1	2	2	...	...	1	2	4	
189	Sierra Leone	...	...	...	...	...	...	1	2	4	
...	Central African Republic	...	...	...	...	...	...	...	...	1	
...	Somalia	...	...	...	...	...	...	...	...	...

Least developed countries have no real e-services, nor are they providing citizens with transactional opportunities, as presented in table 4.39. The vast majority of the sites surveyed primarily contain e-information and the beginning stages of citizen engagement with polls and feedback forms. The top two positions among least developed countries in the online service assessment went to Bangladesh and Angola. ■

Chapter 5**Citizen empowerment
and inclusion**

5.1	Progress in e-participation	84
5.1.1	About e-participation	84
5.1.2	How governments rank in e-participation	85
5.2	Questions of access and diversity	88
5.2.1	The digital divide and inclusive e-government	88
5.2.2	Unequal benefits for women and men	90

E-government can be used by governments to empower and include citizens. Individuals and their democratic governance systems as a whole stand to benefit from better access to information and services, and from more opportunities for their voices to be heard by decision makers. The United Nations E-Government Survey assesses citizen empowerment and inclusion by reviewing channels for online participation in public affairs. The area of online services that opens up channels for online participation in public affairs is termed ‘e-participation’. Given special attention by Survey, it is measured using an index that isolates Internet-based consultative and decision-making mechanisms. A country’s strength in e-participation is measured against three benchmarks:

- Does the national government publish information on items under consideration?
- Are there ways for the public to engage in consultations with policy makers, government officials and one another?
- Can citizens directly influence decisions, for example by voting online or using a mobile telephone?

Countries that have been actively developing participatory features fare better in e-participation rankings.

5.1 Progress in e-participation

The provision of online services, as described above, provides a transformative platform for the public sphere. It intersects with the process of social communication where opinions are expressed, synthesized and coalesced. There are many types of public spheres operating across many different platforms, including the traditional mass media of television, radio and newspapers. The Internet is transformative because it allows anyone to be a publisher. This changes the power relationships in the public sphere in profound ways. It affords political leaders new routes to power. It affords citizens new ways to have their say. Even the voices of the marginalized can now be heard making the public sphere increasingly rich and diverse.¹

5.1.1 About e-participation

Many governments are engaging citizens for feedback via their websites. The majority of sites have polls or surveys or feedback buttons, but this is just the tip of the iceberg. Web 2.0 (and Web 3.0 in the near future) will provide citizens with an avenue for direct impact on how government operates. E-participation goes well beyond e-voting; it changes the dynamics between government and citizens. Web 2.0 and social networking tools have created an environment that politicians and decision-makers must adjust to and incorporate in their daily work. In the United States, for example, more than 2 million followers subscribe to the Twitter feed of President Barack Obama. Politicians have been inclined to embrace and encourage the use of these e-participation and e-tools. They are providing information directly to citizens, which may help citizens to have a better understanding of their politicians. E-participation is one of the key assessments of the current e-government survey. It reflects on how well governments are keeping citizens at the centre of e-services.

Many governments have enhanced their national and ministerial websites to incorporate interactive tools to strengthen citizen e-participation. As citizens are empowered, they create a different relationship with their respective governments, characterized by enhanced effectiveness, as government are able to respond to the needs of citizens in a more direct manner. The e-participation

index is indicative on how governments create an environment in which citizens can be more active and supportive of their governments.

Citizens express their views in environments they feel are acceptable. The 2010 Survey assesses how governments are interacting with citizens using popular Web 2.0 tools such as blogs, chat rooms and SMS as well as communication technologies such as Facebook, Twitter and other social networking tools.

Web 2.0 and social networking tools have empowered citizens to become more active in expressing their views on many issues, especially on issues concerning environment, health, education and other areas of government policy. Citizens use Web 2.0 and social networking tools to galvanize other like-minded citizens to share ideas and to develop collaborative approaches in tackling the issues that are important to them. Politicians and other decision-makers need to tap into this wealth of information and knowledge in order to be more responsive to their constituents.

As more and more people create their own blogs and issue-based social networking groups, they are becoming power-brokers in influencing governmental policies. Today, many citizens are interested in the views of bloggers and those of other members of their social networking groups. This new-found power and influence is contributing to higher standards of transparency in government.

The United Nations E-Government Survey recognizes the importance of e-participation in all its aspects ranging from e-information, e-consultation to e-decision-making. Politicians and political decision makers represent the voice of citizens within government. Now these politicians and decision makers are soliciting information and knowledge from the constituents online and in real-time, seeking to respond more efficiently to their constituents.

There is a growing global trend towards listening to citizen's voices and engaging their participation. This trend is likely to continue and expand in the next few years and beyond. Citizens are employing more e-participation tools. Politicians and decision-makers seem to be inclined to listen to the citizens. Although this movement is primarily taking hold in high-income countries, middle-income

countries are not far behind. Governments are now creating portals on social networking sites in order to reach out to citizens and promote their programmes, messages and policies. Citizens using e-participation tools have influenced several major presidential elections in recent years.

E-participation goes well beyond presidential and parliamentary elections; it is the empowerment of citizens to have an open dialogue with government. In densely populated countries, one sees e-participation working at the local levels, where district and village leaders are able to communicate with their constituency by using different e-tools. In smaller countries, e-participation can take place at the national level, where decision-makers can have direct access to citizens.

5.1.2 How governments rank in e-participation

The e-participation index shows how governments performed in 2010 compared to 2008. The 2010 Survey included a comprehensive review of how governments are including citizens in their decision-making process, how governments are providing information and knowledge, and how governments are consulting citizens to obtain feedback and opinions.

The best performing e-participation countries as expressed in the e-participation index are listed in table 5.1. The e-participation index combines the cumulative scores from the national portals plus the scores for the citizen-empowerment.

The Republic of Korea leads the e-participation index, followed by Australia, Spain and New Zealand. More than one third of the countries in the top 35 list are new and, notably, the majority are middle-income countries. Since 2008, a number of middle-income countries have revamped their websites to obtain more feedback and start the dialogue process with citizens.

'Best practices' were noted in Chile, Croatia, Cyprus and Mongolia. The countries placed more emphasis on obtaining feedback and inputs from citizens and also included more e-participation tools such as blogs, discussion forum, social networking sites, polls and citizen feedback.

Kazakhstan and Kyrgyzstan stand out for embracing the concept of e-participation. Their

Table 5.1 **Top 20 countries in e-participation**

Rank	Country	2010 e-participation index value	2010 rank	2008 rank	Change +/(-)
1	Republic of Korea	1.0000	1	2	1
2	Australia	0.9143	2	5	3
3	Spain	0.8286	3	34	31
4	New Zealand	0.7714	4	6	2
4	United Kingdom	0.7714	4	25	21
6	Japan	0.7571	6	11	5
6	United States	0.7571	6	1	(5)
8	Canada	0.7286	8	11	3
9	Estonia	0.6857	9	8	(1)
9	Singapore	0.6857	9	10	1
11	Bahrain	0.6714	11	36	25
12	Malaysia	0.6571	12	41	29
13	Denmark	0.6429	13	3	(10)
14	Germany	0.6143	14	74	60
15	France	0.6000	15	3	(12)
16	Netherlands	0.6000	15	16	1
17	Belgium	0.5857	17	28	11
18	Kazakhstan	0.5571	18	98	80
19	Lithuania	0.5286	19	20	1
20	Slovenia	0.5143	20	55	35

national portals allow citizens to initiate their own proposals, which the government reviews in the decision-making process. Citizens receive an acknowledgement that their inputs on e-deliberations or e-opinions have been received. The national portals allow discussion via social networking tools and they also post past forum debates. Their senior officials respond directly to the opinions from the online forums.

Figure 5.1 **Geographic distribution of best performing countries in e-participation**

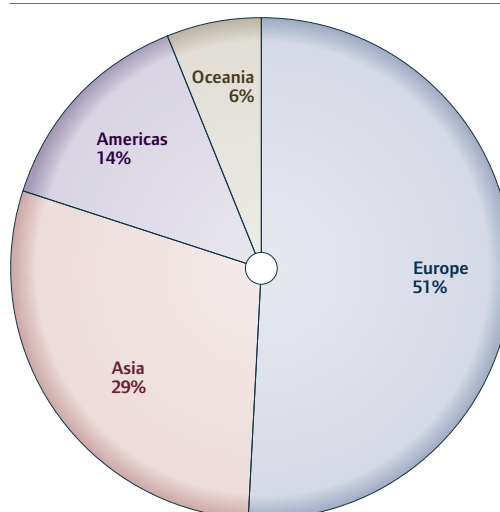


Figure 5.1 is a graphical presentation of table 5.1. The European continues to dominate the top list with almost 50 percent of the countries from the region appearing in the list. The Asian region is next with a little over 30 percent followed by the Americas and Oceania. There were no African countries in the top 35.

Figure 5.2 Government interactions with citizens

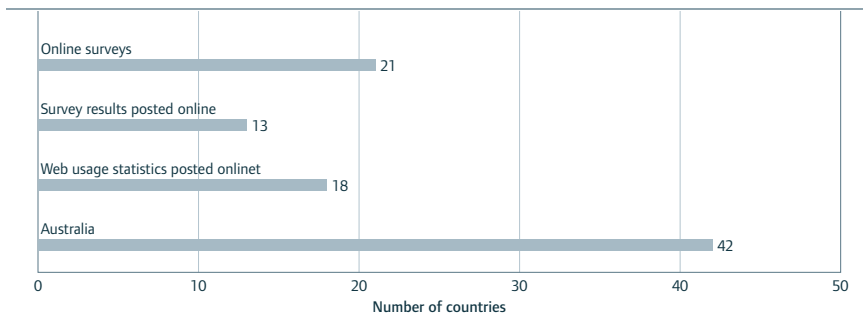


Figure 5.3 Countries with high points for connected services

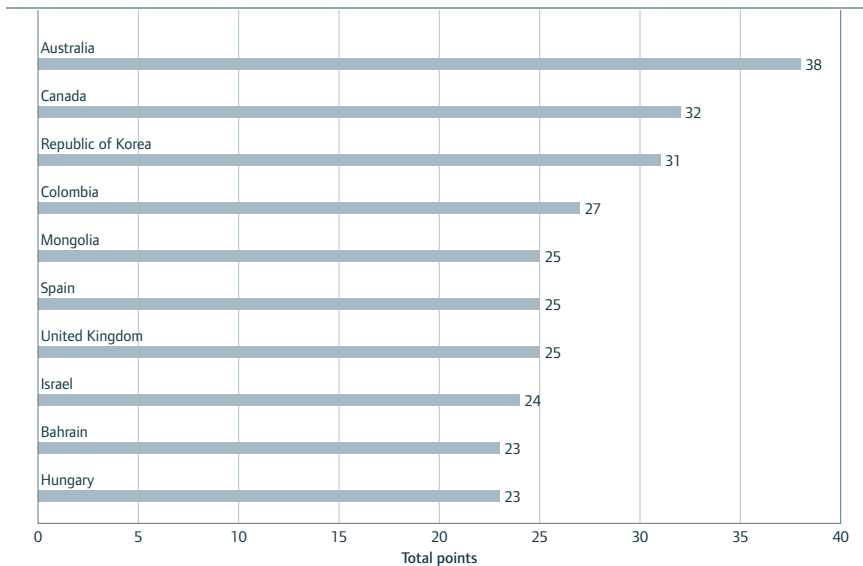
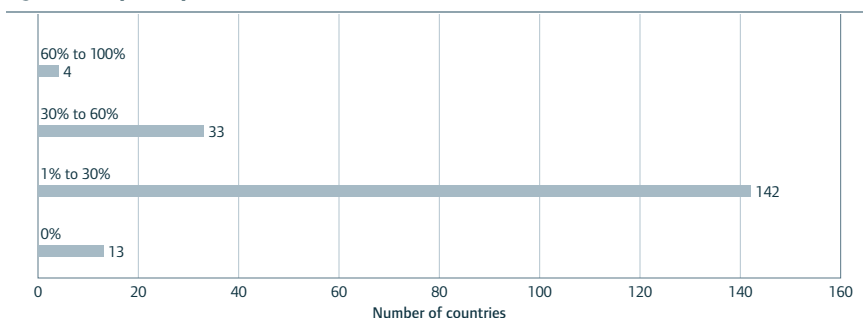


Figure 5.4 E-participation utilization levels



What is the level of interaction between government and citizens? How does government track citizen usage of its websites? Figure 5.2 is about government interactions with citizens. It also shows the number of countries that have created a secure network for citizens to participate. As figure 5.2 indicates, a very limited number of countries carry out surveys and report the results online.

Figure 5.3 shows the best-performing countries with the largest number of aggregate points for connected services. Australia had the highest connected score in 2010, followed by Canada and the Republic of Korea. The top 10 countries are evenly distributed with 50 percent coming from developing and developed regions.

The quality of e-participation in government websites is shown in table 5.2. The e-participation section of the survey was strengthened for the 2010 Survey by adding more questions to the survey instrument. As a result, countries generally scored lower. Also, more countries have some aspects of e-participation on their websites, with seven additional countries receiving scores above zero for participation. More specifically, 20 countries received scores of zero for e-participation in 2008, while this figure has been reduced to 13 countries in 2010. In addition, as the threshold for the e-participation section was elevated due to changes in the survey instrument introduced in 2010, fewer countries could receive scores above the 60 percent of the maximum points.

Figure 5.4 shows the breakdown of countries and their respective e-participation range. There was a slight increase from the 30 percent to 60 percent range and a slight decrease in the over 60 percent range in the 2010 Survey.

E-information

The assessment of e-information determines if governments are providing the kind of information that encourages and empowers citizen participation. This includes online publishing of e-participation policies, a calendar of online discussion forums, and electronic notification tools to alert citizens who want to participate.

Australia scored the highest on the e-information assessment in the 2010 Survey. Japan, Mexico and the Republic of Korea tied for second place. Of all

countries surveyed, 88 percent have some information about e-participation on their national portals.

How many countries have information about inclusiveness and e-participation on their national websites? Table 5.3 suggests that governments are encouraging citizens by providing information that invites them to be active and to participate. These governments also provide the necessary e-tools to do so.

Table 5.3 **Information about e-inclusiveness and e-participation**

Feature	Number of countries	Percent
Site provides information about inclusiveness in e-government	49	26
Site provides information about e-participation	39	20

The following countries provide citizens with an updated calendar of events on e-participation that allows people to plan ahead of time if they want to participate: Australia, Belize, Cyprus, Egypt, Japan, Kazakhstan, Kuwait, Libya, Mauritania, Mexico, Pakistan, Peru, Spain and Uruguay. Only 7 percent of the countries surveyed have this option. This represents a slight increase from the 2008 Survey where only 5 percent of the countries surveyed had this option.

Citizen charters or service-level statements are becoming more popular as governments begin to treat citizens as customers. Very few countries had this option in the 2008 Survey. Table 5.4 suggests that governments are now letting the citizens know what is required of the government when citizens are making requests online. Citizens can now hold governments accountable for failing to meet the benchmarks within these charters or service level statements.

Table 5.4 **Interaction with citizens**

Feature	Number of countries	Percent
Citizen charter or service level statement	41	21
Facility for citizen feedback	76	40
Information about employment opportunities	66	34

E-consultation

Governments are starting, albeit slowly, to use interactive tools to conduct dialogue and receive feedback and inputs from citizens with online survey beginning to gain importance. More

Table 5.2 **Quality of e-participation websites of selected countries**

Range	Country				Score (%)
		E-information	E-consultation	E-decision making	Total
Over 60%	Republic of Korea	87.50	78.79	75.00	78.95
	Australia	100.00	60.61	68.75	68.42
	Kazakhstan	87.50	66.67	62.50	68.42
	Bahrain	75.00	66.67	56.25	64.91
30-60%	Spain	75.00	63.64	37.50	57.89
	Kyrgyzstan	50.00	63.64	31.25	52.63
	Mongolia	62.50	54.55	43.75	52.63
	Israel	50.00	51.52	50.00	50.88
	New Zealand	50.00	54.55	43.75	50.88
	United Kingdom of Great Britain	50.00	60.61	31.25	50.88
	Japan	87.50	39.39	50.00	49.12
	United States of America	50.00	54.55	37.50	49.12
	Canada	75.00	36.36	50.00	45.61
	China	37.50	39.39	62.50	45.61
	Colombia	75.00	39.39	43.75	45.61
	Mexico	87.50	51.52	12.50	45.61
	Slovenia	50.00	45.45	43.75	45.61
	Chile	75.00	39.39	31.25	42.11
	Cyprus	50.00	30.30	62.50	42.11
	Estonia	50.00	42.42	31.25	40.35
Singapore	50.00	48.48	18.75	40.35	
Under 30%	Belarus	37.50	33.33	18.75	29.82
	France	37.50	36.36	12.50	29.82
	Netherlands	75.00	18.18	31.25	29.82
	Belgium	62.50	12.12	43.75	28.07
	Kenya	37.50	33.33	12.50	28.07
	Kuwait	75.00	21.21	18.75	28.07
	Turkey	37.50	18.18	37.50	26.32

governments are embedding surveys within their portals and websites in order to capture the citizen's view. The United States is leading the field in this category with most government websites being mandated to have a customer satisfaction survey to gauge the sentiments of citizens. Table 5.5 identifies a number of interactive tools now in use.

Table 5.5 **Interactive tools used by governments**

Payment type	Number of countries	Percent
Online polls	30	16
Online surveys or feedback forms	55	29
Chat rooms or instant messaging	11	6
Web logs	20	10
List services or newsgroups	16	8
Other interactive tools	33	17

The assessment of e-consultation considers the means used to solicit citizen opinion, feedback and input through online polls, chat rooms, instant

Box 5.1 Citizen engagement in economic crisis response

At this time of economic crisis, citizens have also been very active in following what governments are doing with taxpayer dollars. Of the 54 countries that had committed public funds to addressing the financial and economic crisis as of October 2009,² 49 of them have created websites geared to providing information on fiscal stimulus measures and other forms of support to the economy. However, citizen engagement seems to follow the same old patterns. Only nine governments give citizens a say in how taxpayer dollars are spent using online tools.

Observation	Number of countries	Percent of total
Commitment of public funds to addressing the financial and economic crisis	54	100
Government website provides information on financial and budgetary measures linked to the crisis	49	91
Government website give citizens a say on how funds are spent using online tools	9	17

messaging, blogs, etc. The Republic of Korea scored the highest in the e-consultation section, with Bahrain and Kazakhstan tied for second. Seventy-nine percent of the countries surveyed in 2010 have some aspect of e-consultation.

The use of Web 2.0 tools on government portals and websites is still at its infancy stage, with a small number of countries providing this service to its citizens. The number of government sites with online discussion forums rose slightly in 2010.

Feedback forms or online surveys are more commonly used online polls in ministry websites. The ministries of labour tend to use online polling more than other ministries, while the websites of ministries of social services have more feedback mechanisms. Figure 5.5 illustrates the use of e-consultation tools to gather public opinion.

E-decision making

The e-decision making component of the Survey assesses the extent to which countries are committed to empowering citizens to be involved and

are committed to taking into account the citizen’s view when making policy decisions. The Republic of Korea leads in the e-decision making assessment, followed by Australia and Kazakhstan.

Only 9 percent of countries surveyed allow for e-petitions to be submitted to government for consideration from their national and ministry websites. The United Kingdom is one of the leaders, with features that allow citizens to sign their petitions and send them directly to the Prime Minister’s Office. E-petition was reviewed as a separate item in the 2010 Survey, whereas in 2008 it was grouped with other electronic tools.

Table 5.6 **Web 2.0 tools used in e-decision-making**

Feature	Number of countries	Percent
Online discussion forums	32	17
Archive of past discussion forums	27	14
Government officials respond to citizen input	16	8
Government officials moderate e-consultations	8	4
Online petitions	17	9
Online voting	17	9

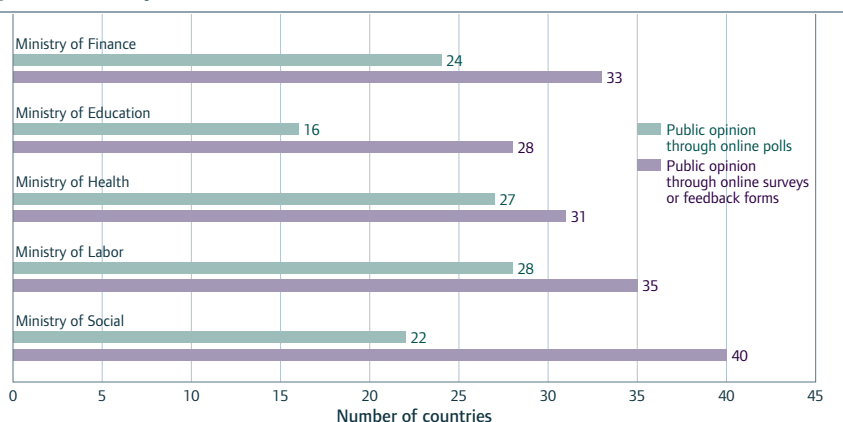
The percentage of countries with government officials responding to citizen feedback is slightly higher in 2010 than it was in 2008. For the most part, government officials at the local levels have a higher level of response to citizen feedback. As in the past, the 2010 Survey only captures data at the national level. It does not include any data on e-government at the local level. Table 5.6 looks at the range of Web 2.0 tools used in e-decision-making.

5.2 Questions of access and diversity

5.2.1 The digital divide and inclusive e-government

There is some debate about how fast the digital gap is expanding, but there is no question that it is expanding. As the population continues to grow in developing countries, outpacing that of developed countries, more and more people will be joining the group of digital ‘have-nots’ unless governments work together to dramatically expand access to information and knowledge. One of the most critical e-government challenges facing many governments today is how to bridge the digital divide.

Figure 5.5 **Ministry websites with e-consultation features**



Even in developed countries, many elderly people, low-income individuals and families, and minorities are outside the realm of the digital society. In order for e-government to be inclusive, it must reach out to all segments of the population with e-services that meet the needs of the digitally disadvantaged.

In developing countries, expanding access to information and knowledge includes these basic steps:

- Increasing the number of Internet users and personal computer usage;
- Increasing the broadband capacity to allow for greater use of mobile devices for e-government;
- Developing content that citizens find important and useful;
- Improving education levels, so that citizens are able to use the information and knowledge provided; and
- Encouraging citizen participation.

Governments should take into account language, culture, content, accessibility and alternate delivery methods in e-services to all segments of the population.

Inclusive planning with citizens prior to the implementation and delivery of services is critical to the success of most e-services. Top-down approaches do not always work. Segments of society that are consulted are more likely to use the e-services when they are operational. Outreach early on allows governments to take time to communicate with the beneficiaries of the service prior to its development.

Another aspect of inclusive e-government is service personalization. Personalized and user-driven services should meet and reinforce shared expectations and principles of social justice as well as personal and public value, so they must also be genuinely universal and available to all.³

Inclusive e-government means using a variety of interfaces such as voice, touch-screen and other modalities in the future. The use of multi-channel systems is also important, not only personal computers and the Internet, but also mobile devices, telephone, digital TV, kiosks, etc. Thus, the technology should also result in simplicity, flexibility and choice, with any complex systems hidden to users.⁴

Box 5.2 Singapore's REACH

Singapore: Government policies and issues

The Government of Singapore assigned the REACH portal as the main online platform for e-engagement on public policies and issues. To encourage online engagement with citizens, ministries and agencies use REACH for announcements and feedback exercises such as the annual budget and rallies for May Day and National Day. A dedicated micro-site provides details of the consultation exercise as well as information on budget-related issues. Citizens post their feedback and suggestions on the micro-site's discussion threads and, in addition, citizens not online are involved in the feedback exercise through a series of face-to-face dialogues.

Discussion forums are separated into two segments. Posts initiated by REACH appear in 'REACH's Discussion Corner' and posts initiated by citizens appear in 'Your Discussion Corner'. Two thirds of all discussions are initiated by citizens. The online discussion forums are considered very effective in enabling the government to gauge sentiments on the ground.

Many citizens use the multi-lingual feature to post translations and to initiate translations.



<http://app.reach.gov.sg/reach/>

Box 5.3 E-participation in China

China: Netizens interact with Government officials

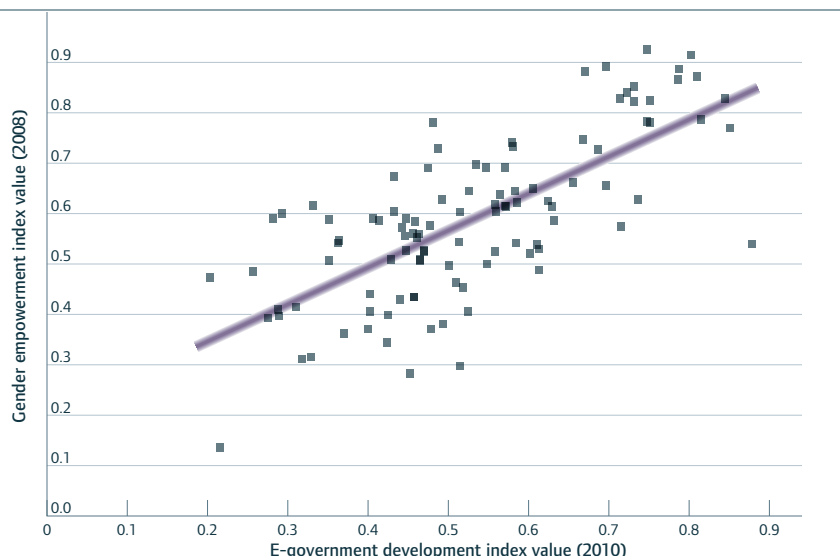
With increased Internet penetration in China and increasing citizenship awareness of the opportunities presented by e-participation in public affairs, the Government has been active in soliciting comments through online channels for consideration in decision-making. Drawing on ideas expressed in online discussion forums, senior government officials have revised, or in some cases eliminated, a number of administrative rules. The emerging trend of e-participation in China has been given a boost by top leaders, among them Premier Wen Jiabao who has held online chat sessions with the aim of soliciting ideas that could inform Government policy in advance of the annual meeting of the National People's Congress. E-participation has also been taken up at the working level by the State Bureau of Anti-Corruption. The agency has started to use Government discussion forums to interact with citizens and gather clues that might be relevant to corruption investigations.



<http://ask1.news.cn/>

Digital inclusion is not necessarily social inclusion. Social inclusion through the use of ICTs may occur when social actors use it to promote the quality of life in communities; to express local values and cultures; to enhance the political dynamics within communities, countries and regions; to advocate rights and social campaigns; to denounce injustices and to promote gender equality. The possibilities are endless, yet social inclusion requires consistent policy support from public administration

Figure 5.6 Gender empowerment and e-government development



frameworks. Giving a community with a piece of hardware and software means little. Socially inclusive use of ICTs requires comprehensive education on the use of ICTs to diverse groups including marginalized social or cultural groups, the disabled – and the largest group of all: women. It is a matter of promoting a change of mentality and a change in the way ICT is developed, produced and used.

5.2.2 Unequal benefits for women and men

Women will not have access or benefit equally with men to information and communication technologies, including the Internet, unless specific and targeted gender goals and strategies are implemented in ICT projects.⁵ If women are not directly targeted as beneficiaries of e-governance, they will not be able to access information on government services, health and other issues which they need to support their livelihoods and well-being; nor will they be

able to interact meaningfully with their governments or have a say in local governance forums and decision making. And unless specific efforts are made to meet women’s information needs, they will not find information that is relevant and useful.

Research shows that the percentage of women’s Internet use does not correlate directly with a country’s rate of Internet reach to its population.⁶ If women are not using it, who is? The typical Internet user in developing countries is a male under 35 who is urban based, speaks English and has a good education and income level. Although indicators to measure the ‘gender digital divide’ are few and far between, the United Nations E-Government Survey demonstrated its reality in 2005. Since the 1990s, ICT researchers studying the gender digital divide and working to develop policies to mitigate it have called for more gender-based indicators.

A few examples of ‘best practices’, albeit anecdotal, include women-run telecentres in South Africa, Uruguay and Zambia; use of mobile technologies in Egypt, India and Jamaica; political participation of women by provision of information on elections in the former Yugoslav Republic of Macedonia and the United Republic of Tanzania; and national machineries on gender and ICTs in Malawi.

Despite a few positive examples, ICTs and the Internet in particular remain problematic. On one hand, this technology can be harnessed to promote development projects for women and girls, to combat human trafficking and to disseminate information among women’s groups. ICT can work as an organizing and development tool to promote gender equality. On the other hand, the Internet is widely used to disseminate pornography and violence against women. In the United Kingdom, a May 2006 survey by the Daily Mail found that more than 9 million men (almost 40 percent of the adult male population) as well as 1.4 million women logged on to websites containing pornography.⁸ In the United States, the Secure Computing Corporation estimated 420 million individual pornographic web pages in 2005, up from 14 million in 1998.⁹

In figure 5.6, the UNDP gender empowerment measure is compared with the e-government development index in the 2010 United Nations E-Government Survey.¹⁰ Overall, there is a link

Box 5.4 Women in rural India gain Internet access

Government centres for e-Seva (e-services) have been set up in rural areas across India. The e-Seva effort in West Godavari district, Andhra Pradesh, was initiated to introduce C2C (citizen-to-citizen) and C2G (citizen-to-government) services in rural areas, particularly to women. Internet kiosks or e-Seva centres at the block level were put under the control of women’s self-help groups. Over time, women became active users of the services and technologies offered at the centres, and the kiosks became an important interface for communication and transactions between the local administration and the community. The women managing the e-Seva centres have become information intermediaries and information leaders in their villages, with improved standing and increased influence as a result. Members of the e-Seva collective also travel from village to village with a portable receipt printer to provide utility payment services.⁷

between e-government development and gender empowerment although it would be wrong to conclude from this that gender-sensitive e-government policies are responsible. When telecommunication infrastructure and human capital are removed from the equation, the connection between e-government development and gender empowerment is found to be weak. This suggests that economic and social progress in general leads both to higher levels of e-government development and gender empowerment but that online public services as currently designed may not be contributing much to reduction of inequality between women and men.

Countries that wish to advance on gender equality goals may wish to explore the opportunities offered by e-government in general, and e-participation in particular, to reduce the gender gap.

For ICTs including the Internet, among the first steps are governmental policies addressing:

- Gender-conscious ICT policy development;
- Enactment of legal frameworks to promote ICTs for gender equality;
- Improved cross-jurisdictional coordination to promote gender equality across the actions of public administration institutions;

- Funding for gender equality initiatives using ICTs;
- Closer cooperation between electoral bodies and gender groups.

Information and communication technology, including the Internet, is a powerful enabler of development. It is realizing important efficiency and productivity gains when applied in the private sector, public sector management, health, and education programmes. ICTs are also connecting rural and remote populations to the global knowledge economy and supply chain.¹¹ Yet harnessing the power of the Internet for the good of all citizens is a goal that requires gender-specific action, in the same way that targeted action for gender equality is called for in the Millennium Development Goals.

The trend towards an increasing gender digital divide is alarming, as is and the tremendous difference between the volume of Internet content that denies women's rights in contrast to content that promotes them. These trends are particularly alarming when considering the array of internationally agreed development goals promoting gender equality. ■



Chapter 6

Measuring e-government

6.1	Towards consensus on indicators	94
6.2	Assessing online services and e-participation	95
6.3	Accounting for capacity constraints	96
6.4	Conclusions	97

Reliable and relevant e-government measurement can offer crucial signposts to point policy makers and practitioners in the right direction. Yet, how does one go about measuring e-government given the diversity of approaches? Some important common threads include a country's economic strength, technological development and aggregate level of education. All three of these factors pertain to capacity, and two of them – technology and education – are combined with a direct assessment of the state of national online services to produce the United Nations e-government development index.

Although methodological work on the United Nations e-government survey has helped elucidate some of the issues in e-government measurement, there is no formal agreement on a common international framework. There is also no single view of how such indicators should be designed so that they remain relevant and practical over time.

6.1 Towards consensus on indicators

The United Nations e-government development index is widely recognized as an authoritative measure of public sector capacity to provide electronic and mobile services. It is nonetheless one of several measurement instruments developed by public and private sector organizations to meet their own needs for assessing the state of e-government development.¹ Many of these assessments include a scan of governmental online services in combination with data from national statistical offices, information on e-government policy and indicators of administrative efficiency. The measurement techniques are diverse, yet some common threads emerge. All of these efforts reflect an increasing focus on the user dimension and the demand side of e-government, on outcome and impact measurement, and on connection with national policy objectives.

What's needed is international consensus about how to assess e-government performance. An international task force on e-government indicators was established in 2006 through the

Partnership on Measuring ICT for Development, of which the United Nations Department of Economic and Social Affairs is a member.² The task force will recommend a core set of measures to be collected by governments. The aim is to root out inconsistency in definitions, methodology, reporting and monitoring of e-government development across countries and levels of government, while supporting international benchmarking efforts. A draft list of core indicators under consideration by the task force is shown in table 6.1.

There are substantial challenges to monitoring the efficacy of e-government development. Most of the statistics are derived from supply side indicators and often by website assessments alone. Little information is yet available on the demand side of e-government. Few surveys exist that would indicate 'how' citizens use these services and 'what' they see as maximizing public value.

Other significant questions for measurement experts are how to define the scope of governmental agencies, how to handle the issue of outsourced government functions, and how to accommodate heterogeneity among national and local institutions. Collecting internationally comparable data at the local level – where it even exists – is especially difficult due to differences in political and economic systems. A public function that is highly centralized in one country may be highly decentralized in another.

Another challenge relates to the pace of technological innovation, which needs to be taken into consideration when designing a framework for measuring e-government and monitoring its effects. Information technology continues to evolve rapidly. Five years ago, there were about 150 million fixed broadband subscribers in the world, mostly in developed regions; in 2009, there are some 500 million. The number of mobile cellular subscribers worldwide jumped from 1.3 billion in 2003 to 4.1 billion only five years later, with exponential growth in development countries. Governments trying to keep pace with technology may find themselves having to reconfigure services for emerging media. To get a clear picture of e-government development, international standards will also need to keep pace.

Table 6.1 Task Group on E-Government of the Partnership on Measuring ICT for Development – draft list of core e-government indicators

Capacity indicators	
EG1	Percent of staff in government institutions with a computer, disaggregated by gender
EG2	Percent of staff in government institutions with Internet access at the office, disaggregated by gender
EG3	Percent of government institutions with websites and/or databases
EG4	Percent of government institutions with corporate networks (LAN, intranet, extranet)
EG5	Percent of government institutions offering mobile phone technology accessible platforms
EG6	Percent of ICT personnel in government institutions, disaggregated by gender
EG7	Number of intrusions and hacking of networks and websites of government institutions
EG8	Percent of spam messages per total email messages received
EG9	Percent of expenditure on ICT per total expenditure of government institutions
EG10	Percent of ICT budget spent on institutional capacity-building and human resource development
EG11	Percent of government institutions with access to the Internet by type of access (narrowband, fixed broadband, mobile broadband)
Usage indicators	
EG12	Percent of open source software vis-à-vis proprietary
EG13	Percent and type of applications used, e.g. word processing, accounting, data base, website
EG14	Percent of staff in government institutions who are trained on use of ICTs, disaggregated by gender
Transformation indicators	
EG15	Percent of government institutions providing services online and type of services; e.g. retrieval and printing of online forms, use of interactive online forms, online bids, payment of bills, tax filing applications, company registration, car registration, voting, public grievance systems, online feedback
EG16	Percent of requests processed using ICTs vis-à-vis overall number of requests
EG17	Percent of requests processed online vis-à-vis overall number of requests processed using ICTs
EG18	Degree of satisfaction of e-government service users, disaggregated by gender

Source: Partnership on Measuring ICT for Development (2009)

Ultimately, the challenge is to assess impact. A few studies exist about the utility citizens derive from e-government, mostly relating to the performance of government in developed countries, but even less is known about the impact of e-government programmes on national development goals. E-government can serve as a conduit to strengthen the relationship between government and society, but in what way and why?

6.2 Assessing online services and e-participation

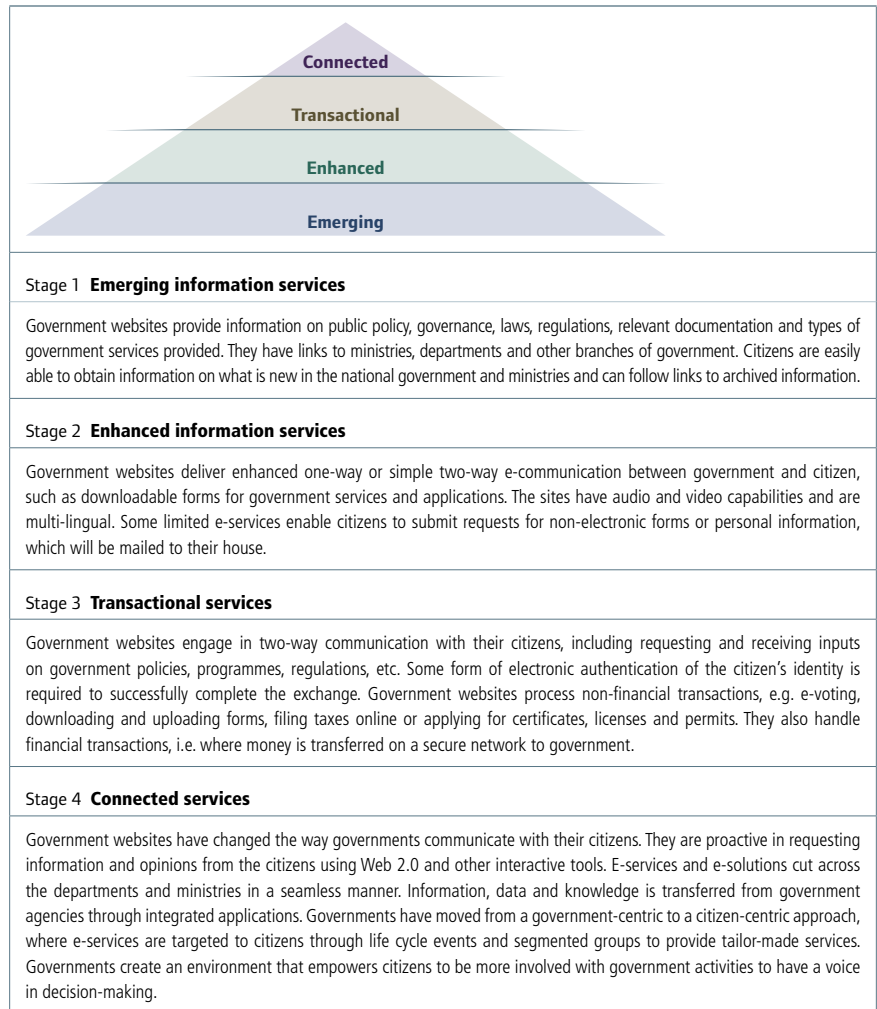
Online services

Evaluation of the quality, scope and utility of online services is one of the more straightforward aspects of e-government performance measurement. On the surface, indicators of electronic and mobile service delivery are conceptually easy. Does the government provide information on essential services? Is there a search feature and a site map available on every website? Can public services be accessed online? Are these e-services integrated with one another?

In practice, evaluation of online services is never that simple. Just as there is tremendous complexity in public performance measurement in general, so too are there substantial definitional and methodological challenges in monitoring and evaluating the efficiency and effectiveness of public service delivery through online media. Even an innocent-sounding question about the presence of a site map requires a considered response. After all the boundaries of a website are not always clear, nor is there is any standard of what a site map is, where it should appear and how it should be labelled.

Any serious effort at understanding the state of governmental online services calls for (1) careful consideration of the types of interaction expected among citizens, businesses and governmental actors and (2) some assumptions about minimally acceptable interface design across a range of technologies. Evaluation methods need structure, simplification and flexibility in evaluation methods, given the diversity of contexts and options for service provision.

Box 6.1 The four stages of online service development



The online services index is one of three components of the United Nations e-government development index. It attempts to capture a country's performance in a single internationally-comparable value using a four-stage model of online service maturity. The model assumes, based on extensive observation and reflection among experts, that countries typically begin with an emerging online presence with simple websites, progress to an enhanced state with deployment of multimedia content and two-way interaction, advance to a transactional level with many services provided online and governments' soliciting citizen input on matters of public policy, and finally to a connected web of integrated functions, widespread data sharing, and routine consultation with citizens using social networking and related tools.

E-participation

Assessment of e-participation is an area that requires particular attention. It is less well-defined than the quality, scope and utility of online service delivery but no less important to the realization of citizen-centric governance. This is particularly relevant at the local level where individuals are most likely to come into contact with public agencies. To what degree are governments providing supporting information, actively consulting with citizens through online channels, and involving them in decision-making as a matter of course? Each of these aspects of citizen-centric governance must be defined in concrete, measurable terms, and corresponding data collected, in order to monitor the relationship between online services and citizen empowerment.

The e-government development index is complemented by an e-participation index. This index attempts to bring some order to measurement of e-governance by positing the relevance of three factors in citizen engagement: electronic information dissemination, electronic consultation and electronic participation in decision-making.

Electronic information dissemination entails communication among government, citizens and businesses that supports policy-making. For citizens to become engaged in public policy, laws and regulations must be readily accessible, strategies and policies explained, and options under consideration clearly presented. This must be done with regard for inclusion of all segments of society, including rural or isolated areas. This information could be distributed via online newsletters, forums, blogs, community networks, text messaging, email, open data or other services.

Electronic consultation entails communication between government, citizens and businesses at the initiative of the government itself. For consultation to be effective, and for citizens to trust the outcome, feedback from citizens needs to be acknowledged with an appropriate response. For example, policy makers may report on the outcome of dialogue with citizens by summarizing the positions of various stakeholders and announcing a way forward. Relevant e-government tools include polls, surveys, chat rooms, blogs, social networks,

newsgroups and other interactive services that facilitate engagement. Online consultation might also be initiated by citizen groups as in the case of electronic petitions.

Electronic participation in decision-making entails communication between citizens and government that results in direct citizen input into public policy. Governments elicit feedback from citizens and businesses on government proposals. Alternatively, citizen's groups might introduce their own proposals for creating or amending public policies or programmes to be taken up by political representatives and government officials.

6.3 Accounting for capacity constraints

E-government development is often impeded by constraints in public sector capacity. Such limitations often originate in the fragmented information systems that often accompany organizational complexity and, to a lesser degree, in deficiencies in ICT skills in the public sector work force. These problems are by no means the exclusive domain of developing countries. Indeed, early adopters of information technology in regions with expansive public institutions and programmes may find themselves called upon to integrate back office systems for improved e-government performance in the face of entrenched organizational structures designed with precisely the opposite purpose in mind, to delegate and decentralize administrative authority. Another common constraint in the public sector is the need to change mindset and behaviour, a process that can be enabled by appropriate skills development and institutional incentives to address some of the risk associated with implementing individual e-government initiatives.

Recognizing the importance of a supportive institutional framework, the United Nations E-Government Survey includes an indicator in its development index to capture the existence of a government-wide chief information officer or equivalent post for coordinating national e-government policy. This is a start. Future work on measuring e-government capacity within the public sector might usefully expand beyond ICT infrastructure

and human resource issues to cover, where feasible, adherence to recommended practice in design of institutional machinery, laws, regulations, policies and standards.

Constraints in public sector capacity extend to work processes and the need to measure the connectedness of public agencies behind the scenes. This would be a way of gauging a government's capacity to respond to citizen preferences for simplified access to online services. Despite the association between efficient administration and public satisfaction levels, work on measurement of ICT within the public sector has so far been quite limited. A newly developed set of indicators should assess the internal processes, systems and organizational arrangements required to support efficient e-government functions and better service delivery.

Capacity constraints are very much present on the demand side of the e-government equation as well. Here questions of national ICT development, human capital and service delivery preferences come into play. A general picture of a population's ability to access and take advantage of online services is provided by telecommunication infrastructure indicators that cover Internet usage, diffusion of personal computers, main telephone lines, and number of mobile cellular and fixed broadband subscribers – along with literacy and education levels.

Two factors are missing from the analysis in the Survey and its indexes. First, the national capacity indicators do not provide breakdowns by population segment. This makes it difficult to assess whether certain groups are at a particular disadvantage when it comes to accessing public services over the Internet. Telecommunication infrastructure data disaggregated by sex is unavailable in most countries, for example, and is not part of the official statistics collected by the International Telecommunication Union. The same is true for different age, language, cultural and income groups, though some of this information might be derived from geo-referencing data at the sub-national level.

Second, usage of e-government services by citizens is absent from most e-government measurement frameworks. The importance of accounting for demand is well-understood by e-government experts, especially when discussing global or regional aggregates. Ways to capture demand for e-government have been suggested by the task force of the Partnership on Measuring ICT for Development. This could be accomplished by measuring the percent of requests processed using ICT as a function of the overall number of requests, the percent of requests processed online as a function of the overall number of requests processing using ICT, and the degree of satisfaction of e-government service users. None of this data would be easy to collect without a concerted effort on the part of governments.

6.4 Conclusions

A global agreement on a consistent framework for measuring e-government development is called for. Such a platform will likely avoid inconsistent meanings and interpretation by national and local governments, allow for the more effective adoption of best practice solutions from around the world and advance the international comparison of e-government usage and development.

Stakeholders, particularly at the global level, need to continue to support e-government capacity-building at the national and local levels. At the same time, model surveys should continue to be followed since they form an important source of international comparability in e-government development. Surveys such as this one by the United Nations Department of Economic and Social Affairs provide a comparative global picture of ICT in the public sector. Ongoing cooperation in performance measurement could take many forms, from articulation of e-government principles, adoption of open standards and elaboration of indicators, to information sharing, development of interoperable systems, and multilateral technical assistance. ■



Notes

Chapter 1

- 1 United Nations (2009i).
- 2 Gros and Roth (2009).
- 3 Gros and Roth (2009).
- 4 See Welch, Hinnant and Moon (2005), Tolbert and Mossberger (2006), Freed (2009), Shim and Eom (2009), and Lazer, Neblo, Esterling and Goldschmidt (2009).
- 5 Parent, Vandebeek and Gemino (2005).
- 6 Weil (2008).
- 7 Brito and Okolski (2009).
- 8 Hameed (2005).
- 9 Kaplan, Morillas, Rusch and Baxandall (2009).
- 10 Brito and Okolski (2009).
- 11 Pearson's $r = 0.008$, sig. n.s., $n = 50$.
- 12 See, for instance, Baxandall and Magnuson (2008).
- 13 Perez and Hernandez (2007).
- 14 IMF (2009c).
- 15 Pratchett, Durose, Lowndes, Smith, Stoker and Wales (2009).
- 16 For a brief description of La Plata's experience see Verclas (2009).
- 17 In the framework of this study, the concept of online "provision of service" is broader than the simple automation of processes and delivery of traditional government services by means of ICT. Among others, we refer to initiatives that foster collaboration, participation and transparency.
- 18 An initiative of the Pew Charitable Trusts in conjunction with the Sunlight Foundation, see <http://subsidyscope.com/projects/bailout/>.
- 19 See, for instance, TechCrunch (2009).
- 20 See, for instance, Eups20 (2009).
- 21 Here understood as "information that has been organised to allow identification and separation of the context of the information from its content". See The New Zealand Government State Services Commission (2002).
- 22 Robinson et al. 2009.
- 23 Launched May 2009, see <http://www.data.gov/>.
- 24 James (2009).
- 25 Montanez (2009).
- 26 For instance, the contract for the second version of the United States recovery.gov website has been valued at \$18 million, see GSA (2009).
- 27 Robinson, Yu, Zeller and Felten (2009).
- 28 Open Congress is a legislative monitoring website conceived by the Sunlight Foundation, a non-governmental actor, see <http://www.opencongress.org/>.
- 29 See Meu Parlamento website, <http://meuparlamento.com.br/>.
- 30 See Apps for Democracy website, <http://www.appsfordemocracy.org/>.
- 31 See My Society website, <http://cee.mysociety.org/>.
- 32 Haque (2001).
- 33 Brito (2008), Perez (2008).

Chapter 2

- 1 Within a time period that is appropriate for dealing with pressing competition (explicit or implicit) that may be arising on a number of fronts at roughly the same time.
- 2 On complexity in breadth vs. in depth, see Wang and von Tunzelmann (2000). Complexity in breadth is sometimes termed 'relational complexity', while complexity in depth can be called 'cognitive complexity'.
- 3 Guida and Crow (2008).
- 4 Norris (2001).
- 5 Norris (2001).
- 6 Aldrich, Bertot and McClure (2002).
- 7 Robinson, Yu, Zeller and Felten (2009).
- 8 Pärna and von Tunzelmann (2007).
- 9 On the urban electricity systems, see Hughes (1983); for the national 'grid' system, see Hannah (1979); for railways, see the recent study by Mark Casson (Casson, 2009).
- 10 Coglianesi (2005).
- 11 Dugdale, Daly, Papandrea and Maley (2005).
- 12 Coglianesi (2005).
- 13 Crowe and Meade (2008).
- 14 Ward (1996).
- 15 Clift (2004).
- 16 The Chief Information Officer of the Obama administration is also the first CIO in United States history to be a strong supporter of the democratization of data. Refer to the website <http://www.data.gov/> for their recent efforts to open governmental data to citizens.
- 17 These terms are associated with Alan Greenspan, Chairman of the United States Federal Reserve (1987-2006), who coined 'irrational exuberance' in a speech in 1996, though the term was popularized by the economist Robert Shiller in his book with that title (Shiller, 2000). 'Social capabilities' was a phrase utilized in a more positive setting by the late Moses Abramovitz in his paper, 'Catching up, forging ahead and falling behind' (Abramovitz, 1986).
- 18 Lo (2008).
- 19 Greenspan (2008).
- 20 Compare: Akerlof and Shiller (2009).
- 21 For instance, Colander, Follmer, Haas, Goldberg, Juselius, Kirman, Lux and Sloth (2009).
- 22 Lawson (2009).
- 23 Gowan (2009).
- 24 The reference implied here is to the seminal study by Frank H. Knight (Knight, 1921). Andrew C. Stirling (Stirling, 2007) has suggested a 2x2 matrix of 'incertitude', pitting knowledge about outcomes against knowledge about likelihoods. Knight's category of 'risk' does well on both counts – the outcomes are widely recognized, and it is possible to assign a probability to each outcome. Knight's case of 'uncertainty' is far harder to agree on a probability but the outcomes are still well understood. With 'ignorance', this latter is also lacking.
- 25 These were explicitly stated to lie outside our remit. Although the beginning of the crisis is conventionally linked to the September 2008 collapse of investment bankers Lehman Brothers, in fact it began earlier. The dismembering of the subprime mortgage market, for instance, began at Lehman's more than a year before.
- 26 Geithner (2008).
- 27 See also Krugman (2008).
- 28 Gowan (2009).
- 29 Montgomery Investment Technology (2002).
- 30 Blankfein (2009).
- 31 Refer to the 'Private Fund Investment Advisers Registration Act of 2009' (July, 2009), see United States Department of Treasury (2009b).
- 32 Lo (2009).
- 33 Ross (2009).
- 34 Some of these features would be changed by the incoming reform of the regulatory regime.
- 35 Perez (2002).
- 36 Melvin, Menkhoff and Schmeling (2009).
- 37 Lo (2008).
- 38 Blankfein (2009).
- 39 Blankfein (2009).
- 40 Abramovitz (1986).
- 41 von Tunzelmann (2009).
- 42 The earlier of the two principal studies by Wesley M. Cohen and Daniel A. Levinthal (Cohen and Levinthal), especially, stresses this point. See also the yet more widely cited subsequent paper, 'Absorptive capacity' (Cohen and Levinthal, 1990).
- 43 Cohen and Levinthal (1994).
- 44 One can talk of a 'value network' when translating the various supply chains into functions, but not of a specific 'value chain'. The terminology is a source of great confusion in the literature, a confusion that dates back to some of the original contributions by Porter. See Porter (1985).
- 45 The phrase 'dynamic competition' was popularized by Schumpeter early in the 20th century; see Schumpeter (1934).
- 46 Penrose (2009).
- 47 In the case of governments, 'absorptive capacity' more or less equates to evidence-based policy learning.
- 48 Lo (2009).
- 49 Colander, Follmer, Haas, Goldberg, Juselius, Kirman, Lux and Sloth (2009).
- 50 Lawson (2009). Hodgson (2009).
- 51 Von Tunzelmann (2009).
- 52 Mervyn A. King, speech to Scottish business organizations, 20 October 2009: "To paraphrase a great wartime leader, never in the field of financial endeavour has so much money been owed by so few to so many. And, one might add, so far with little real reform."
- 53 United States Department of Treasury (2009a).
- 54 Creative accounting refers to accounting practices that may follow the letter of the rules of standard accounting practices, but certainly deviate from the spirit of those rules. See Griffiths (1986).
- 55 Ross (2009).
- 56 IMF (2009a).
- 57 Blankfein (2009).
- 58 Blankfein (2009).
- 59 Krugman (2008).
- 60 Ross (2009).
- 61 For example, Hooghe and Marks (2003).

62 According to the OECD (2009), in their economic stimulus packages, countries' investment in infrastructure in terms of shares in GDP are 0.82 percent for Australia, 1.27 percent for Canada, 0.50 percent for Chile, 0.48 percent for Finland, 0.24 percent for France, 0.5 percent for Germany, 0.16 percent for Norway, 0.27 percent for Sweden, 0.072 percent for Poland, 0.03 percent for Portugal and 0.70 percent for USA. Interestingly, only Japan (among a similar though not identical group of countries) specifically mentions "promotion of e-government" among its ICT targets.

63 Tao, Cheung, Painter and Li (Eds.) (2009).

64 IMF (2009b).

65 The phrase was popularized as a possible explanation of why Great Britain fell behind during the so-called Second Industrial Revolution after 1870, rather than leading it, as it had led the previous wave.

66 In the Economist Intelligence Unit's widely supported e-readiness index for 2009, out of a total of 70 countries reported, New Zealand ranked 11th overall and Estonia 24th, both well ahead of their real GDP per capita rankings. New Zealand scored more highly than countries such as the United Kingdom, France, Switzerland or Germany, while Estonia ranked above Spain, Italy, etc. The United States was the only large country in the top 8, ranking 5th in 2009.

67 Fransman (ed.) (2006).

68 Guida and Crow (2008).

69 Such a view is sharply at odds with that of Milton Friedman on the role of 'positive economics'. See Friedman (1953).

70 Blankfein (2009).

71 Krugman (2008).

72 EIU (2009).

Chapter 3

1 United Nations (2009i).

2 United Nations (2009e).

3 Australian Government's latest report on the country's e-government services entitled, "Interacting with Government", shows that the Internet has replaced contact in person and by telephone as the most common way people has made their last contact with government in 2008, mainly for convenience reasons, see AGMIO (2008).

4 United Nations (2003).

5 Goh (2009).

6 OECD (2009a).

7 ITU (2009).

8 Information Society Commission (2003).

9 Osimo, Centeno and Burgelman (2007).

10 ILO (2009).

11 UNDP (2009a).

12 Devanathan (2008).

13 See Royal Court Affairs website, <http://www.rca.gov.om/>.

14 World Summit Award (2009).

15 Hinsberg (2009).

16 See Losing Your Job website, <http://www.losingyourjob.ie/>.

17 See Autravail website, <http://www.autravail.be/>.

18 New York State Department of Labor (2009).

19 UNESCO (2009).

20 Sabhavasu (2009).

21 Global Research (2009).

22 UNESCO (2008).

23 Asian Development Bank (2009b).

24 Ablett and Slengesol (2000).

25 See Student Finance website, <http://www.studentfinance.ie/>.

26 Unwin (2004).

27 United Nations (2009g).

28 Trucano (2009).

29 Pouezevara and Khan (2007).

30 The Guardian Weekly (2009).

31 Gaible (2008).

32 United Nations (2009d).

33 United Nations (2009j).

34 United Nations (2009f).

35 United Nations (2009b).

36 World Bank (2009a).

37 United Nations (2009a).

38 Sirimanne (2009).

39 Lianyungang City Women's Federation (2009).

40 Kashyap (2009).

41 Hordosch (2009).

42 World Bank (2009b).

43 Cole (2009).

44 Howell (2009).

45 See the e-Health page on ICT Qatar, <http://www.ict.gov.qa/output/Page6.asp>.

46 Looking Local (2009).

47 World Bank (2009c).

48 Jose and Accra (2009).

49 Environmental Systems Research Institute (2009).

50 Asian Development Bank (2009a).

51 The Australian (2009).

52 United Nations (2009c).

53 Environmental Protection Agency (2004).

54 UK Department for Communities and Local Government (2008).

55 German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (2009).

56 OECD (2009b).

57 OECD (2009c).

58 Kim (2009).

Chapter 4

1 The United Nations designation of least developed countries is given based on a review and recommendation of the Committee for Development Policy, a subsidiary body of the Economic and Social Council. The current list of least developed countries includes 49 countries, 33 in Africa, 15 in Asia and the Pacific, and 1 in the Caribbean.

Chapter 5

1 W3C Consortium (2009).

2 See World Economic Situation and Prospects 2010 and World Economic Situation and Prospects Monthly Briefing, April 2009.

3 United Nations (2009k).

4 Ibid.

5 Hafkin and Hambley (2002).

6 Huyer, Hafkin et al. (2005).

7 Nath (2006).

8 Daily Mail (2006).

9 Third Way (2005).

10 UNDP (2009b).

11 World Bank (2009d).

Chapter 6

1 United Nations (2009k).

2 The Partnership on Measuring ICT for Development is composed of 11 international organizations: the International Telecommunications Union, UN Department of Economic and Social Affairs, UN Conference on Trade and Development, UNESCO Institute for Statistics, World Bank, UN Economic Commission for Africa, UN Economic Commission for Latin America and the Caribbean, UN Economic and Social Commission for Asia and the Pacific, UN Economic and Social Commission for Western Asia, the Organization for Economic Cooperation and Development and the Statistical Office of the European Communities.

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Statistical annex



Statistical annex



Survey methodology	109
Data tables	114
Regional groupings	125

Survey methodology

Online service index	110
Challenges in reviewing a country's online presence	110
What's new?	111
Telecommunication infrastructure index	113
Human capital index	113
Supplementary e-participation index	113

The United Nations e-government development index (EGDI) is a comprehensive scoring of the willingness and capacity of national administrations to use online and mobile technology in the execution of government functions. It is based on a comprehensive survey of the online presence of all 192 Member States. The results are tabulated and combined with a set of indicators embodying a country's capacity to participate in the information society, without which e-government development efforts are of limited immediate utility.

The e-government development index is not designed to capture e-government development in an absolute sense. Rather, the index rates the performance of national governments relative to one another. The maximum possible value is one and the minimum is zero. Though the basic model has remained constant, the precise meaning of these values varies from one survey to the next as understanding of the potential of e-government changes and the underlying technology evolves.

Mathematically, the EDGI is a weighted average of three normalized scores on the most important dimensions of e-government, namely: scope and quality of online services, telecommunication connectivity, and human capacity. Each of these sets of indexes is itself a composite measure that can be extracted and analysed independently:

$$\begin{aligned}
 EGDI = & (0.34 \times \text{online service index}) \\
 & + (0.33 \times \text{telecommunication index}) \\
 & + (0.33 \times \text{human capital index}) \\
 & \hline
 & \textit{The United Nations e-government development index}
 \end{aligned}$$

Online service index

To arrive at a set of online service index values, the research team assessed each country's national website as well as the websites of the ministries of education, labour, social services, health and finance. Associated portals and subsidiary websites were considered part and parcel of the parent sites and taken into consideration when assigning values to survey responses. Among other things, the national sites were tested for a minimal level of Web content accessibility as described in the Web Content Accessibility Guidelines of the World Wide Web Consortium.

The survey itself has four sections corresponding to the four stages of e-government development. The first of these includes questions relating to attributes that would be considered typical of an emerging online presence, the second to an enhanced presence, the third to a transactional presence and the fourth to a connected presence. Almost all questions in the survey call for a binary response of yes or no, with "yes" given one point and "no" zero. Exceptions include a small number of questions designed to capture data on the number of forms and e-services available. These are worth up to ten points each.

The value for a given country is equal to the total number of points scored by that country less the lowest score for any country divided by the range of values for all countries in the survey. For example, if country "x" were to score 233, with the lowest score of any country equal to 20 and the highest equal to 403, then the online services value for country "x" would be:

$$\text{Online service index (country "x")} = \frac{(233-20)}{(403-20)} = 0.5561$$

The research team followed a citizen-centric approach to assessment of online services, among other things by putting themselves in the place of the average user. Thus, responses were generally based on whether the relevant feature(s) could be found and accessed easily, not whether they in fact exist. As the number of national websites grows, this becomes increasingly important. While it is possible, although implausible, to spend hours browsing a government website meticulously for all content and features, this approach misses the key point that for information and services to be "usable" they must be readily discoverable by the intended beneficiaries.

The actual time spent by the survey team on any given country assessment diverged widely depending on how varied the online presence was, the degree of user-friendliness and the amount of content offered. A researcher would typically review one or two countries per day. Once completed, the assessment would be validated by a senior researcher who would further confer with the team leader in cases of doubt. A number of countries were selected at random for a full reassessment, as were anomalous results that appeared to be inconsistent with prior year trends. Each site was reviewed by at least two researchers, one or more of whom had multiple years' experience in assessing online services of the public sector.

Challenges in reviewing a country's online presence

Identification of the national website

All Member States were invited to supply the addresses of their own top-level national and ministerial websites to be used as a starting point by the survey team. Responses could be submitted by postal mail, email, fax or online. Approximately thirty per cent of Member States responded. In cases where no response was received, the survey team used a variety of search engines to locate the most relevant sites.

Where more than one entry point for a national or ministerial site was identified, the research team would evaluate features on all relevant sites provided links were clearly indicated. If no sites were found that could reasonably be classified as the national site, for example emanating from the Head of Government, zero points were accorded for related questions. This has become less and less common since the survey was introduced in 2003.

Some countries do not offer certain public services at the federal level, but rather at the regional level. It should be clearly indicated that no country is penalized for offering a service at the regional as opposed to the federal level per se. In fact, when the issue arises researchers tend to be inclusive in assessing the matter as long as the information and/or service can be found from the national level.

A more difficult problem arises when not only a specific service is located at the local level but when the entire ministerial functions are altogether

missing at the national level. If researchers are unable to locate a ministry as per the above described method, then the final step was to find out whether the country in question actually has such a ministry at the national level or whether the functions might be locally administered.

Identification of ministerial websites

Another dilemma, albeit a minor one, arises in those countries where one or more ministries are combined into a single entity. Most notably, a fair number of countries have a ministry of health and social welfare or similar institutional arrangement. In these cases, the ministry is assessed as usual and its score simply duplicated for each of the covered ministries. Similarly, a very small number of countries have combined three ministries, namely, labour, social and health ministries into one. Here the score would be multiplied by three.

Finding and selecting the appropriate site(s) at the ministerial level has been in the past a typically easier task because most national sites provide links to the ministries, often under a clearly defined header or subsection. However, as the use of the Internet has expanded, so too has the growth of government websites in general and programme sites in particular. This year, researchers have noted a significant increase in the number of programme and subject specific sites. If these separate sites were tightly integrated and easily linked to an official ministry site, they were scored for specific features. However, if they were not tightly integrated, then those separate sites were not scored.

Language limitations

The research team was fully equipped to handle the six official languages of the United Nations, namely Arabic, Chinese, English, French, Russian and Spanish. However, as in previous survey cycles, the team went well beyond this mandate and made every effort to review each country in the official language of the country or, where that was not possible, in another of the languages available on the site. Translators provided assistance as necessary. It is acknowledged that lack of linguistic parity on multilingual sites may have introduced errors in scoring on occasion.

What's new?

The methodological framework for the United Nations e-government development index has remained consistent across survey periods. At the same time, survey questions have been adjusted to reflect evolving knowledge of best practices in e-government, changes in technology and other factors, and data collection practices have been periodically refined.

In the current round, 25 questions were added to the survey instrument, 29 questions were modified and 16 questions were removed. Greater emphasis was given to online services and e-participation than in previous years with more granular questions about the type of services provided. This included availability of mobile applications, Web 2.0 tools, use of online services by citizens, and the extent to which governments are integrating back-office operations. The result was a significantly enhanced survey instrument with a wider range of point distributions that better reflects the relative differences in levels of e-government development among countries.

Extension of the survey window

The survey window in 2003 and 2005 was sixty days. In 2008, this was shortened to thirty days to order to come closer to capturing a snapshot in time. This policy proved to be difficult for two reasons. First, there was little gained in the way of understanding either about the situation in individual countries or about regional and global trends by constricting the study in this way. Indeed, researchers were instructed to try connecting to the relevant government websites on two different dates, but not more than that, in order to get a fuller picture of availability while maintaining the citizen-centric perspective. Second, shortening of the window proved to be very difficult for the team to accommodate the amount of planning, research and validation work required. Therefore, both for quality assurance purposes and as a practical matter, the survey window was extended to a full seventy-five days.

Enhanced citizen-centric approach

The research team was instructed to enforce the citizen-centric approach even more rigorously than

in previous surveys. If features could not be found easily, quickly and intuitively, then a site would score poorly. Researchers were asked not to make extraordinary efforts to seek out information and services wherever they might be. As noted above, the question behind the questions was always, “Can the user find it easily?” as opposed to, “Does it exist somewhere on the site?”

Identification of sites for review

The identification of national and ministry websites for evaluation has always been one of the most difficult issues facing research teams. Over the course of the survey, researchers typically evaluate more than 1,000 top-level web sites as well as their constituent sub-sites. In past years, the team would spend a significant amount of time locating and verifying top-level Web addresses before initiating a country review. This time, the United Nations Department of Economic and Social Affairs invited Member States to supply the addresses of the national and ministry websites that should be included in the survey. Although the response from Member States was incomplete, and additional searching was required, the practice was found to be helpful both to Member States and to the Secretariat, and will be continued in future.

Greater scrutiny of sites

Researchers were instructed and trained to take advantage of the extended survey window to scrutinize sites even more closely than in past years with the caveat that the citizen-centric approach should prevail. There has been a geometric increase in the number of websites to be assessed since the last round as well as in the amount of information and number of services available and degree of sophistication. This undoubtedly reflects both the value of e-government in public administration reform and the rapid evolution of information and communication technology. At the same time, the team had to maintain a careful balance between in-depth research and consideration of usability to ensure the most reliable scores possible, especially for countries with a poorly designed but expanding web presence.

Emphasis on interactive, transactional and integrated services

Greater weight was given to development of participatory and integrated transactional services than in the past as a reflection of the need to promote inclusion and narrow the digital divide. Countries with an Internet penetration rate greater than or equal to 50 percent could receive up to 25 additional points for the use of blogs, discussion forums, online chat features, bulletin boards and social networking tools, online voting and petitioning, and calendars of e-participation events, while countries with an Internet penetration rate below 50 percent but above 30 percent were eligible to receive up to 10 additional points. A further 5 points were awarded to countries having an Internet penetration rate of at least 30 percent if integrated transactional services were provided through the national portal.

International research team

A web-based information management system was used by an international team of researchers for managing the survey effort and tracking results. Team leaders conducted training online, held virtual help sessions, and worked in tandem with country researchers and language specialists as needed to produce high quality results. During recruitment, a premium was also placed on proficiency in multiple languages to promote consistency in scoring. The smaller team and online management enabled senior researchers to follow the process closely and reinforce adherence to common data collection standards. A second quality assurance team within the United Nations Department of Economic and Social Affairs validated the findings through a series of spot checks and verification of values outside the expected range.

Improved quality assurance

Data received from the primary research team were validated by a second-level quality assurance group to ensure that sites were rated with maximum objectivity and accuracy. The quality assurance procedure resulted in adjustment of scores for a number of countries. The United Nations Department of Economic and Social Affairs is committed to ensuring impartiality and rigour in its survey methods and will continue to enhance quality assurance procedures in future.

Telecommunication infrastructure index

The telecommunication infrastructure index is a composite of five indicators: number of personal computers per 100 persons, number of Internet users per 100 persons, number of telephone lines per 100 persons, number of mobile cellular subscriptions per 100 persons and number of fixed broadband subscribers per 100 persons. The International Telecommunication Union was the primary source of data in each case.

Each of these indicators was normalized by taking its value for a given country subtracting the lowest value for any country in the survey and dividing by the range of values for all countries. For example, if country “x” were to have 36.69 Internet users per 100 inhabitants, with the lowest value of any country equal to 0 and the highest equal to 88.87, then the normalized value of this indicator for country “x” would be given by:

$$\text{Internet penetration index (country "x")} = \frac{(36.69-0)}{(88.87-0)} = 0.4129$$

The telecommunication infrastructure index for country “x” is then the simple arithmetic mean of each of the five normalized indicators derived in this way:

$$\begin{aligned} \text{Telecommunication infrastructure index} = & \\ & \text{Average (personal computer index} \\ & + \text{Internet user index} \\ & + \text{telephone line index} \\ & + \text{mobile subscription index} \\ & + \text{fixed broadband index)} \end{aligned}$$

Human capital index

The human capital index is a composite of two indicators: adult literacy rate and the combined primary, secondary, and tertiary gross enrollment ratio. The United Nations Educational, Scientific and Cultural Organization was the main source of data in both cases. Gaps were completed to the extent possible using data from the 2009 UNDP Human Development Report.

The two indicators were normalized by taking their values for a given country subtracting the lowest value for any country in the survey and dividing by the range of values for all

countries. For example, if country “x” were to have an adult literacy rate of 66.8 per 100 inhabitants, with the lowest value of any country equal to 28.7 and the highest equal to 99.5, then the normalized value of this indicator for country “x” would be given by:

$$\text{Adult literacy index (country "x")} = \frac{(66.8-28.7)}{(99.5-28.7)} = 0.5381$$

The human capital index for country “x” is then the weighted arithmetic mean of the two normalized indicators derived in this way with adult literacy assigned a weight of 0.6667 and gross enrollment 0.3333:

$$\begin{aligned} \text{Human capital index} = & \frac{2}{3} \times \text{adult literacy index} \\ & + \frac{1}{3} \times \text{gross enrollment index} \end{aligned}$$

Supplementary e-participation index

The e-participation questions expand the survey by emphasizing quality in the connected presence stage of e-government. These questions focus on the use of the Internet to facilitate provision of information by governments to citizens (“e-information sharing”), interaction with stakeholders (“e-consultation”) and engagement in decision-making processes (“e-decision making”). A country’s e-participation index value reflects how useful these features are and the extent to which they have been deployed by the government compared to all other countries. The purpose of this measure is not to prescribe any particular practice, but rather to offer insight into how different countries are using online tools to promote interaction between citizen and government, as well as among citizens, for the benefit of all.

The e-participation index calculated in this way is then normalized by taking their values for a given country subtracting the lowest value for any country in the survey and dividing by the range of values for all countries. For example, if country “x” were to have an e-participation score of 30, with the lowest value of any country equal to 0 and the highest equal to 45, then the normalized index value for country “x” would be given by:

$$\text{E-participating index (country "x")} = \frac{(30-0)}{(45-0)} = 0.6667$$

Data tables

E-government development index

Rank	Country	Index value	Of which		
			Online service component	Telecommunication infrastructure component	Human capital component
1	Republic of Korea	0.8785	0.3400	0.2109	0.3277
2	United States	0.8510	0.3184	0.2128	0.3198
3	Canada	0.8448	0.3001	0.2244	0.3204
4	United Kingdom	0.8147	0.2634	0.2364	0.3149
5	Netherlands	0.8097	0.2310	0.2530	0.3257
6	Norway	0.8020	0.2504	0.2254	0.3262
7	Denmark	0.7872	0.2288	0.2306	0.3278
8	Australia	0.7863	0.2601	0.1983	0.3278
9	Spain	0.7516	0.2601	0.1683	0.3231
10	France	0.7510	0.2321	0.1965	0.3225
11	Singapore	0.7476	0.2331	0.2107	0.3037
12	Sweden	0.7474	0.1792	0.2482	0.3200
13	Bahrain	0.7363	0.2483	0.1932	0.2948
14	New Zealand	0.7311	0.2170	0.1864	0.3278
15	Germany	0.7309	0.1867	0.2295	0.3146
16	Belgium	0.7225	0.2126	0.1880	0.3218
17	Japan	0.7152	0.2288	0.1730	0.3134
18	Switzerland	0.7136	0.1511	0.2537	0.3088
19	Finland	0.6967	0.1630	0.2059	0.3278
20	Estonia	0.6965	0.1705	0.2070	0.3190
21	Ireland	0.6866	0.1695	0.1894	0.3277
22	Iceland	0.6697	0.1349	0.2110	0.3238
23	Liechtenstein	0.6694	0.1781	0.1786	0.3127
24	Austria	0.6679	0.1619	0.1893	0.3167
25	Luxembourg	0.6672	0.1295	0.2355	0.3021
26	Israel	0.6552	0.1986	0.1430	0.3136
27	Hungary	0.6315	0.1716	0.1432	0.3167
28	Lithuania	0.6295	0.1641	0.1456	0.3198
29	Slovenia	0.6243	0.1360	0.1659	0.3224
30	Malta	0.6129	0.1597	0.1605	0.2927
31	Colombia	0.6125	0.2418	0.0799	0.2908
32	Malaysia	0.6101	0.2148	0.1134	0.2819
33	Czech Republic	0.6060	0.1543	0.1405	0.3112
34	Chile	0.6014	0.2072	0.0895	0.3047
35	Croatia	0.5858	0.1436	0.1393	0.3030
36	Uruguay	0.5848	0.1630	0.1050	0.3168
37	Latvia	0.5826	0.1414	0.1241	0.3171
38	Italy	0.5800	0.0982	0.1622	0.3196
39	Portugal	0.5787	0.1317	0.1382	0.3088
40	Barbados	0.5714	0.0680	0.1819	0.3215
41	Greece	0.5708	0.1209	0.1263	0.3235
42	Cyprus	0.5705	0.1263	0.1428	0.3015
43	Slovakia	0.5639	0.1177	0.1390	0.3072
44	Bulgaria	0.5590	0.1392	0.1112	0.3086
45	Poland	0.5582	0.1317	0.1113	0.3152
46	Kazakhstan	0.5578	0.1792	0.0593	0.3194
47	Romania	0.5479	0.1414	0.1021	0.3045
48	Argentina	0.5467	0.1403	0.0928	0.3136
49	United Arab Emirates	0.5349	0.0853	0.1793	0.2703
50	Kuwait	0.5290	0.1565	0.0833	0.2892
51	Jordan	0.5278	0.1813	0.0596	0.2869
52	TFYR Macedonia	0.5261	0.1090	0.1255	0.2916
53	Mongolia	0.5243	0.1889	0.0342	0.3012
54	Ukraine	0.5181	0.1177	0.0821	0.3184

Rank	Country	Index value	Of which		
			Online service component	Telecommunication infrastructure component	Human capital component
55	Antigua and Barbuda	0.5154	0.0410	0.1730	0.3014
56	Mexico	0.5150	0.1500	0.0713	0.2936
57	Andorra	0.5148	0.0788	0.1457	0.2903
58	Saudi Arabia	0.5142	0.1058	0.1330	0.2754
59	Russian Federation	0.5136	0.1123	0.0913	0.3101
60	Montenegro	0.5101	0.1069	0.1093	0.2940
61	Brazil	0.5006	0.1252	0.0838	0.2916
62	Qatar	0.4928	0.0950	0.1046	0.2932
63	Peru	0.4923	0.1392	0.0590	0.2941
64	Belarus	0.4900	0.1025	0.0687	0.3188
65	Bahamas	0.4871	0.0788	0.1156	0.2927
66	Tunisia	0.4826	0.1641	0.0641	0.2544
67	Trinidad and Tobago	0.4806	0.1155	0.0760	0.2891
68	Brunei Darussalam	0.4796	0.0961	0.0892	0.2943
69	Turkey	0.4780	0.1177	0.0852	0.2752
70	Venezuela	0.4774	0.1036	0.0766	0.2971
71	Costa Rica	0.4749	0.1036	0.0800	0.2913
72	China	0.4700	0.1252	0.0631	0.2817
73	El Salvador	0.4700	0.1446	0.0635	0.2619
74	Bosnia and Herzegovina	0.4698	0.0939	0.0827	0.2932
75	Saint Kitts and Nevis	0.4691	0.0345	0.1417	0.2929
76	Thailand	0.4653	0.1133	0.0576	0.2943
77	Mauritius	0.4645	0.1004	0.0874	0.2768
78	Philippines	0.4637	0.1338	0.0368	0.2931
79	Panama	0.4619	0.0961	0.0727	0.2932
80	Republic of Moldova	0.4611	0.1004	0.0638	0.2970
81	Serbia	0.4585	0.0756	0.0889	0.2940
82	Oman	0.4576	0.1252	0.0690	0.2633
83	Azerbaijan	0.4571	0.1101	0.0439	0.3031
84	Dominican Republic	0.4557	0.1241	0.0547	0.2769
85	Albania	0.4519	0.1058	0.0538	0.2924
86	Egypt	0.4518	0.1803	0.0414	0.2301
87	Uzbekistan	0.4498	0.1284	0.0282	0.2931
88	Saint Lucia	0.4471	0.0378	0.1158	0.2934
89	Jamaica	0.4467	0.0777	0.0930	0.2759
90	Viet Nam	0.4454	0.1036	0.0746	0.2672
91	Kyrgyzstan	0.4417	0.1079	0.0303	0.3035
92	Maldives	0.4392	0.0550	0.0952	0.2889
93	Lebanon	0.4388	0.0907	0.0648	0.2833
94	Saint Vincent and the Grenadines	0.4355	0.0443	0.1216	0.2697
95	Ecuador	0.4322	0.1079	0.0526	0.2716
96	Cuba	0.4321	0.0820	0.0206	0.3296
97	South Africa	0.4306	0.1047	0.0476	0.2783
98	Bolivia	0.4280	0.1036	0.0302	0.2942
99	Grenada	0.4277	0.0637	0.0795	0.2845
100	Georgia	0.4248	0.0842	0.0384	0.3022
101	Paraguay	0.4243	0.0896	0.0473	0.2875
102	Iran (Islamic Republic of)	0.4234	0.0907	0.0712	0.2616
103	Palau	0.4189	0.0183	0.0840	0.3165
104	Seychelles	0.4179	0.0194	0.1002	0.2983
105	Dominica	0.4149	0.0173	0.1177	0.2800
106	Guyana	0.4140	0.0615	0.0424	0.3101
107	Honduras	0.4065	0.1004	0.0419	0.2642

E-government development index (cont.)

Rank	Country	Index value	Of which		
			Online service component	Telecommunication infrastructure component	Human capital component
108	Cape Verde	0.4054	0.0917	0.0543	0.2593
109	Indonesia	0.4026	0.0831	0.0377	0.2818
110	Armenia	0.4025	0.0594	0.0422	0.3009
111	Sri Lanka	0.3995	0.0885	0.0357	0.2753
112	Guatemala	0.3937	0.1047	0.0504	0.2386
113	Fiji	0.3925	0.0626	0.0461	0.2839
114	Libya	0.3799	0.0464	0.0371	0.2963
115	Samoa	0.3742	0.0486	0.0270	0.2986
116	Tonga	0.3697	0.0237	0.0419	0.3040
117	Botswana	0.3637	0.0680	0.0357	0.2601
118	Nicaragua	0.3630	0.0863	0.0250	0.2516
119	India	0.3567	0.1252	0.0192	0.2123
120	Belize	0.3513	0.0540	0.0462	0.2511
121	Lesotho	0.3512	0.0896	0.0132	0.2484
122	Tajikistan	0.3477	0.0302	0.0203	0.2972
123	Gabon	0.3420	0.0270	0.0366	0.2784
124	Kenya	0.3338	0.0810	0.0210	0.2319
125	Namibia	0.3314	0.0227	0.0402	0.2685
126	Morocco	0.3287	0.0810	0.0584	0.1894
127	Suriname	0.3283	0.0076	0.0400	0.2807
128	São Tomé and Príncipe	0.3258	0.0302	0.0273	0.2683
129	Zimbabwe	0.3230	0.0432	0.0193	0.2605
130	Turkmenistan	0.3226	0.0097	0.0137	0.2992
131	Algeria	0.3181	0.0335	0.0412	0.2435
132	Angola	0.3110	0.1155	0.0149	0.1806
133	Syrian Arab Republic	0.3103	0.0140	0.0399	0.2564
134	Bangladesh	0.3028	0.1209	0.0109	0.1710
135	Congo	0.3019	0.0270	0.0195	0.2555
136	Iraq	0.2996	0.0518	0.0182	0.2295
137	United Republic of Tanzania	0.2926	0.0594	0.0111	0.2221
138	Equatorial Guinea	0.2902	0.0108	0.0198	0.2596
139	Madagascar	0.2890	0.0561	0.0099	0.2230
140	Cambodia	0.2878	0.0464	0.0098	0.2316
141	Myanmar	0.2818	0.0281	0.0015	0.2522
142	Uganda	0.2812	0.0345	0.0158	0.2309
143	Zambia	0.2810	0.0356	0.0141	0.2313
144	Côte d'Ivoire	0.2805	0.1101	0.0205	0.1498
145	Swaziland	0.2757	.....	0.0202	0.2555
146	Pakistan	0.2755	0.0842	0.0254	0.1658
147	Ghana	0.2754	0.0507	0.0195	0.2051
148	Rwanda	0.2749	0.0594	0.0067	0.2089
149	Cameroon	0.2722	0.0518	0.0136	0.2069
150	Nigeria	0.2687	0.0324	0.0196	0.2167
151	Lao People's Democratic Republic	0.2637	0.0270	0.0109	0.2259
152	Bhutan	0.2598	0.0637	0.0204	0.1757
153	Nepal	0.2568	0.0572	0.0075	0.1921
154	Sudan	0.2542	0.0529	0.0235	0.1778
155	Vanuatu	0.2521	0.0043	0.0124	0.2354
156	Solomon Islands	0.2445	0.0151	0.0063	0.2232
157	Mauritania	0.2359	0.0302	0.0263	0.1793
158	Democratic Republic of the Congo	0.2357	0.0302	0.0046	0.2009
159	Malawi	0.2357	0.0054	0.0060	0.2243
160	Comoros	0.2327	0.0097	0.0067	0.2162

Rank	Country	Index value	Of which		
			Online service component	Telecommunication infrastructure component	Human capital component
161	Mozambique	0.2288	0.0583	0.0083	0.1623
162	Timor-Leste	0.2273	0.0453	0.0022	0.1797
163	Senegal	0.2241	0.0604	0.0235	0.1403
164	Yemen	0.2154	0.0162	0.0098	0.1894
165	Togo	0.2150	0.0237	0.0150	0.1763
166	Liberia	0.2133	0.0216	0.0062	0.1855
167	Gambia	0.2117	0.0281	0.0315	0.1521
168	Afghanistan	0.2098	0.0788	0.0108	0.1202
169	Haiti	0.2074	0.0065	0.0221	0.1789
170	Djibouti	0.2059	0.0162	0.0049	0.1848
171	Papua New Guinea	0.2043	0.0248	0.0075	0.1719
172	Ethiopia	0.2033	0.0680	0.0024	0.1329
173	Benin	0.2017	0.0399	0.0150	0.1468
174	Burundi	0.2014	0.0140	0.0030	0.1844
175	Eritrea	0.1859	0.0076	0.0037	0.1746
176	Mali	0.1815	0.0626	0.0096	0.1093
177	Sierra Leone	0.1697	0.0011	0.0059	0.1627
178	Burkina Faso	0.1587	0.0529	0.0066	0.0992
179	Guinea-Bissau	0.1561	0.0054	0.0118	0.1388
180	Guinea	0.1426	0.0119	0.0094	0.1213
181	Central African Republic	0.1399	0.0000	0.0015	0.1384
182	Chad	0.1235	0.0065	0.0060	0.1110
183	Niger	0.1098	0.0130	0.0038	0.0930
Other UN Member States					
184	Democratic People's Republic of Korea	.....	0.0065	.....	.....
184	Kiribati	.....	0.0097	0.0049	.....
184	Marshall Islands	.....	0.0086	0.0138	.....
184	Micronesia (Federated States of)	.....	0.0432	0.0268	.....
184	Monaco	.....	0.0464	0.2297	.....
184	Nauru	.....	0.0043	.....	.....
184	San Marino	.....	0.0626	0.1759	.....
184	Somalia	.....	0.0000	0.0040	.....
184	Tuvalu	.....	0.0043	0.0567	.....
Regional and economic groupings					
	Africa	0.2733	0.0489	0.0221	0.2039
	Americas	0.4790	0.1069	0.0857	0.2864
	Asia	0.4424	0.1085	0.0657	0.2659
	Europe	0.6227	0.1480	0.1598	0.3123
	Oceania	0.4193	0.0532	0.0548	0.2766
	Developed countries	0.6542	0.1369	0.1719	0.3136
	Developing countries other than LDCs	0.4443	0.0960	0.0675	0.2774
	Least developed countries	0.2424	0.0381	0.0147	0.1895
	Small island developing States	0.3924	0.0479	0.0657	0.2685

Online service index and its components

Rank	Country	Index value	Points for emerging information services	Points for enhanced information services	Points for transaction services	Points for connected approach
1	Republic of Korea	1.0000	66	106	112	31
2	United States	0.9365	62	97	115	21
3	Canada	0.8825	59	83	104	32
4	United Kingdom	0.7746	61	87	71	25
5	Spain	0.7651	60	88	68	25
5	Australia	0.7651	58	76	69	38
7	Norway	0.7365	61	85	69	17
8	Bahrain	0.7302	63	72	72	23
9	Colombia	0.7111	57	51	89	27
10	Singapore	0.6857	54	82	64	16
11	France	0.6825	54	71	77	13
12	Netherlands	0.6794	60	80	55	19
13	Japan	0.6730	59	78	56	19
13	Denmark	0.6730	54	88	52	18
15	New Zealand	0.6381	59	76	46	20
16	Malaysia	0.6317	51	73	55	20
17	Belgium	0.6254	57	66	54	20
18	Chile	0.6095	57	44	74	17
19	Israel	0.5841	49	45	66	24
20	Mongolia	0.5556	47	49	54	25
21	Germany	0.5492	54	76	23	20
22	Jordan	0.5333	50	44	57	17
23	Egypt	0.5302	55	51	49	12
24	Kazakhstan	0.5270	66	53	24	23
24	Sweden	0.5270	54	67	26	19
26	Liechtenstein	0.5238	49	43	52	21
27	Hungary	0.5048	53	43	40	23
28	Estonia	0.5016	45	54	38	21
29	Ireland	0.4984	48	63	37	9
30	Tunisia	0.4825	52	40	50	10
30	Lithuania	0.4825	54	61	22	15
32	Uruguay	0.4794	51	43	36	21
32	Finland	0.4794	44	55	36	16
34	Austria	0.4762	46	64	28	12
35	Malta	0.4698	53	51	32	12
36	Kuwait	0.4603	41	39	58	7
37	Czech Republic	0.4540	50	42	34	17
38	Switzerland	0.4444	51	44	28	17
39	Mexico	0.4413	45	52	26	16
40	El Salvador	0.4254	48	30	46	10
41	Croatia	0.4222	46	44	29	14
42	Latvia	0.4159	52	37	19	23
42	Romania	0.4159	55	38	25	13
44	Argentina	0.4127	53	42	22	13
45	Peru	0.4095	53	37	26	13
45	Bulgaria	0.4095	47	41	28	13
47	Slovenia	0.4000	55	46	6	19
48	Iceland	0.3968	53	37	23	12
49	Philippines	0.3937	48	25	35	16
50	Poland	0.3873	54	45	10	13
50	Portugal	0.3873	54	37	21	10
52	Luxembourg	0.3810	46	32	30	12
53	Uzbekistan	0.3778	52	39	18	10
54	Cyprus	0.3714	44	39	19	15

Rank	Country	Index value	Points for emerging information services	Points for enhanced information services	Points for transaction services	Points for connected approach
55	Brazil	0.3683	53	34	10	19
55	China	0.3683	54	40	4	18
55	India	0.3683	45	41	22	8
55	Oman	0.3683	47	33	26	10
59	Dominican Republic	0.3651	46	30	24	15
60	Bangladesh	0.3556	48	44	5	15
60	Greece	0.3556	46	37	15	14
62	Turkey	0.3460	57	29	9	14
62	Slovakia	0.3460	50	32	14	13
62	Ukraine	0.3460	55	31	7	16
65	Angola	0.3397	52	38	9	8
65	Trinidad and Tobago	0.3397	50	39	12	6
67	Thailand	0.3333	50	31	15	9
68	Russian Federation	0.3302	49	28	15	12
69	Côte d'Ivoire	0.3238	42	31	22	7
69	Azerbaijan	0.3238	47	36	10	9
71	TFYR Macedonia	0.3206	38	41	10	12
72	Ecuador	0.3175	53	27	9	11
72	Kyrgyzstan	0.3175	28	26	33	13
74	Montenegro	0.3143	45	40	6	8
75	Saudi Arabia	0.3111	46	25	22	5
75	Albania	0.3111	44	33	10	11
77	South Africa	0.3079	34	34	27	2
77	Guatemala	0.3079	48	26	12	11
79	Bolivia	0.3048	35	37	12	12
79	Costa Rica	0.3048	45	28	10	13
79	Venezuela	0.3048	43	30	9	14
79	Viet Nam	0.3048	51	26	5	14
83	Belarus	0.3016	43	25	15	12
84	Mauritius	0.2952	46	23	18	6
84	Honduras	0.2952	45	21	12	15
84	Republic of Moldova	0.2952	51	26	6	10
87	Italy	0.2889	43	28	12	8
88	Panama	0.2825	49	18	9	13
88	Brunei Darussalam	0.2825	40	35	3	11
90	Qatar	0.2794	27	21	37	3
91	Bosnia and Herzegovina	0.2762	48	27	1	11
92	Cape Verde	0.2698	40	33	5	7
93	Iran (Islamic Republic of)	0.2667	50	21	4	9
93	Lebanon	0.2667	32	29	16	7
95	Lesotho	0.2635	52	29	1	1
95	Paraguay	0.2635	39	18	16	10
97	Sri Lanka	0.2603	33	30	6	13
98	Nicaragua	0.2540	34	25	16	5
99	United Arab Emirates	0.2508	46	26	2	5
100	Georgia	0.2476	45	17	5	11
100	Pakistan	0.2476	33	36	5	4
102	Indonesia	0.2444	41	25	4	7
103	Cuba	0.2413	36	27	7	6
104	Kenya	0.2381	34	29	8	4
104	Morocco	0.2381	40	22	9	4
106	Bahamas	0.2317	47	18	6	2
106	Afghanistan	0.2317	41	25	5	2
106	Andorra	0.2317	27	26	10	10

Online service index and its components (cont.)

Rank	Country	Index value	Points for emerging information services	Points for enhanced information services	Points for transaction services	Points for connected approach
109	Jamaica	0.2286	38	17	8	9
110	Serbia	0.2222	38	26	0	6
111	Botswana	0.2000	31	21	6	5
111	Ethiopia	0.2000	32	23	3	5
111	Barbados	0.2000	25	19	13	6
114	Grenada	0.1873	30	22	2	5
114	Bhutan	0.1873	30	21	6	2
116	Mali	0.1841	29	12	9	8
116	San Marino	0.1841	32	12	8	6
116	Fiji	0.1841	36	21	0	1
119	Guyana	0.1810	34	17	0	6
120	Senegal	0.1778	32	14	3	7
121	Rwanda	0.1746	34	14	2	5
121	United Republic of Tanzania	0.1746	34	21	0	0
121	Armenia	0.1746	38	10	0	7
124	Mozambique	0.1714	32	13	3	6
125	Nepal	0.1683	30	22	0	1
126	Madagascar	0.1651	28	13	4	7
127	Maldives	0.1619	27	24	0	0
128	Belize	0.1587	24	17	3	6
129	Burkina Faso	0.1556	26	13	0	10
129	Sudan	0.1556	23	16	2	8
131	Cameroon	0.1524	16	16	12	4
131	Iraq	0.1524	24	13	5	6
133	Ghana	0.1492	26	18	1	2
134	Samoa	0.1429	24	21	0	0
135	Libya	0.1365	21	19	0	3
135	Cambodia	0.1365	25	13	2	3
135	Monaco	0.1365	14	17	5	7
138	Timor-Leste	0.1333	23	16	0	3
139	Saint Vincent and the Grenadines	0.1302	29	11	0	1
140	Zimbabwe	0.1270	23	11	0	6
140	Micronesia (Federated States of)	0.1270	19	17	2	2
142	Antigua and Barbuda	0.1206	14	19	1	4
143	Benin	0.1175	20	10	4	3
144	Saint Lucia	0.1111	14	16	0	5
145	Zambia	0.1048	21	8	0	4
146	Uganda	0.1016	18	11	0	3
146	Saint Kitts and Nevis	0.1016	15	9	2	6
148	Algeria	0.0984	19	9	1	2
149	Nigeria	0.0952	20	8	0	2
150	Democratic Republic of the Congo	0.0889	17	7	0	4
150	Mauritania	0.0889	11	13	1	3
150	São Tomé and Príncipe	0.0889	21	7	0	0
150	Tajikistan	0.0889	15	7	4	2
154	Gambia	0.0825	16	9	0	1
154	Myanmar	0.0825	19	7	0	0
156	Congo	0.0794	7	8	7	3
156	Gabon	0.0794	13	9	1	2
156	Lao People's Democratic Republic	0.0794	12	9	2	2

Rank	Country	Index value	Points for emerging information services	Points for enhanced information services	Points for transaction services	Points for connected approach
159	Papua New Guinea	0.0730	13	7	0	3
160	Togo	0.0698	6	8	3	5
160	Tonga	0.0698	13	9	0	0
162	Namibia	0.0667	14	5	0	2
163	Liberia	0.0635	11	7	0	2
164	Seychelles	0.0571	11	7	0	0
165	Palau	0.0540	8	7	0	2
166	Dominica	0.0508	7	6	1	2
167	Djibouti	0.0476	9	3	0	3
167	Yemen	0.0476	9	4	0	2
169	Solomon Islands	0.0444	7	6	0	1
170	Burundi	0.0413	8	2	0	3
170	Syrian Arab Republic	0.0413	7	5	0	1
172	Niger	0.0381	4	2	3	3
173	Guinea	0.0349	5	2	3	1
174	Equatorial Guinea	0.0317	2	5	0	3
175	Comoros	0.0286	5	3	0	1
175	Turkmenistan	0.0286	4	5	0	0
175	Kiribati	0.0286	4	5	0	0
178	Marshall Islands	0.0254	4	3	0	1
179	Eritrea	0.0222	3	4	0	0
179	Suriname	0.0222	3	2	0	2
181	Chad	0.0190	3	2	1	0
181	Haiti	0.0190	3	2	0	1
181	Democratic People's Republic of Korea	0.0190	3	2	1	0
184	Guinea-Bissau	0.0159	0	3	1	1
184	Malawi	0.0159	3	2	0	0
186	Nauru	0.0127	2	2	0	0
186	Tuvalu	0.0127	1	3	0	0
186	Vanuatu	0.0127	1	2	0	1
189	Sierra Leone	0.0032	0	0	0	1
Countries without online services						
	Central African Republic					
	Somalia					
	Swaziland					
Regional and economic groupings						
	Africa	0.1439				
	Americas	0.3143				
	Asia	0.3191				
	Europe	0.4354				
	Oceania	0.1565				
	Developed countries	0.5082				
	Developing countries other than LDCs	0.2823				
	Least developed countries	0.1121				
	Small island developing States	0.1409				

Telecommunication infrastructure index and its components

Rank	Country	Index value	Estimated Internet users per 100 inhabitants	Main fixed telephone lines per 100 inhabitants	Mobile subscribers per 100 inhabitants	Personal computers per 100 inhabitants	Total fixed broadband per 100 inhabitants
1	Switzerland	0.7687	76.10	63.91	116.43	92.24	32.89
2	Netherlands	0.7666	86.36	44.31	120.57	90.91	34.83
3	Sweden	0.7522	79.65	57.83	119.38	87.79	31.56
4	United Kingdom	0.7164	79.62	54.24	123.41	80.23	28.21
5	Luxembourg	0.7138	76.61	54.22	147.11	67.73	29.80
6	Denmark	0.6988	84.82	45.56	120.02	55.09	36.75
7	Monaco	0.6961	61.48	106.38	62.54	49.18	37.71
8	Germany	0.6955	75.97	62.60	130.37	65.54	27.47
9	Norway	0.6830	84.60	42.16	109.98	62.68	33.73
10	Canada	0.6799	72.85	55.37	64.51	94.40	28.96
11	United States	0.6449	74.00	51.33	86.79	78.67	25.35
12	Iceland	0.6395	65.64	60.58	106.33	53.09	31.66
13	Republic of Korea	0.6390	77.83	44.29	94.71	58.14	32.14
14	Singapore	0.6386	69.24	40.24	138.15	76.04	21.74
15	Estonia	0.6273	63.64	37.14	188.20	52.13	23.70
16	Finland	0.6240	78.91	31.11	128.76	50.05	30.48
17	Australia	0.6011	71.98	44.46	104.96	60.29	24.39
18	France	0.5954	51.16	56.42	93.45	65.17	28.52
19	Bahrain	0.5855	51.95	28.37	180.51	74.58	16.12
20	Ireland	0.5739	63.79	49.63	113.77	58.07	20.09
21	Austria	0.5736	59.37	40.08	129.73	60.69	21.49
22	Belgium	0.5698	66.53	42.08	111.63	42.02	27.97
23	New Zealand	0.5648	69.76	41.37	109.22	52.97	21.63
24	Barbados	0.5513	73.86	58.93	132.00	15.79	21.77
25	United Arab Emirates	0.5434	65.15	33.63	208.65	33.08	11.79
26	Liechtenstein	0.5412	65.08	55.40	90.58	.....	39.61
27	San Marino	0.5330	51.37	68.30	56.76	79.00	12.83
28	Japan	0.5242	69.16	40.21	86.73	40.87	23.65
29	Antigua and Barbuda	0.5241	75.03	43.86	157.67	20.68	14.52
30	Spain	0.5100	56.70	45.41	111.68	40.04	20.22
31	Slovenia	0.5026	49.24	50.11	101.97	42.68	21.17
32	Italy	0.4914	48.85	33.61	148.61	36.64	18.93
33	Malta	0.4863	49.14	59.18	94.64	22.99	24.25
34	Andorra	0.4415	70.04	44.28	76.06	.....	24.49
35	Lithuania	0.4413	53.50	23.64	151.24	18.29	17.77
36	Hungary	0.4338	54.93	30.90	122.09	25.63	15.40
37	Israel	0.4334	28.85	41.13	127.38	25.10	22.69
38	Cyprus	0.4327	38.04	47.93	117.89	38.34	12.06
39	Saint Kitts and Nevis	0.4295	29.75	40.56	146.78	22.68	19.04
40	Czech Republic	0.4258	48.61	22.08	133.54	27.47	17.05
41	Croatia	0.4220	50.75	41.85	133.95	17.95	11.86
42	Slovakia	0.4212	51.32	20.33	102.23	51.46	11.46
43	Portugal	0.4189	41.69	38.60	139.64	17.19	15.85
44	Saudi Arabia	0.4031	30.55	16.27	142.85	68.25	4.16
45	Greece	0.3829	32.60	53.65	123.90	9.43	13.53
46	TFYR Macedonia	0.3804	42.90	22.39	122.56	36.76	8.77
47	Latvia	0.3762	55.20	28.39	97.72	32.81	6.44
48	Saint Vincent and the Grenadines	0.3685	60.49	20.87	119.23	15.18	8.58
49	Dominica	0.3566	39.40	26.03	132.76	19.23	9.70
50	Saint Lucia	0.3510	58.68	24.02	99.53	15.89	8.22
51	Bahamas	0.3502	42.05	39.82	106.04	12.29	10.08
52	Malaysia	0.3438	62.57	15.89	100.41	23.15	4.82
53	Poland	0.3374	43.94	27.11	108.54	16.92	8.99
54	Bulgaria	0.3370	30.99	29.74	140.05	8.91	11.24
55	Montenegro	0.3311	45.09	56.85	103.58	.....	4.16

Telecommunication infrastructure index and its components (cont.)

Rank	Country	Index value	Estimated Internet users per 100 inhabitants	Main fixed telephone lines per 100 inhabitants	Mobile subscribers per 100 inhabitants	Personal computers per 100 inhabitants	Total fixed broadband per 100 inhabitants
56	Uruguay	0.3183	40.01	28.64	104.73	13.53	8.59
57	Qatar	0.3168	34.04	20.56	131.39	15.69	8.07
58	Romania	0.3093	23.99	23.58	114.54	19.32	11.75
59	Seychelles	0.3037	38.17	27.70	101.78	21.59	4.08
60	Maldives	0.2886	23.52	15.38	142.82	20.24	5.15
61	Jamaica	0.2820	56.88	11.69	100.58	6.71	3.61
62	Argentina	0.2812	28.11	24.15	116.61	9.04	7.99
63	Russian Federation	0.2765	21.14	31.14	132.61	13.33	2.82
64	Chile	0.2711	32.47	20.99	88.05	14.11	8.49
65	Brunei Darussalam	0.2703	48.82	19.91	90.66	8.92	2.91
66	Serbia	0.2695	23.99	31.35	97.76	18.31	4.59
67	Mauritius	0.2647	29.69	28.48	80.74	17.43	5.71
68	Turkey	0.2581	33.12	23.68	89.05	6.10	7.78
69	Palau	0.2546	26.97	36.71	52.65	33.58	0.48
70	Brazil	0.2538	33.83	21.43	78.47	16.12	5.26
71	Kuwait	0.2524	31.57	18.61	97.28	22.22	0.93
72	Bosnia and Herzegovina	0.2505	34.66	27.33	84.26	6.40	4.99
73	Ukraine	0.2487	22.51	28.65	121.09	4.55	3.48
74	Costa Rica	0.2424	32.31	31.81	41.75	23.10	3.90
75	Colombia	0.2421	38.03	15.15	91.90	7.92	4.23
76	Grenada	0.2408	22.29	27.60	57.97	15.66	9.79
77	Venezuela	0.2321	25.49	22.42	96.31	9.26	3.90
78	Trinidad and Tobago	0.2304	16.02	23.14	113.67	13.21	2.67
79	Viet Nam	0.2261	23.92	33.13	80.37	9.54	2.35
80	Panama	0.2202	22.91	14.59	111.94	4.56	4.63
81	Mexico	0.2161	21.43	18.92	69.37	14.10	7.01
82	Iran (Islamic Republic of)	0.2157	31.37	33.83	58.65	10.37	0.41
83	Oman	0.2092	16.84	9.84	115.58	16.88	1.15
84	Belarus	0.2081	28.89	37.76	71.57	0.80	0.12
85	Lebanon	0.1965	37.72	16.76	34.10	10.18	4.80
86	Tunisia	0.1942	27.53	12.18	84.27	7.62	2.24
87	Republic of Moldova	0.1933	19.09	29.44	66.60	11.43	1.29
88	El Salvador	0.1923	12.49	17.56	113.32	5.78	2.01
89	China	0.1913	22.28	27.51	47.41	5.61	6.23
90	Jordan	0.1806	24.46	8.46	86.60	7.20	2.09
91	Kazakhstan	0.1797	12.34	21.97	96.06	.....	3.64
92	Peru	0.1789	24.72	9.98	72.66	10.06	2.52
93	Morocco	0.1769	32.59	9.46	72.19	3.52	1.53
94	Thailand	0.1746	20.03	10.49	92.01	6.68	1.36
95	Tuvalu	0.1717	40.63	13.20	18.28	8.60	3.56
96	Dominican Republic	0.1658	25.75	9.90	72.45	3.49	2.27
97	Cape Verde	0.1646	20.61	14.44	55.68	14.03	1.48
98	Albania	0.1629	15.10	10.07	99.93	3.84	1.15
99	Ecuador	0.1595	9.71	14.17	86.01	12.95	0.26
100	Guatemala	0.1528	10.13	10.59	109.22	2.06	0.21
101	South Africa	0.1443	8.43	9.22	90.60	8.25	0.77
102	Paraguay	0.1433	8.66	5.82	92.83	7.79	1.50
103	Belize	0.1400	10.86	10.35	53.23	15.28	2.56
104	Fiji	0.1396	10.90	14.53	71.09	6.04	1.37
105	Azerbaijan	0.1329	10.74	15.10	75.00	2.39	0.69
106	Guyana	0.1285	24.87	14.42	36.84	3.80	0.26
107	Armenia	0.1280	5.63	19.39	61.07	9.69	0.06
108	Tonga	0.1270	8.11	24.66	48.73	5.89	0.70
109	Honduras	0.1268	9.00	11.28	84.86	1.98	0.00
110	Egypt	0.1256	15.42	14.73	50.62	4.60	0.94

Telecommunication infrastructure index and its components

Rank	Country	Index value	Estimated Internet users per 100 inhabitants	Main fixed telephone lines per 100 inhabitants	Mobile subscribers per 100 inhabitants	Personal computers per 100 inhabitants	Total fixed broadband per 100 inhabitants
111	Algeria	0.1248	10.34	9.06	81.41	1.07	0.85
112	Namibia	0.1219	5.33	6.61	49.39	23.94	0.01
113	Suriname	0.1213	8.62	16.13	63.33	4.00	0.53
114	Syrian Arab Republic	0.1209	16.79	17.12	33.24	8.78	0.05
115	Georgia	0.1164	8.26	12.76	59.66	5.46	1.07
116	Indonesia	0.1143	11.13	13.36	61.83	2.03	0.13
117	Libya	0.1126	4.72	14.39	72.95	2.19	0.16
118	Philippines	0.1115	5.97	4.32	75.38	7.23	0.56
119	Gabon	0.1110	6.21	1.86	89.77	3.37	0.14
120	Sri Lanka	0.1081	5.72	17.18	55.24	3.76	0.50
121	Botswana	0.1081	4.16	7.41	77.34	4.83	0.19
122	Mongolia	0.1036	12.25	6.19	35.08	13.95	0.28
123	Gambia	0.0955	6.88	2.94	70.24	3.53	0.02
124	Kyrgyzstan	0.0918	14.03	9.02	40.56	1.92	0.05
125	Bolivia	0.0915	10.50	7.12	49.82	2.40	0.36
126	Uzbekistan	0.0854	8.89	7.06	46.52	3.12	0.24
127	São Tomé and Príncipe	0.0827	15.48	4.86	30.59	3.93	0.20
128	Samoa	0.0819	4.75	10.90	48.06	2.35	0.04
129	Micronesia (Federated States of)	0.0811	13.62	7.90	24.91	5.48	0.04
130	Mauritania	0.0798	1.43	2.37	65.07	4.54	0.18
131	Pakistan	0.0771	10.45	2.50	49.74	0.44	0.09
132	Nicaragua	0.0757	2.81	4.49	53.62	4.03	0.34
133	Sudan	0.0711	9.19	0.86	27.05	10.71	0.11
134	Senegal	0.0711	8.35	1.95	44.13	2.22	0.39
135	Haiti	0.0669	10.29	1.11	32.40	5.14	0.00
136	Kenya	0.0637	8.67	0.65	41.88	1.37	0.05
137	Cuba	0.0623	12.94	9.85	2.96	5.62	0.02
138	Côte d'Ivoire	0.0622	3.21	1.73	50.74	1.68	0.05
139	Bhutan	0.0619	5.82	4.00	36.55	2.51	0.30
140	Tajikistan	0.0615	7.20	5.05	34.93	1.29	0.00
141	Swaziland	0.0612	4.13	3.87	39.13	3.69	0.00
142	Equatorial Guinea	0.0600	1.82	1.64	52.49	1.48	0.03
143	Nigeria	0.0594	7.27	0.86	41.66	0.85	0.02
144	Ghana	0.0592	4.27	0.62	49.55	0.58	0.07
145	Congo	0.0590	4.29	0.47	49.98	0.56	0.00
146	Zimbabwe	0.0586	11.40	2.77	13.28	6.94	0.12
147	India	0.0583	6.95	3.21	29.36	3.18	0.45
148	Iraq	0.0552	0.93	3.60	47.55	0.77	0.00
149	Uganda	0.0479	7.90	0.53	27.02	1.69	0.02
150	Benin	0.0455	1.85	1.32	39.66	0.71	0.02
151	Togo	0.0453	5.42	2.18	23.95	3.09	0.03
152	Angola	0.0451	3.05	0.63	37.59	0.65	0.07
153	Zambia	0.0427	5.55	0.72	28.04	1.12	0.04
154	Marshall Islands	0.0417	3.71	7.42	1.27	9.00	0.00
155	Turkmenistan	0.0414	1.41	9.20	6.98	7.19	0.00
156	Cameroon	0.0411	2.93	1.04	32.28	1.12	0.00
157	Lesotho	0.0400	3.58	2.64	28.35	0.25	0.00
158	Vanuatu	0.0376	7.46	3.87	11.40	1.39	0.03
159	Guinea-Bissau	0.0359	2.35	0.29	31.75	0.20	0.00
160	United Republic of Tanzania	0.0337	1.22	0.29	30.62	0.91	0.00
161	Bangladesh	0.0330	0.32	0.84	27.90	2.25	0.03
162	Lao People's Democratic Republic	0.0329	1.64	1.56	24.27	1.70	0.06
163	Afghanistan	0.0328	1.90	0.37	29.03	0.39	0.00
164	Madagascar	0.0301	1.65	0.86	25.30	0.58	0.03
165	Yemen	0.0298	1.44	4.48	13.76	2.77	0.00

Telecommunication infrastructure index and its components (cont.)

Rank	Country	Index value	Estimated Internet users per 100 inhabitants	Main fixed telephone lines per 100 inhabitants	Mobile subscribers per 100 inhabitants	Personal computers per 100 inhabitants	Total fixed broadband per 100 inhabitants
166	Cambodia	0.0297	0.49	0.31	29.10	0.36	0.06
167	Mali	0.0291	0.98	0.65	25.71	0.81	0.04
168	Guinea	0.0285	0.92	0.52	26.44	0.49	0.00
169	Mozambique	0.0250	1.56	0.35	19.68	1.36	0.00
170	Papua New Guinea	0.0228	1.79	0.93	4.67	6.39	0.00
171	Nepal	0.0227	1.41	2.79	14.58	0.48	0.04
172	Comoros	0.0204	3.42	3.02	6.20	0.88	0.00
173	Rwanda	0.0203	3.09	0.17	13.61	0.30	0.04
174	Burkina Faso	0.0201	0.92	0.83	16.76	0.63	0.01
175	Solomon Islands	0.0190	1.81	1.56	2.19	4.64	0.20
176	Liberia	0.0189	0.55	0.06	19.30	.....	0.00
177	Chad	0.0182	1.19	0.13	16.58	0.16	0.00
178	Malawi	0.0181	2.13	1.21	12.00	0.18	0.01
179	Sierra Leone	0.0179	0.25	0.49	18.14	.....	0.00
180	Djibouti	0.0149	1.34	1.34	5.47	2.36	0.01
181	Kiribati	0.0148	2.15	4.21	0.79	1.11	.....
182	Democratic Republic of the Congo	0.0140	0.45	0.06	14.42	0.02	0.00
183	Somalia	0.0122	1.12	1.15	6.87	0.90	0.00
184	Niger	0.0117	0.54	0.18	11.40	0.08	0.00
185	Eritrea	0.0113	3.04	0.82	2.20	0.79	0.00
186	Burundi	0.0090	0.81	0.38	5.95	0.85	0.00
187	Ethiopia	0.0073	0.45	1.13	3.93	0.68	0.00
188	Timor-Leste	0.0068	0.14	0.23	7.35	.....	0.00
189	Central African Republic	0.0045	0.44	0.29	3.55	0.29	0.00
190	Myanmar	0.0045	0.08	1.44	0.76	0.92	0.00
Countries without telecommunication infrastructure data							
	Nauru	.....	.....	.....	.....	.....	.....
	Democratic People's Republic of Korea	.....	.....	4.97	.....	.....	0.00
Regional and economic groupings							
	Africa	0.0669	6.57	3.86	38.02	3.44	0.58
	Americas	0.2598	30.78	21.83	86.86	15.04	6.94
	Asia	0.1992	21.59	15.62	70.75	14.99	5.15
	Europe	0.4844	53.15	42.31	113.24	38.90	18.86
	Oceania	0.1660	20.28	16.29	38.32	15.21	5.24
	Developed countries	0.5208	57.99	43.75	112.04	46.14	21.08
	Developing countries other than LDCs	0.2046	22.84	17.43	77.74	12.08	4.29
	Least developed countries	0.0445	4.47	2.35	25.70	2.45	0.44
	Small island developing States	0.1991	24.78	17.74	64.07	12.38	5.46

Source: Columns 4-8: ITU

Human capital index and its components

Rank	Country	Index value	Adult literacy rate (%)	Combined gross enrolment ratio for primary, secondary and tertiary schools (%)
1	Cuba	0.9987	99.80	100.00
2	Australia	0.9933	99.00	100.00
2	Denmark	0.9933	99.00	100.00
2	Finland	0.9933	99.00	100.00
2	New Zealand	0.9933	99.00	100.00
6	Ireland	0.9931	99.00	99.93
7	Republic of Korea	0.9929	99.00	99.88
8	Norway	0.9884	99.00	98.53
9	Netherlands	0.9870	99.00	98.11
10	Iceland	0.9811	99.00	96.33
11	Greece	0.9804	97.10	99.91
12	Spain	0.9792	97.90	97.96
13	France	0.9772	99.00	95.17
14	Slovenia	0.9770	99.70	93.70
15	Belgium	0.9751	99.00	94.54
16	Barbados	0.9743	99.70	92.89
17	Canada	0.9708	99.00	93.24
18	Sweden	0.9698	99.00	92.94
19	Lithuania	0.9692	99.70	91.35
20	United States	0.9691	99.00	92.73
21	Italy	0.9684	98.90	92.71
22	Kazakhstan	0.9677	99.60	91.12
23	Estonia	0.9666	99.80	90.39
24	Belarus	0.9659	99.70	90.38
25	Ukraine	0.9647	99.70	90.02
26	Latvia	0.9608	99.80	88.64
27	Uruguay	0.9599	97.90	92.16
28	Austria	0.9598	99.00	89.94
29	Hungary	0.9597	98.90	90.11
30	Palau	0.9591	95.40	96.92
31	Poland	0.9552	99.30	87.95
32	United Kingdom	0.9542	99.00	88.27
33	Germany	0.9533	99.00	88.00
34	Argentina	0.9503	97.60	89.88
35	Israel	0.9502	97.10	90.85
36	Japan	0.9496	99.00	86.88
37	Liechtenstein	0.9476	99.00	86.29
38	Czech Republic	0.9429	99.00	84.87
39	Russian Federation	0.9397	99.50	82.90
40	Guyana	0.9396	99.00	83.87
41	Switzerland	0.9358	99.00	82.74
42	Portugal	0.9357	94.90	90.90
43	Bulgaria	0.9350	98.30	83.91
44	Slovakia	0.9310	99.00	81.30
45	Chile	0.9233	96.50	83.98
46	Romania	0.9226	97.60	81.58
47	Tonga	0.9212	99.20	77.97
48	Singapore	0.9203	94.40	87.30
49	Kyrgyzstan	0.9196	99.30	77.28
50	Azerbaijan	0.9185	99.50	76.55
51	Croatia	0.9181	98.70	78.04
52	Georgia	0.9156	99.00	76.69

Rank	Country	Index value	Adult literacy rate (%)	Combined gross enrolment ratio for primary, secondary and tertiary schools (%)
53	Luxembourg	0.9156	99.00	76.68
54	Cyprus	0.9135	97.70	78.66
55	Antigua and Barbuda	0.9133	99.00	76.00
56	Mongolia	0.9127	97.30	79.21
57	Armenia	0.9117	99.50	74.52
58	Turkmenistan	0.9067	99.50	73.00
59	Samoa	0.9049	98.70	74.07
60	Seychelles	0.9039	91.80	87.56
61	Tajikistan	0.9005	99.60	70.95
62	Venezuela	0.9004	95.20	79.73
63	Republic of Moldova	0.8999	99.20	71.57
64	Libya	0.8979	86.80	95.76
65	Bahrain	0.8933	88.80	90.38
66	Thailand	0.8919	94.10	79.38
67	Brunei Darussalam	0.8918	94.90	77.73
68	Bolivia	0.8914	90.70	86.02
69	Peru	0.8911	89.60	88.13
70	Montenegro	0.8910	96.40	74.50
70	Serbia	0.8910	96.40	74.50
72	Mexico	0.8898	92.80	81.35
73	Saint Lucia	0.8892	94.80	77.17
74	Qatar	0.8886	93.10	80.38
75	Bosnia and Herzegovina	0.8886	96.70	73.17
76	Panama	0.8884	93.40	79.73
77	Uzbekistan	0.8883	96.90	72.69
78	Philippines	0.8881	93.40	79.64
79	Saint Kitts and Nevis	0.8875	97.80	70.64
80	Malta	0.8870	92.40	81.31
81	Bahamas	0.8870	95.80	74.49
82	Albania	0.8860	99.00	67.80
83	Brazil	0.8837	90.00	85.11
84	TFYR Macedonia	0.8835	97.00	71.05
85	Costa Rica	0.8826	95.90	72.98
86	Colombia	0.8813	92.70	78.99
87	Andorra	0.8797	99.00	65.92
88	Kuwait	0.8764	94.50	73.92
89	Trinidad and Tobago	0.8761	98.70	65.42
90	Maldives	0.8754	97.00	68.63
91	Paraguay	0.8711	94.60	72.13
92	Jordan	0.8694	91.10	78.62
93	Grenada	0.8622	96.00	66.66
94	Fiji	0.8602	94.40	69.25
95	Lebanon	0.8583	89.60	78.30
96	Malaysia	0.8543	91.90	72.48
97	Indonesia	0.8540	92.00	72.20
98	China	0.8535	93.30	69.46
99	Suriname	0.8505	90.40	74.36
100	Dominica	0.8484	88.00	78.52
101	Gabon	0.8437	86.20	80.70
102	South Africa	0.8432	88.00	76.96
103	Dominican Republic	0.8391	89.10	73.53
104	Mauritius	0.8388	87.40	76.85

Human capital index and its components (cont.)

Rank	Country	Index value	Adult literacy rate (%)	Combined gross enrolment ratio for primary, secondary and tertiary schools (%)
105	Jamaica	0.8361	86.00	78.82
106	Saudi Arabia	0.8346	85.00	80.39
107	Sri Lanka	0.8343	90.80	68.68
108	Turkey	0.8339	88.70	72.76
109	Ecuador	0.8231	84.20	78.52
110	United Arab Emirates	0.8192	90.00	65.76
111	Saint Vincent and the Grenadines	0.8172	88.10	68.95
112	Namibia	0.8135	88.00	68.05
113	São Tomé and Príncipe	0.8131	87.90	68.12
114	Viet Nam	0.8098	90.30	62.33
115	Honduras	0.8007	83.60	73.01
116	Oman	0.7980	86.70	66.00
117	El Salvador	0.7935	82.00	74.05
118	Iran (Islamic Republic of)	0.7927	82.30	73.20
119	Zimbabwe	0.7895	91.20	54.44
120	Botswana	0.7881	82.90	70.62
121	Equatorial Guinea	0.7868	87.00	62.04
122	Cape Verde	0.7858	83.80	68.14
123	Syrian Arab Republic	0.7769	83.10	66.86
124	Swaziland	0.7742	83.80	64.67
125	Congo	0.7742	84.70	62.86
126	Tunisia	0.7710	77.70	75.91
127	Myanmar	0.7643	89.90	49.50
128	Nicaragua	0.7626	78.00	72.77
129	Belize	0.7609	75.10	78.07
130	Lesotho	0.7529	82.20	61.46
131	Algeria	0.7377	75.40	70.52
132	Guatemala	0.7229	73.20	70.47
133	Vanuatu	0.7134	78.10	57.81
134	Kenya	0.7027	73.60	63.60
135	Cambodia	0.7019	76.30	57.97
136	Zambia	0.7008	70.60	69.05
137	Uganda	0.6997	73.60	62.70
138	Egypt	0.6973	66.40	76.40
139	Iraq	0.6956	74.10	60.47
140	Lao People's Democratic Republic	0.6845	72.70	59.94
141	Malawi	0.6797	71.80	60.32
142	Solomon Islands	0.6763	76.60	49.68
143	Madagascar	0.6757	70.70	61.32
144	United Republic of Tanzania	0.6731	72.30	57.32
145	Nigeria	0.6567	72.00	53.01
146	Comoros	0.6553	75.10	46.39
147	India	0.6433	66.00	60.98
148	Rwanda	0.6329	64.90	60.08
149	Cameroon	0.6269	67.90	52.26
150	Ghana	0.6215	65.00	56.45
151	Democratic Republic of the Congo	0.6087	67.20	48.20
152	Nepal	0.5821	56.50	61.62
153	Morocco	0.5739	55.60	60.98
153	Yemen	0.5739	58.90	54.38
155	Liberia	0.5621	55.50	57.64
156	Djibouti	0.5599	70.30	27.37

Rank	Country	Index value	Adult literacy rate (%)	Combined gross enrolment ratio for primary, secondary and tertiary schools (%)
157	Burundi	0.5587	59.30	49.01
158	Angola	0.5473	67.40	29.40
159	Timor-Leste	0.5445	50.10	63.16
160	Mauritania	0.5435	55.80	51.44
161	Haiti	0.5420	54.80	53.00
162	Sudan	0.5389	60.90	39.86
163	Togo	0.5342	53.20	53.85
164	Bhutan	0.5325	52.80	54.14
165	Eritrea	0.5291	64.20	30.32
166	Papua New Guinea	0.5210	57.80	40.70
167	Bangladesh	0.5182	53.50	48.46
168	Pakistan	0.5026	54.20	42.37
169	Sierra Leone	0.4932	38.10	71.75
170	Mozambique	0.4918	44.40	58.75
171	Gambia	0.4609	42.50	53.27
172	Côte d'Ivoire	0.4540	48.70	38.80
173	Benin	0.4448	40.50	52.43
174	Senegal	0.4250	41.90	43.70
175	Guinea-Bissau	0.4207	44.80	36.60
176	Central African Republic	0.4194	48.60	28.62
177	Ethiopia	0.4027	35.90	49.02
178	Guinea	0.3677	29.50	51.30
179	Afghanistan	0.3641	28.00	53.23
180	Chad	0.3363	31.80	37.29
181	Mali	0.3311	26.20	46.94
182	Burkina Faso	0.3006	28.70	32.77
183	Niger	0.2819	28.70	27.16
Countries without education data				
	Democratic People's Rep. of Korea	.....	.....	.....
	Kiribati	.....	.....	75.79
	Marshall Islands	.....	.....	62.33
	Micronesia (Federated States of)	.....	.....	83.56
	Monaco	.....	99.00	.....
	Nauru	.....	.....	48.49
	San Marino	.....	99.00	.....
	Somalia	.....	.....	.....
	Tuvalu	.....	.....	69.23
Regional and economic groupings				
	Africa	0.6177	64.39	56.54
	Americas	0.8679	90.80	78.78
	Asia	0.8059	85.24	71.28
	Europe	0.9464	98.53	86.92
	Oceania	0.8381	88.69	71.84
	Developed countries	0.9502	98.49	88.14
	Developing countries other than LDCs	0.8406	88.61	74.64
	Least developed countries	0.5743	59.98	53.15
	Small island developing States	0.8136	86.39	70.84

Source: Columns 4 and 5: UNESCO

E-participation index

Rank	Country	Index value
1	Republic of Korea	1.0000
2	Australia	0.9143
3	Spain	0.8286
4	New Zealand	0.7714
4	United Kingdom	0.7714
6	Japan	0.7571
6	United States	0.7571
8	Canada	0.7286
9	Estonia	0.6857
9	Singapore	0.6857
11	Bahrain	0.6714
12	Malaysia	0.6571
13	Denmark	0.6429
14	Germany	0.6143
15	France	0.6000
15	Netherlands	0.6000
17	Belgium	0.5857
18	Kazakhstan	0.5571
19	Lithuania	0.5286
20	Slovenia	0.5143
21	Austria	0.5000
21	Norway	0.5000
23	Cyprus	0.4857
23	Sweden	0.4857
25	Croatia	0.4571
26	Colombia	0.4429
26	Ireland	0.4429
28	Kyrgyzstan	0.4286
28	Mongolia	0.4286
30	Finland	0.4143
30	Israel	0.4143
32	China	0.3714
32	Mexico	0.3714
34	Chile	0.3429
34	Malta	0.3429
36	Guatemala	0.3143
36	Hungary	0.3143
36	Uzbekistan	0.3143
39	Bulgaria	0.3000
39	Nicaragua	0.3000
39	Tunisia	0.3000
42	Brazil	0.2857
42	Egypt	0.2857
42	Jordan	0.2857
45	Latvia	0.2714
45	Lebanon	0.2714
45	Portugal	0.2714
48	Greece	0.2571
48	Ukraine	0.2571
48	Uruguay	0.2571
51	Belarus	0.2429
51	Poland	0.2429
53	Kenya	0.2286
53	Kuwait	0.2286
55	Italy	0.2143

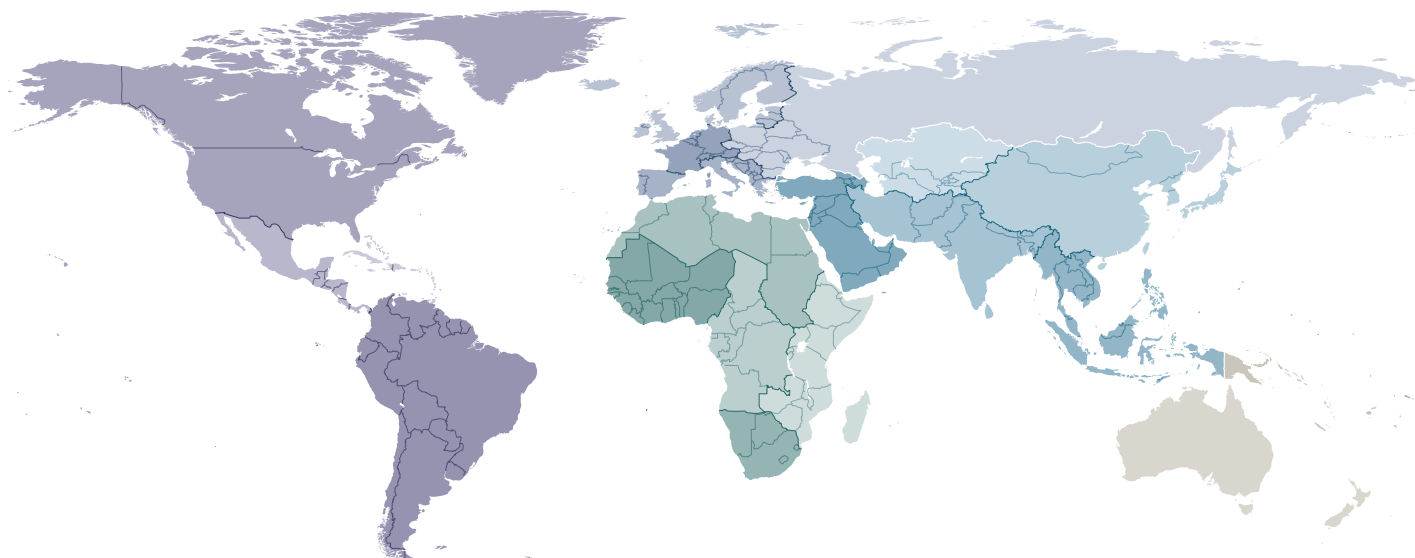
Rank	Country	Index value
55	TFYR Macedonia	0.2143
55	Turkey	0.2143
58	Argentina	0.2000
58	Bolivia	0.2000
58	Costa Rica	0.2000
58	India	0.2000
58	Republic of Moldova	0.2000
58	Switzerland	0.2000
64	Dominican Republic	0.1857
64	Philippines	0.1857
64	Romania	0.1857
64	South Africa	0.1857
68	Azerbaijan	0.1714
68	Brunei Darussalam	0.1714
68	Cape Verde	0.1714
68	Côte d'Ivoire	0.1714
68	Libya	0.1714
68	Luxembourg	0.1714
68	Pakistan	0.1714
68	Peru	0.1714
76	Antigua and Barbuda	0.1571
76	Cameroon	0.1571
76	Congo	0.1571
76	Ecuador	0.1571
76	Montenegro	0.1571
76	Oman	0.1571
82	Andorra	0.1429
82	Grenada	0.1429
82	Sri Lanka	0.1429
82	Venezuela	0.1429
86	Albania	0.1286
86	Czech Republic	0.1286
86	Honduras	0.1286
86	Indonesia	0.1286
86	Lao People's Democratic Republic	0.1286
86	Liechtenstein	0.1286
86	Morocco	0.1286
86	Qatar	0.1286
86	Russian Federation	0.1286
86	Trinidad and Tobago	0.1286
86	United Arab Emirates	0.1286
97	Cambodia	0.1143
97	Cuba	0.1143
97	Mali	0.1143
97	Mauritania	0.1143
97	Mozambique	0.1143
102	Bangladesh	0.1000
102	Barbados	0.1000
102	Belize	0.1000
102	Botswana	0.1000
102	Niger	0.1000
102	Saudi Arabia	0.1000
102	Sudan	0.1000
102	Togo	0.1000

Rank	Country	Index value
110	Equatorial Guinea	0.0857
110	Ghana	0.0857
110	Guyana	0.0857
110	Jamaica	0.0857
110	Lesotho	0.0857
110	Thailand	0.0857
110	Viet Nam	0.0857
117	Angola	0.0714
117	Bahamas	0.0714
117	Benin	0.0714
117	Bhutan	0.0714
117	El Salvador	0.0714
117	Guinea-Bissau	0.0714
117	Iran (Islamic Republic of)	0.0714
117	Maldives	0.0714
117	Slovakia	0.0714
117	Uganda	0.0714
127	Afghanistan	0.0571
127	Burkina Faso	0.0571
127	Chad	0.0571
127	Comoros	0.0571
127	Georgia	0.0571
127	Madagascar	0.0571
127	Mauritius	0.0571
127	Nepal	0.0571
135	Armenia	0.0429
135	Bosnia and Herzegovina	0.0429
135	Ethiopia	0.0429
135	Iceland	0.0429
135	Iraq	0.0429
135	Serbia	0.0429
135	Seychelles	0.0429
135	United Republic of Tanzania	0.0429
135	Yemen	0.0429
144	Djibouti	0.0286
144	Dominica	0.0286
144	Eritrea	0.0286
144	Fiji	0.0286
144	Gabon	0.0286
144	Guinea	0.0286
144	Liberia	0.0286
144	Marshall Islands	0.0286
144	Monaco	0.0286
144	Rwanda	0.0286
144	Saint Lucia	0.0286
144	Tajikistan	0.0286
144	Zimbabwe	0.0286
157	Algeria	0.0143
157	Burundi	0.0143
157	Democratic Republic of the Congo	0.0143
157	Gambia	0.0143
157	Kiribati	0.0143

Rank	Country	Index value
157	Micronesia (Federated States of)	0.0143
157	Namibia	0.0143
157	Nauru	0.0143
157	Nigeria	0.0143
157	Palau	0.0143
157	Papua New Guinea	0.0143
157	Paraguay	0.0143
157	Saint Kitts and Nevis	0.0143
157	Saint Vincent and the Grenadines	0.0143
157	Samoa	0.0143
157	San Marino	0.0143
157	São Tomé and Príncipe	0.0143
157	Senegal	0.0143
157	Solomon Islands	0.0143
157	Syrian Arab Republic	0.0143
157	Timor-Leste	0.0143
157	Tonga	0.0143
157	Vanuatu	0.0143
Countries without e-participation data		
	Central African Republic	
	Democratic People's Republic of Korea	
	Haiti	
	Malawi	
	Myanmar	
	Panama	
	Sierra Leone	
	Somalia	
	Suriname	
	Swaziland	
	Turkmenistan	
	Tuvalu	
	Zambia	
Regional and economic groupings		
	Africa	0.0845
	Americas	0.1982
	Asia	0.2396
	Europe	0.3236
	Oceania	0.1440
	Developed countries	0.3867
	Developing countries other than LDCs	0.1840
	Least developed countries	0.0599
	Small island developing States	0.0773

Map 4.6

Regional groupings



Americas

Caribbean

- Anguilla
- Antigua and Barbuda
- Aruba
- Bahamas
- Barbados
- British Virgin Islands
- Cayman Islands
- Cuba
- Dominica
- Dominican Republic
- Grenada
- Guadeloupe
- Haiti
- Jamaica
- Martinique
- Montserrat
- Netherlands Antilles
- Puerto Rico
- Saint-Barthélemy
- Saint Kitts and Nevis
- Saint Lucia
- Saint Martin (French part)
- Saint Vincent and the Grenadines
- Trinidad and Tobago
- Turks and Caicos Islands
- United States Virgin Islands

Central America

- Belize
- Costa Rica
- El Salvador
- Guatemala
- Honduras
- Mexico
- Nicaragua
- Panama

Northern America

- Bermuda
- Canada
- Greenland
- Saint Pierre and Miquelon
- United States of America

South America

- Argentina
- Bolivia
- Brazil
- Chile
- Colombia
- Ecuador
- Falkland Islands (Malvinas)
- French Guiana
- Guyana
- Paraguay
- Peru
- Suriname
- Uruguay
- Venezuela

Europe

Eastern Europe

- Belarus
- Bulgaria
- Czech Republic
- Hungary
- Poland
- Republic of Moldova
- Romania
- Russian Federation
- Slovakia
- Ukraine

Northern Europe

- Åland Islands
- Channel Islands
- Denmark
- Estonia
- Faeroe Islands
- Finland
- Guernsey
- Iceland
- Ireland
- Isle of Man
- Jersey
- Latvia
- Lithuania
- Norway
- Svalbard and Jan Mayen Islands
- Sweden
- United Kingdom of Great Britain and Northern Ireland

Southern Europe

- Albania
- Andorra
- Bosnia and Herzegovina
- Croatia
- Gibraltar
- Greece
- Holy See
- Italy
- Malta
- Montenegro
- Portugal
- San Marino
- Serbia
- Slovenia
- Spain
- The former Yugoslav Republic of Macedonia

Western Europe

- Austria
- Belgium
- France
- Germany
- Liechtenstein
- Luxembourg
- Monaco
- Netherlands
- Switzerland

Africa

Eastern Africa

- Burundi
- Comoros
- Djibouti
- Eritrea
- Ethiopia
- Kenya
- Madagascar
- Malawi
- Mauritius
- Mayotte
- Mozambique
- Réunion
- Rwanda
- Seychelles
- Somalia
- Uganda
- United Republic of Tanzania
- Zambia
- Zimbabwe

Middle Africa

- Angola
- Cameroon
- Central African Republic
- Chad
- Congo
- Democratic Republic of the Congo
- Equatorial Guinea
- Gabon
- São Tomé and Príncipe

Northern Africa

- Algeria
- Egypt
- Libyan Arab Jamahiriya
- Morocco
- Sudan
- Tunisia
- Western Sahara

Southern Africa

- Botswana
- Lesotho
- Namibia
- South Africa
- Swaziland

Western Africa

- Benin
- Burkina Faso
- Cape Verde
- Côte d'Ivoire
- Gambia
- Ghana
- Guinea
- Guinea-Bissau
- Liberia
- Mali
- Mauritania
- Niger
- Nigeria
- Saint Helena
- Senegal
- Sierra Leone
- Togo

Asia

Central Asia

- Kazakhstan
- Kyrgyzstan
- Tajikistan
- Turkmenistan
- Uzbekistan

Eastern Asia

- China
- Hong Kong Special Administrative Region of China
- Macao Special Administrative Region of China
- Democratic People's Republic of Korea
- Japan
- Mongolia
- Republic of Korea

Southern Asia

- Afghanistan
- Bangladesh
- Bhutan
- India
- Iran (Islamic Republic of)
- Maldives
- Nepal
- Pakistan
- Sri Lanka

South-Eastern Asia

- Brunei Darussalam
- Cambodia
- Indonesia
- Lao People's Democratic Republic
- Malaysia
- Myanmar
- Philippines
- Singapore
- Thailand
- Timor-Leste
- Viet Nam

Western Asia

- Armenia
- Azerbaijan
- Bahrain
- Cyprus
- Georgia
- Iraq
- Israel
- Jordan
- Kuwait
- Lebanon
- Oman
- Qatar
- Saudi Arabia
- Syrian Arab Republic
- Turkey
- United Arab Emirates
- Yemen

Oceania

Australia and New Zealand

- Australia
- New Zealand
- Norfolk Island

Melanesia

- Fiji
- New Caledonia
- Papua New Guinea
- Solomon Islands
- Vanuatu

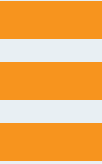
Micronesia

- Guam
- Kiribati
- Marshall Islands
- Micronesia (Federated States of)
- Nauru
- Northern Mariana Islands
- Palau

Polynesia

- American Samoa
- Cook Islands
- French Polynesia
- Niue
- Pitcairn
- Samoa
- Tokelau
- Tonga
- Tuvalu
- Wallis and Futuna Islands

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United Nations E-Government Survey 2010

Leveraging e-government at a time of financial and economic crisis

The United Nations global survey of e-government presents a systematic assessment of the use and potential of information and communication technology to transform the public sector by enhancing transparency, efficiency, access to public services and citizen participation in all countries and at all levels of development. By studying broad patterns of e-government around the world, the report identifies leading countries in e-government development. It also suggests a way forward for those that have yet to take advantage of its tremendous power.

The 2010 edition of the survey was prepared against a backdrop of financial and economic crisis that is putting tremendous pressure on governments to do more with less. The report examines transparency of stimulus funding and finds that open data – the free sharing of government information based on common standards – could do a great deal to assuage unease and regain the public trust. The authors also argue that e-government technology, while no substitute for good policy, may provide regulators with a much-needed means of grappling with the speed and complexity of financial markets. Similarly, e-government can add agility to public service delivery and help governments respond to an expanded set of demands even as revenues fall short and deficits soar. This report, the fifth in the United Nations e-government series, tells us how.

The United Nations E-Government Survey is a product of the United Nations Department of Economic and Social Affairs. The department, through its Division for Public Administration and Development Management, has published this world report on e-government since 2003 and is regularly called upon to advise national administrations on ways to expand public sector use of ICT to advance on internationally-agreed development goals, including the Millennium Development Goals.

For more information

Visit the UN Department of Economic and Social Affairs at:

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