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Global E-Government, 2004

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Executive Summary

Electronic government refers to public sector use of the Internet and other digital devices to deliver services and information. Although personal computers have been around for several decades, recent advances in networking, video imaging, and graphics interfacing have allowed governments to develop websites that contain a variety of online materials. As discussed in my forthcoming book, *Digital Government: Technology and Public Sector Performance* (Princeton University Press, 2005), electronic government is supplanting traditional means of access based on personal visits, phone calls, and mail delivery.

Governments around the world have created websites that facilitate tourism, citizen complaints, and business investment. Tourists can book hotels through the government websites of many Caribbean and Pacific island countries. In Australia, citizens can register government complaints through agency websites. Nations such as Bulgaria, the Netherlands, and the Czech Republic are attracting overseas investors through their websites.

In this report, I present the fourth annual update on global e-government. I study what is online globally and how electronic government has changed over the past four years. Using a detailed analysis of 1,935 government websites in 198 different nations undertaken during Summer, 2004, I chart the variations that exist across regions and countries, and discuss the pace at which e-government is unfolding around the world.

In looking at electronic government from 2001 to 2004, I find that progress is being made, albeit at an incremental pace. Governments are showing steady progress on several important dimensions, but not major leaps forward. On several key indicators, e-government performance is edging up. However, movement forward has not been more extensive in some areas because budget, bureaucratic, and institutional forces have limited the extent to which the public sector has incorporated technology into their mission.

Among the significant findings of the research are:

- 1) 21 percent of government websites offer services that are fully executable online, up from 16 percent in 2003, 12 percent in 2002, and eight percent in 2001.
- 2) 89 percent of websites this year provide access to publications and 62 percent have links to databases.
- 3) 14 percent (up from 12 percent in 2003) show privacy policies, while 8 percent have security policies (up from 6 percent in 2003).
- 4) 14 percent of government websites have some form of disability access, meaning access for persons with disabilities, the same as in 2003.
- 5) Countries vary enormously in their overall e-government performance based on our analysis. The most highly ranked nations include Taiwan, Singapore, United States, Canada, Monaco, China, Australia, Togo, and Germany.
- 6) There are major differences in e-government performance based on region of the world. In general, countries in North America score the highest, followed by Asia, Western Europe, Pacific Ocean Islands, Middle East, Eastern Europe, Russia and Central Asia, South America, Central America, and Africa.

A Note on Methodology

The data for our analysis consist of an assessment of 1,935 national government websites for the 198 nations around the world (see Appendix for the full list of countries). We analyze a range of sites within each country to get a full sense of what is available in particular nations. Among the sites analyzed are those of executive offices (such as a president, prime minister, ruler, party leader, or royalty), legislative offices (such as Congress, Parliament, or People's Assemblies), judicial offices (such as major national courts), Cabinet offices, and major agencies serving crucial functions of government, such as health, human services, taxation, education, interior, economic development,

administration, natural resources, foreign affairs, foreign investment, transportation, military, tourism, and business regulation. Websites for subnational units, obscure boards and commissions, local government, regional units, and municipal offices are not included in this study. The analysis was undertaken during June and July, 2004 at Brown University in Providence, Rhode Island. Tabulation for this project was completed by Ruth Brown, Kelly Donnelly, Tolga Erem, Zhizhan Gu, Masha Kirasirova, Ammar Shaikhouni, and Molly Bronson. National government website addresses can be found at www.OutsidePolitics.org/world.html.

The regional breakdowns for the websites we studied are 20 percent from Western European countries, followed by 17 percent from Africa, 14 percent from Asia, 12 percent Eastern Europe, 8 percent the Middle East, 7 percent South America, 5 percent Pacific Ocean countries (meaning those off the Asian continent), 6 percent from Central America, 6 percent North America (which included Canada, the United States, and Mexico), and 5 percent Russia and Central Asia (such as the areas of the former Soviet Union).

Websites are evaluated for the presence of various features dealing with information availability, service delivery, and public access. Features assessed included the name of the nation, region of the world, and having the following features: online publications, online database, audio clips, video clips, non-native languages or foreign language translation, commercial advertising, premium fees, user payments, disability access, privacy policy, security features, presence of online services, number of different services, digital signatures, credit card payments, email address, comment form, automatic email updates, website personalization, personal digital assistant (PDA) access, and an English version of the website.

Where national government websites are not in English, our research team employed foreign language readers who translate and evaluate national government websites. In some cases, we have made use of foreign language translation software available online through <http://babelfish.altavista.com>. Some of the non-English websites are assessed in part through English translations of portions of the websites.

Online Information

In looking at specific features of government websites, we want to see how much material was available that would inform citizens. Most agencies have made extensive progress at placing information online for public access. Eighty-nine percent of government websites around the world offer publications that a citizen could access (the same as in 2003 and up from 77 percent in 2002), and 62 percent provided databases (down from 73 percent last year).

Percentage of Websites Offering Publications and Databases

	2001	2002	2003	2004
<i>Phone Contact Info.</i>	70%	77%	--	--
<i>Address Info</i>	67	77	--	--
<i>Links to Other Sites</i>	42	82	--	--
<i>Publications</i>	71	77	89	89
<i>Databases</i>	41	83	73	62
<i>Audio Clips</i>	4	8	8	12
<i>Video Clips</i>	4	15	8	13

Most public sector websites do not incorporate audio clips or video clips on their official sites. Despite the fact that these are becoming much more common features of e-commerce and private sector enterprise, only 12 percent of government websites provide audio clips and 13 percent have

video clips. These are slightly higher than the 8 percent of sites last year that featured audio and video clips.

Electronic Services

For e-government service delivery, we look at the number and type of online services offered. Features are defined as services only if the entire transaction can occur online. If a citizen has to print out a form and then mail it back to the agency to obtain the service, we do not count that as a service that can be fully executed online. Searchable databases count as services only if they involved accessing information that result in a specific government service response.

Of the websites examined around the world, however, 21 percent offer services that are fully executable online, which is up from 16 percent in 2003 and 12 percent in 2002. Of this group, 11 percent offer one service, four percent have two services, and six percent have three or more services. Seventy-nine percent have no online services.

Number of Online Services

	2001	2002	2003	2004
None	92%	88%	84%	79%
One	5	7	9	11
Two	1	2	3	4
Three or more	2	3	4	6

North America (including the United States, Canada, and Mexico) is the area offering the highest percentage of online services. Fifty-three percent (up from 45 percent last year) had fully executable, online services. This was followed by Pacific Ocean islands (43 percent), Asia (30 percent), Western Europe (29 percent), and the Middle East (19 percent). Only 2 percent in Russia/Central Asia, 8 percent in Africa, and 8 percent of sites in Eastern Europe offer online government services.

Percentage of Government Sites Offering Online Services by Region of World

	2001	2002	2003	2004
<i>North America</i>	28%	41%	45%	53%
<i>Pacific Ocean Islands</i>	19	14	17	43
<i>Asia</i>	12	26	26	30
<i>Middle East</i>	10	15	24	19
<i>Western Europe</i>	9	10	17	29
<i>Eastern Europe</i>	--	2	6	8
<i>Central America</i>	4	4	9	17
<i>South America</i>	3	7	14	10
<i>Russia/Central Asia</i>	2	1	1	2
<i>Africa</i>	2	2	5	8

As the e-government industry expands worldwide, the complexity and specificity of online services continues to develop. Many nations have sites devoted specifically to e-government, on which they present new initiatives as well as offer listings of services available online. For example, Taiwan, Singapore, and the United States have highly developed portals, which serve as gateways to a plethora of government services as well as directories to other specific government sites.

International services have developed in response to the increasing popularity and prevalence of SMS (Short Message Service) via mobile phones. Many of Norway's government sites contain explanations of how SMS works and instructions as to how citizens can contact a variety of national agencies by way of their text messaging service. Sites for the Republic of Congo and Singapore also endorse the use of text-messaging as a means of contacting government officials. Increased technological development has also allowed many sites to become more disability-friendly. For example, the Finnish Ministry of the Interior site gives users the option to adjust the size of the font, while some Swedish agencies provide audio versions of the text and information contained on the screen.

Several sites, such as the British Prime Minister, display links to information about the Bobby program, a disability screening mechanism that serves to verify if a site is properly accessible to disabled citizens. Other novel services are of a more unique variety. The Greek Foreign Affairs site gives visitors the option to learn basic Greek online, while the Polish government portal provides a link to a live video feed of Polish storks. Interestingly, some nations have begun to use the Internet as a means to encourage romance among their citizens. Moroccan online classified ads contain a special section for personals, while Singapore provides a "love byte" website that gives citizens the opportunity to "find [their] soul mate" online.

Despite the increased complexity and technological development on many international sites, there remain problems with government sites. For example the Tanzania portal contains a large number of broken links, while hackers temporarily took over Zambian tourist board site. Intruders substituted the slogan "Hackers Rule" along with a picture of a penguin on this agency website. Meanwhile, during the summer of 2004, the Malawi Ministry of Agriculture and Irrigation had a link to a section entitled "USAID Food Security Reports" that took visitors to a commercial site showing hard-core pornography.

One feature that has slowed the development of online services has been an inability to use credit cards and digital signatures on financial transactions. On commercial sites, it is becoming a more common practice to offer goods and services online for purchase through the use of credit cards. However, of the government websites analyzed, only 4 percent (up from 2 percent in 2003) accept credit cards and sixth-tenths of 1 percent allowed digital signatures for financial transactions (up from one-tenth of 1 percent last year).

Of the 198 nations analyzed, there is wide variance in the number of online services provided by different governments. The country with the largest number of services is Singapore, with an average of 9.5 services across its various government agencies. This is followed by Bahrain (5.0 services), China (3.2 services), the Bahamas (3.0 services), the United States (2.9 services), Hong Kong (2.5 services), Australia (2.3 services), and New Zealand (2.1 services). It is important to keep in mind that our definition of services included only those services that were fully executable online. If a citizen has to print out a form and mail or take it to a government agency to execute the service, we do not count that as an online service.

Privacy and Security

Having visible statements outlining what the site is doing on privacy and security are valuable assets for reassuring a fearful population to make use of e-government services and information. However, few global e-government sites offer policy statements dealing with these topics. Only 14 percent (up from 12 percent in 2003) of examined sites have some form of privacy policy on their site, and 8 percent have a visible security policy (up from 6 percent). Both of these are areas that government officials need to take much more seriously. Unless ordinary citizens feel safe and secure in their online information and service activities, e-government is not going to grow very rapidly.

	2001	2002	2003	2004

Privacy	6%	14%	12%	14%
Security	3	9	6	8

There are widespread variations across the nations in providing privacy policies on their websites. The countries with the highest percentage of websites offering a visible privacy policy are Malta, the Bahamas, Saint Vincent, Togo, Dominica, and Iraq (each with 100 percent of its sites). These nations were followed by Australia and Singapore (97 percent), Canada (90 percent), and the United States (82 percent).

Despite the importance of security in the virtual world, there are wide variations across nations in the percentage of websites showing a security policy. The countries most likely to show a visible security policy are Iraq (100 percent of its sites), Singapore (93 percent), the United States (67 percent), Taiwan (54 percent), Great Britain (41 percent), China (35 percent), Saint Lucia (25 percent), Belize (25 percent), Germany (23 percent), and Australia (23 percent).

In order to assess particular aspects of privacy and security, we evaluated the content of these publicly posted statements. For privacy policies, we look at several features: whether the privacy statement prohibits commercial marketing of visitor information; use of cookies or individual profiles of visitors; disclosure of personal information without the prior consent of the visitor, or disclosure of visitor information with law enforcement agents. In general, we found weak protections of visitor privacy. For example, only 10 percent of government websites prohibit the commercial marketing on visitor information; just six percent prohibit cookies, 10 percent prohibit sharing personal information, and 8 percent share information with law enforcement agents. And in regard to security policies, 9 percent indicate that they use computer software to monitor traffic.

Disability Access

We tested disability access by examining the actual accessibility of government websites through the automated "Bobby 5.0" software produced by Watchfire, Inc. (<http://bobby.watchfire.com>). This commercial firm offers software that tests websites against standards of compliance with the standards recommended by the World Wide Web Consortium (W3C).

For our test, we used the Priority Level One standard and evaluated each government agency regarding whether it complies with the W3C guidelines. Sites are judged to be either in compliance or not in compliance based on the results of this test. According to our Bobby analysis, 14 percent of government websites are accessible to the disabled, the same as last year. Clearly, more work needs to be undertaken to make government sites accessible to all who wish to use them.

The country whose sites had the largest number of disability error problems, as judged by the Watchfire, Inc. Bobby software, was Togo. Its sites averaged 231 disability problems per site. Togo was followed by Saint Lucia (an average of 152 errors), Dominica (87 errors), Somalia (80 errors), Uzbekistan (77 errors), the Republic of Congo (75 errors), China (72 errors), Latvia (72 errors), Russia (65 errors), and Liechtenstein (63 errors).

Foreign Language Access

Fifty percent of national government websites have foreign language features that allow access to non-native speaking individuals, about the same as the 51 percent last year. By foreign language feature, we mean any accommodation to the non-native speakers in a particular country, such as text translation into a different language. Many have no language translation on their site other than their native tongue. Seventy-seven percent offer at least some portion of their websites in English.

	2001	2002	2003	2004
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Foreign Language Translation	45%	43%	51%	50%
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Ads, User Fees, and Premium Fees

Many nations are struggling with the issue of how to pay for electronic governance. When defining an advertisement, we eliminate computer software available for free download (such as Adobe Acrobat Reader, Netscape Navigator, and Microsoft Internet Explorer) since they are necessary for viewing or accessing particular products or publications. Links to commercial products or services available for a fee were included as advertisements as were banner, pop-up, and fly-by advertisements.

As shown below, only 4 percent of government websites in 2004 rely on ads (up from 2 percent last year). The countries with the greatest reliance on advertisements include Afghanistan, Bahrain, Bhutan, Central Africa Republic, Comoros, Democratic Republic of Congo, Republic of Congo, Costa Rica, Antigua, and Eritrea (each with 100 percent of its government websites having ads).

	2001	2002	2003	2004
Ads	4%	8%	2%	4%
User Fees	--	1	0.2	1.3
Premium Fees	--	0	0.2	0.7

While it appears that the vast majority of governmental agencies do not turn to commercial advertising in order to finance their sites, many travel and tourism sites contain advertisements. For example, the Czech Republic site has ads for hotels, travel services (Expedia), IBM, and T-Mobile. The Ghana tourism site has a commercial for tour guides. The Grenada tourism agency offers ads for hotels and tours. Malaysia has advertisements for Malaysia Airlines, while Antigua has commercials for Air Jamaica and Geographia Travel Services.

However, other sites also provide advertisements. Afghanistan has an ad for www.islam411.com, which provides a "Brief Illustrated Guide to Islam". Albania provides commercials promoting responsible fisheries. Costa Rica has an ad for Real Video TV. The Cuban Science and Technology site has an advertisement for www.travels2cuba.com. The Comoros portal offers ads for Internet service.

In general, user fees are relatively scarce among the sites we examined. Most services and databases could be completed or obtained by mail or in person at no additional charge. The few that were found (1.3 percent of all sites) included charges applied in order to access publications or databases, or to register as a member of a particular database.

The nation with the greatest employment of user fees is China, with 35 percent of its sites having user fees. Other nations relying on user fees are Taiwan (19 percent of its sites), the United States (8 percent), Australia (6 percent), Argentina (8 percent), Singapore (3 percent), and Germany (3 percent).

Examples of user fees include a \$100 charge for Canadian textile companies to apply for a Competition Act ID number, which is used to meet regulations from the Textile Labeling Act. By registering, textile companies are able to search the CA Number Database which contains the name and postal addresses of all Canadian textile business who have been assigned a CA ID number, and also allows the retailer to perform electronic transactions with Industry Canada. Canada also offers many of their Internet publications, located on the Statistics site, for a fee, although certain statistical publications are offered for viewing free of charge as well. The site has made it easy and convenient to pay the minimal charge with a credit card and immediately download the publication.

The United States Court of Appeals has a program available online called Public Access to Courts Electronic Records (PACER). This service allows users to acquire case and docket information from the Federal Appellate, District and Bankruptcy courts, as well as from the U.S.

Party/Case Index. To view this database, a free registration with username and password is required, and once registered, a userfee of \$.07 per page is charged for access to web based PACER systems, and \$.60 per minute for access to dial-up. Not all courts participate in this, and the search categories include name or social security number in the bankruptcy index, name or nature of suit in the civil index, defendant name in the criminal index, or party name within the appellate index. The results found will be those of the party name, location of the court where the case was filed, case number, as well as the filing date.

Less than one percent of sites had premium sections that charged fees. Examples of countries having premium fee areas are the Republic of Congo (100 percent), Vietnam (13 percent), the United States (10 percent), Djibouti (10 percent), Switzerland (7 percent), Oman (6 percent), and Singapore (3 percent).

Public Outreach

E-government offers the potential to bring citizens closer to their governments. Regardless of the type of political system that a country has, the public benefits from interactive features that facilitate communication between citizens and government. In our examination of national government websites, we look for various features that would help citizens contact government officials and make use of information on websites.

Email is an interactive feature that allows ordinary citizens to pose questions of government officials or request information or services. In our study, we find that 88 percent (up from 84 percent in 2003) of government websites offered email contact material so that a visitor could email a person in a particular department other than the Webmaster.

Percentage of Government Websites Offering Public Outreach

	2001	2002	2003	2004
<i>Email</i>	73%	75%	84%	88%
<i>Search</i>	38	54	--	--
<i>Comments</i>	8	33	31	16
<i>Email Updates</i>	6	10	12	16
<i>Broadcast</i>	2	2	--	--
<i>Website Personalization</i>	--	1	1	2
<i>PDA Access</i>	--	--	2	1

Sixteen percent offer areas to post comments (other than through email), the use of message boards, and chat rooms. Websites using these features allow citizens and department members alike to read and respond to others' comments regarding issues facing the department. Sixteen percent (up from 12 percent last year) of government websites allow citizens to register to receive updates regarding specific issues. With this feature, web visitors can input their email addresses, street addresses, or telephone numbers to receive information about a particular subject as new information becomes available. The information can be in the form of a monthly e-newsletter highlighting a prime minister's views or in the form of alerts notifying citizens whenever a particular portion of the website is updated. Two percent of sites allow websites to be personalized to the interests of the visitor, and one percent provide personal digital assistant (PDA) access, about the same as last year.

Top E-Government Countries

In order to see how the 198 nations ranked overall, we create a 0 to 100 point e-government index and apply it to each nation's websites based on the availability of publications, databases, and number of online services. Four points are awarded to each website for the presence of the following

features: publications, databases, audio clips, video clips, foreign language access, not having ads, not having premium fees, not having user fees, disability access, having privacy policies, security policies, allowing digital signatures on transactions, an option to pay via credit cards, email contact information, areas to post comments, option for email updates, option for website personalization, and PDA accessibility. These features provide a maximum of 72 points for particular websites.

Each site then qualifies for a bonus of 28 points based on the number of online services executable on that site (1 point for one service, two points for two services, three points for three services, and on up to twenty-eight points for twenty-eight or more services). The e-government index runs along a scale from zero (having none of these features and no online services) to 100 (having all features plus at least 28 online services). Totals for each website within a country were averaged across all of that nation's websites to produce a zero to 100 overall rating for that nation.

The top country in our ranking is Taiwan at 44.3 percent. This means that every website we analyzed for that nation has just less than half of the features important for information availability, citizen access, portal access, and service delivery. Other nations that score well on e-government include Singapore (43.8), United States (42.9 percent), Canada (40.3 percent), Monaco (39.0), China (37.3), Australia (36.7 percent), Togo (36.0), and Germany (35.0). The Appendix lists e-government scores for each of the 198 countries, plus comparisons between 2003 and 2004.

Differences by Region of World

There are some differences in e-government by region of the world. In looking at the overall e-government scores by region, North America scores the highest (39.2 percent), followed by Asia (31.6 percent), Western Europe (30.0 percent), Pacific Ocean Islands (29.9 percent), Middle East (28.1 percent), Eastern Europe (28.0 percent), Russia and Central Asia (25.3 percent), South America (24.3 percent), Central America (24.1 percent), and Africa (22.0 percent).

E-Government Ratings by Region

	2001	2002	2003	2004
North America	51.0%	60.4	40.2	39.2
Western Europe	34.1	47.6	33.1	30.0
Eastern Europe	--	43.5	32.0	28.0
Asia	34.0	48.7	34.3	31.6
Middle East	31.1	43.2	32.1	28.1
Russia/Central Asia	30.9	37.2	29.7	25.3
South America	30.7	42.0	29.5	24.3
Pacific Ocean Islands	30.6	39.5	32.1	29.9
Central America	27.7	41.4	28.6	24.1
Africa	23.5	36.8	27.6	22.0

In looking at regional differences by particular feature, North America, Asia, and Western Europe rank most highly on services, while North America, Pacific Ocean Islands, and Western Europe score highest on access to databases. The areas providing the greatest degree of accessibility through foreign language translation are Eastern Europe, the Middle East, Asia, and Western Europe.

	Nor Am	Cent Am	S. Am	Wes Eur	Eas Eur	Rus	Mid Eas	Afri	Asia	Pac Oc
<i>Publication</i>	99%	86%	96%	95%	92%	89%	86%	79%	09%	84%
<i>Database</i>	87	52	61	66	55	72	80	42	66	59

<i>Audio Clip</i>	25	13	13	13	8	2	14	6	16	11
<i>Video Clip</i>	32	7	8	16	11	4	11	6	21	13
<i>Foreign Lang</i>	58	14	6	65	100	59	68	14	66	11
<i>Ads</i>	0	7	1	1	2	13	13	4	4	0
<i>Premium Fee</i>	5	0	0	1	0	0	1	1	1	0
<i>User Fee</i>	6	0	1	0	0	0	0	0	5	2
<i>Privacy</i>	69	10	4	14	3	0	4	1	22	48
<i>Security</i>	44	4	2	5	0	0	3	0	20	11
<i>Disability</i>	47	8	6	26	16	1	1	4	8	39
<i>Services</i>	53	17	10	29	8	2	19	8	30	43
<i>Credit Cards</i>	16	2	0	6	1	2	1	0	6	9
<i>Digital Sign</i>	2	1	0	0	0	0	1	0	2	0
<i>Email</i>	92	83	88	95	91	70	88	84	85	82
<i>Comment</i>	27	14	8	9	7	27	33	10	28	20
<i>Updates</i>	40	8	10	22	11	13	8	6	22	23
<i>Personal</i>	5	0	1	1	1	3	2	1	3	0
<i>PDA Access</i>	3	0	1	0	0	1	0	0	1	0

Conclusion

Overall, it appears that some progress has been made in global e-government over the past year. Many nations are offering new online services, thereby acknowledging the growing role of technology in everyday life. For example, nations such as Norway offer extensive information regarding how to communicate with government officials via text messaging on mobile phones. In addition, other nations including Taiwan provide pages that are compatible with handheld PDA devices. Such features increase the capability of citizens to attain connections with their government and suggest that governmental communications are evolving along with general advancements in society.

Despite this movement forward, there are still a variety of issues with global sites that hinder their ability to reach their full potential in terms of accessibility and effectiveness. For example, sites for nations such as Tanzania include several links that don't work. Other nations have links that take an incredibly long time to load or lead users to incorrect sites. It is important for those designing these websites to ensure that all links are properly functional and that they do indeed lead users to their desired locations in order to be adequately user-friendly.

Another issue with website design is the fact that many sites are under construction or have not been updated for long periods of time. Designers must attempt to keep the sites as up to date as possible to ensure that all information presented is accurate and complete. Furthermore, while many sites offered links to email addresses, several such links connected the visitor to an address of a webmaster as opposed to an actual government official. If a link connects the user with a webmaster, it is important to clearly indicate this fact so that no one is misled to send site designers questions that are actually directed to government officials. Alternatively, it is beneficial to create comment templates through which visitors can make inquiries directly online without having to send messages from their own email accounts. This increases the ease with which citizens can communicate with members of their government.

One aspect in particular which made websites more accessible and uncomplicated was the level of organization. Sites which offered A-to-Z indexes, a clear list of links to government agency or department web pages, or organized their online services by agency or function instead of one comprehensive list were much more navigable and user-friendly. It was easy to use these sites and find information that we wanted. Governments which arranged their websites with a common template for all agencies cater to the needs of online users by providing a familiar background on each

page which made finding publications, privacy statements or e-mail contacts much more straightforward. Encountering an intricate and convoluted portal makes users less likely to explore the site and be able to find desired information or online services.

Websites that were bilingual or multi-lingual were helpful to facilitating accessibility, as long as the link actually took the user to the intended language. Links which automatically reverted back to the original language made for a frustrating and unrewarding Internet experience. Switzerland is an ideal example of employing multiple language translations of their websites. Every translation is comprehensive and every link stays within the intended language.

Nations with developed websites were a pleasure to explore and learn about the country and frequently offered services online. The biggest impediments to investigating a government's site were lack of organization and cluttered portals, as well as technical difficulties and language barriers. With some changes to the outline of the website, governments can increase the accessibility and user-friendliness of their sites. In the long-run, this will increase citizen usage and bring down the costs of electronic government.

Appendix

Taiwan	44.3	Singapore	43.8
United States	41.9	Canada	40.3
Monaco	39.0	China	37.3
Australia	36.7	Togo	36.0
Germany	35.0	Iraq	34.0
Hong Kong	33.7	New Zealand	33.6
Italy	33.2	Great Britain	33.0
Liechtenstein	33.0	Bahrain	33.0
Dominica	33.0	France	32.8
Israel	32.3	Marshall Islands	32.0
Moldova	32.0	Saint Vincent and the Grenadines	32.0
Bolivia	32.0	Indonesia	32.0
Malta	31.4	Belgium	31.3
Netherlands	31.0	Czech Republic	30.9
Japan	30.8	Saudi-Arabia	30.7
Denmark	30.6	South Korea	30.5
Kuwait	30.1	Ireland	29.9
Sweden	29.8	Jordan	29.7
India	29.6	Luxembourg	29.6
Mexico	29.6	Chile	29.2
Finland	29.1	Lebanon	29.0
Maldives	29.0	Palau	29.0
Iran	29.0	Poland	28.6
Oman	28.5	Estonia	28.5
Qatar	28.3	Uzbekistan	28.3
Austria	28.2	Greece	28.1
Iceland	28.1	Latvia	28.0
Myanmar	28.0	Belize	28.0
Egypt	28.0	Guyana	28.0
North Korea	28.0	Slovakia	27.9

Slovenia	27.7	Turkey	27.6
Philippines	27.6	Switzerland	27.6
Thailand	27.6	Romania	27.5
Armenia	27.5	Serbia and Montenegro	27.5
Lithuania	27.3	Croatia	27.2
Bahamas	27.0	Norway	27.0
Saint Lucia	27.0	Bangladesh	26.8
Cyprus (Republic)	26.8	Peru	26.7
Vietnam	26.5	Cambodia	26.5
Spain	26.5	Panama	26.4
Bulgaria	26.3	Sudan	26.3
Andorra	26.2	Malaysia	26.2
El Salvador	26.1	Afghanistan	26.0
Madagascar	26.0	Mauritania	26.0
Portugal	26.0	Vatican	26.0
Congo (Republic)	26.0	Gambia	26.0
Ukraine	25.8	Mongolia	25.7
Morocco	25.6	Albania	25.6
Hungary	25.4	Laos	25.3
Bosnia and Herzegovina	25.3	Georgia	25.3
Botswana	25.0	Colombia	24.8
Belarus	24.7	Pakistan	24.6
Yemen	24.5	Brazil	24.4
Barbados	24.3	South Africa	24.2
Libya	24.0	Macedonia	24.0
Nigeria	24.0	Niue	24.0
Sierra Leone	24.0	Sri Lanka	24.0
Turkmenistan	24.0	Chad	24.0
Comoros	24.0	Cote d'Ivoire	24.0
Cyprus (Turkish Republic)	24.0	Dominican Republic	24.0
Ethiopia	24.0	Arab Emirates	24.0
Kazakhstan	24.0	Nicaragua	23.9
Trinidad and Tobago	23.8	Djibouti	23.6
Argentina	23.5	Jamaica	23.4
Russian Federation	23.3	Nepal	23.2
Tunisia	23.2	Venezuela	23.2
Ecuador	23.2	San Marino	23.0
Ghana	23.0	Algeria	22.8
Fiji	22.8	Zambia	22.7
Burkina Faso	22.6	Brunei	22.4
Mozambique	22.3	Mauritius	22.2
Mali	22.0	Swaziland	22.0
Zimbabwe	22.0	Cape Verde	22.0
Cook Islands	22.0	Haiti	22.0
Uganda	21.8	Cuba	21.8
Uruguay	21.7	Honduras	21.7
Senegal	21.6	Guatemala	21.3

Paraguay	21.2	Rwanda	21.2
Gabon	21.0	Grenada	20.3
Samoa	20.2	Namibia	20.0
Niger	20.0	Somaliland	20.0
Syria	20.0	Tajikistan	20.0
Benin	20.0	Burundi	20.0
Congo (Democratic Republic)	20.0	Angola	20.0
East Timor	20.0	Antigua and Barbados	20.0
Guinea	20.0	Guinea-Bissau	20.0
Kenya	20.0	Papau New Guinea	19.9
Kyrgyzstan	19.4	Malawi	19.3
Seychelles	19.3	Soloman Islands	19.0
Cameroon	17.9	Saint Kitts and Nevis	17.3
Bhutan	17.0	Tanzania	17.0
Lesotho	16.7	Azerbaijan	16.0
Micronesia	16.0	Sao Tome and Principe	16.0
Suriname	16.0	Tonga	16.0
Vanuatu	16.0	Costa Rica	16.0
Equatorial Guinea	16.0	Liberia	12.0
Nauru	12.0	Somalia	12.0
Tuvalu	12.0	Central Africa	12.0
Eritrea	12.0	Kiribati	12.0

Country	2003	2004
Afghanistan	28.0%	26.0
Albania	28.3	25.6
Algeria	28.0	22.8
Andorra	29.3	26.2
Angola	24.0	20.0
Antigua	28.0	20.0
Arab Emirates	27.4	24.0
Argentina	29.4	23.5
Armenia	30.9	27.5
Australia	41.5	36.7
Austria	36.0	28.2
Azerbaijan	32.0	16.0
Bahamas	32.0	27.0
Bahrain	33.8	33.0
Bangladesh	30.7	26.8
Barbados	29.0	24.3
Belarus	30.0	24.7
Belgium	34.0	31.1
Belize	32.0	28.0
Benin	24.0	20.0
Bhutan	24.0	17.0
Bolivia	28.0	32.0

Bosnia	30.1	25.3
Botswana	30.0	25.0
Brazil	29.4	24.4
Brunei	32.8	22.4
Bulgaria	31.4	26.3
Burkina Faso	27.4	22.6
Burundi	28.0	20.0
Cambodia	31.0	26.5
Cameroon	25.1	17.9
Canada	42.4	40.3
Cape Verde	26.4	22.0
Central Africa	24.0	12.0
Chad	24.0	24.0
Chile	32.0	29.2
China	35.9	37.3
Colombia	33.9	24.8
Comoros	28.0	24.0
Congo (Rep)	24.0	26.0
Congo Dem Rep	32.0	20.0
Cook Islands	24.0	22.0
Costa Rica	24.0	16.0
Croatia	33.2	27.2
Cuba	26.2	21.8
Cyprus (Turkish Rep)	28.0	24.0
Cyprus-Republic	33.3	26.8
Czech Republic	33.8	30.9
Denmark	35.5	30.6
Djibouti	31.7	23.6
Dominican Republic	28.7	24.0
Dominica	26.7	33.0
East Timor	32.6	20.0
Ecuador	28.3	23.2
Egypt	28.0	28.0
El Salvador	28.1	26.1
Equatorial Guinea	24.0	16.0
Eritrea	24.0	12.0
Estonia	30.9	28.5
Ethiopia	30.3	24.0
Fiji	30.4	22.8
Finland	35.5	29.1
France	33.8	32.8
Gabon	16.0	21.0
Gambia	29.4	26.0
Georgia	30.8	25.3
Germany	34.4	35.0
Ghana	26.3	23.0
Great Britain	37.7	33.0
Greece	30.9	28.1
Grenada	25.0	20.3

Guatemala	28.0	21.3
Guinea	22.7	20.0
Guinea-Bissau	29.0	20.0
Guyana	26.0	28.0
Haiti	30.0	22.0
Honduras	28.2	21.7
Hong Kong	34.5	33.7
Hungary	29.9	25.4
Iceland	34.3	28.1
India	30.1	29.6
Indonesia	24.0	32.0
Iran	28.0	29.0
Iraq	24.0	34.0
Ireland	29.4	29.9
Israel	33.3	32.3
Italy	33.2	33.2
Ivory Coast	32.0	24.0
Jamaica	28.9	23.4
Japan	34.2	30.8
Jordan	30.8	29.7
Kazakhstan	28.4	24.0
Kenya	25.7	20.0
Kiribati	27.0	12.0
Kuwait	30.7	30.1
Kyrgyzstan	26.9	19.4
Laos	19.0	25.3
Latvia	30.9	28.0
Lebanon	30.7	29.0
Lesotho	21.7	16.7
Liberia	20.0	12.0
Libya	24.0	24.0
Liechtenstein	26.5	33.0
Lithuania	30.5	27.3
Luxembourg	28.7	29.6
Macedonia	28.0	24.0
Madagascar	24.0	26.0
Malawi	22.7	19.3
Malaysia	36.7	26.2
Maldives	35.2	29.0
Mali	28.0	22.0
Malta	27.6	31.4
Marshall Islands	20.0	32.0
Mauritania	28.0	26.0
Mauritius	26.5	22.2
Mexico	33.7	29.6
Micronesia	30.5	16.0
Moldova	28.0	32.0
Monaco	24.5	39.0
Mongolia	28.6	25.7

Morocco	28.9	25.6
Mozambique	25.5	22.3
Myanmar	28.0	28.0
Namibia	26.2	20.0
Nauru	16.0	12.0
Nepal	32.5	23.2
Netherlands	34.3	31.0
New Zealand	35.5	33.6
Nicaragua	29.2	23.9
Niger	26.0	20.0
Nigeria	29.0	24.0
Niue	28.0	24.0
North Korea	32.0	28.0
Norway	33.2	27.0
Oman	29.8	28.5
Pakistan	29.1	24.6
Palau	32.0	29.0
Panama	28.0	26.4
Papua New Guinea	22.4	19.9
Paraguay	26.7	21.2
Peru	31.3	26.7
Philippines	35.5	27.6
Poland	32.2	28.6
Portugal	33.6	26.0
Qatar	32.0	28.3
Romania	32.8	27.5
Russia	29.3	23.3
Rwanda	25.3	21.2
Samoa	28.0	20.2
San Marino	24.2	23.0
Sao Tome	32.0	16.0
Saudi Arabia	31.8	30.7
Senegal	28.0	21.6
Serbia and Montenegro	32.3	27.5
Seychelles	28.0	19.3
Sierra Leone	24.0	24.0
Singapore	46.3	43.8
Slovakia	32.8	27.9
Slovenia	32.0	27.7
Solomon Islands	19.2	19.0
Somalia	32.0	12.0
Somaliland	32.0	20.0
South Africa	31.8	24.2
South Korea	30.0	30.5
Spain	31.3	26.5
Sri Lanka	24.0	24.0
St. Kitts	28.0	17.3
St. Lucia	35.0	27.0
St. Vincent	28.0	32.0

Sudan	30.0	26.3
Suriname	20.0	16.0
Swaziland	25.0	22.0
Sweden	31.8	29.8
Switzerland	35.9	27.6
Syria	32.0	20.0
Taiwan	41.3	44.3
Tajikistan	34.0	20.0
Tanzania	23.3	17.0
Thailand	32.4	27.6
Togo	32.0	36.0
Tonga	24.0	16.0
Trinidad	29.5	23.8
Tunisia	32.2	23.2
Turkey	38.3	27.6
Turkmenistan	28.0	24.0
Tuvalu	28.0	12.0
Uganda	27.7	21.8
Ukraine	31.6	25.8
United States	45.3	41.9
Uruguay	28.5	21.7
Uzbekistan	32.0	28.3
Vanuatu	20.0	16.0
Vatican	36.5	26.0
Venezuela	28.7	23.2
Vietnam	30.5	26.5
Yemen	28.9	24.5
Zambia	26.1	22.7
Zimbabwe	24.0	22.0

	<i>Online Services</i>	<i>Publications</i>	<i>Data bases</i>	<i>Privacy Policy</i>	<i>Security Policy</i>	<i>W3C Disability Accessibility</i>
Afghanistan	100%	100%	0%	0%	0%	0%
Albania	0	90	40	0	0	0
Algeria	12	80	44	0	0	4
Andorra	0	100	89	0	0	0
Angola	0	100	0	0	0	0
Antigua	0	100	0	0	0	0
Arab Emirates	0	60	40	0	0	0
Argentina	12	100	65	6	0	0
Armenia	17	100	83	0	0	0
Australia	65	97	68	97	23	61
Austria	20	100	40	20	0	40
Azerbaijan	0	0	0	0	0	0
Bahamas	100	0	0	100	0	0

Bahrain	33	67	100	0	0	0
Bangladesh	17	83	67	0	0	17
Barbados	25	50	50	0	0	25
Belarus	0	100	83	0	0	0
Belgium	33	100	83	8	0	17
Belize	0	100	50	25	25	0
Benin	0	50	50	0	0	0
Bhutan	100	0	0	0	0	0
Bolivia	0	100	100	0	0	0
Bosnia	0	56	56	0	0	0
Botswana	50	100	50	0	0	0
Brazil	7	100	71	0	0	14
Brunei	0	40	20	0	0	0
Bulgaria	0	100	57	0	0	14
Burkina Faso	60	100	20	0	0	0
Burundi	0	0	0	0	0	0
Cambodia	0	88	50	0	0	0
Cameroon	9	27	36	0	0	0
Canada	29	97	87	90	23	81
Cape Verde	0	75	75	0	0	0
Central Africa	0	0	0	0	0	0
Chad	0	100	0	0	0	0
Chile	14	100	93	21	7	7
China- Mainland	48	100	100	35	35	0
China -Taiwan	46	100	100	50	54	0
Colombia	0	100	80	0	0	0
Comoros	0	100	100	0	0	100
Congo-Dem Rep	0	100	0	0	0	0
Congo-Rep	100	100	100	0	0	0
Cook Islands	0	100	50	0	0	0
Costa Rica	0	100	0	0	0	0
Cote d'Ivoire	0	100	100	0	0	0
Croatia	0	100	100	0	0	0
Cuba	0	44	56	0	0	22
Cyprus-Rep	11	67	67	0	0	11
Cyprus-Turk	0	100	0	0	0	0
Czech Rep	7	100	80	0	0	47
Denmark	0	100	79	0	0	43
Djibouti	0	90	40	0	0	0
Dominica	100	100	100	100	0	0
Dominican Rep	0	100	100	0	0	0
East Timor	0	67	8	0	0	8
Ecuador	8	100	69	0	0	0
Egypt	0	100	100	0	0	0
El Salvador	38	100	88	0	0	0
Eq Guinea	0	0	0	0	0	0
Eritrea	0	0	0	0	0	0

Estonia	9	91	100	0	0	0
Ethiopia	0	80	20	0	0	0
Fiji	8	92	50	0	0	0
Finland	20	100	67	7	0	33
France	38	100	91	0	0	6
Gabon	100	0	0	0	0	100
Gambia	0	75	50	0	0	0
Georgia	0	78	56	0	0	11
Germany	80	97	90	50	23	13
Ghana	20	100	50	0	0	0
Great Britain	45	97	52	62	41	55
Greece	11	89	44	0	0	11
Grenada	33	33	33	0	0	33
Guatemala	25	75	50	0	0	0
Guinea	0	100	50	0	0	0
Guinea-Bissau	0	100	0	0	0	0
Guyana	0	100	100	0	0	50
Haiti	0	50	0	0	0	100
Honduras	33	100	50	0	0	0
Hong Kong	65	100	70	20	10	20
Hungary	6	75	44	0	0	25
Iceland	6	100	39	0	0	61
India	6	100	78	0	0	6
Indonesia	0	100	100	0	0	0
Iran	0	75	75	0	0	0
Iraq	100	100	100	100	100	100
Ireland	37	100	16	32	0	68
Israel	25	94	88	13	6	13
Italy	25	90	75	15	0	15
Jamaica	12	100	24	12	12	6
Japan	0	95	70	20	15	25
Jordan	16	95	74	0	0	0
Kazakhstan	0	88	63	0	0	0
Kenya	0	50	36	0	0	6
Kiribati	0	0	0	0	0	0
Korea, North	0	0	0	0	0	0
Korea, South	21	86	64	14	7	7
Kuwait	10	100	100	0	0	0
Kyrgyzstan	0	100	29	0	0	0
Laos	0	100	33	0	0	0
Latvia	0	100	50	0	0	0
Lebanon	0	88	75	0	0	0
Lesotho	0	50	0	0	0	0
Liberia	0	0	0	0	0	0
Libya	0	100	0	0	0	0
Liechtenstein	100	100	100	0	0	0
Lithuania	0	92	50	0	0	17
Luxembourg	25	100	80	0	0	25
Macedonia	0	100	0	0	0	0

Madagascar	0	100	0	0	0	0
Malawi	0	50	33	0	0	0
Malaysia	17	83	67	0	0	0
Maldives	20	80	40	0	0	0
Mali	0	100	50	0	0	0
Malta	20	100	100	100	0	0
Marshall Islands	0	100	100	0	0	0
Mauritania	0	100	100	0	0	50
Mauritius	0	92	38	0	0	0
Mexico	20	100	65	0	10	10
Micronesia	0	0	0	0	0	0
Moldova	0	100	0	0	0	0
Monaco	50	100	100	50	0	0
Mongolia	0	86	57	0	0	14
Morocco	21	89	84	0	0	5
Mozambique	0	86	57	0	0	0
Myanmar	0	100	67	0	0	0
Namibia	0	83	33	8	0	8
Nauru	0	0	0	0	0	0
Nepal	9	70	61	0	0	17
Netherlands	31	97	72	10	0	45
New Zealand	50	100	89	46	11	57
Nicaragua	11	100	74	5	0	0
Niger	0	50	50	0	0	0
Nigeria	50	88	63	13	0	25
Niue	0	100	100	0	0	0
Norway	21	100	61	0	0	3
Oman	13	69	75	13	0	0
Pakistan	36	86	68	14	9	0
Palau	100	0	100	0	0	0
Panama	24	86	71	5	0	10
Papua New Guinea	27	55	18	0	0	0
Paraguay	6	82	24	0	0	18
Peru	25	100	80	5	0	5
Philippines	41	90	66	10	3	3
Poland	0	100	63	7	0	7
Portugal	5	100	48	10	0	24
Qatar	25	75	100	0	0	0
Romania	5	90	43	0	0	0
Russia	0	83	78	0	0	0
Rwanda	9	82	9	0	0	0
Sao Tome	0	0	0	0	0	0
St. Kitts/Nevis	0	100	0	0	0	0
St. Lucia	0	100	75	25	25	0
St. Vincent	0	100	50	100	0	0
Samoa	20	80	20	0	0	0
San Marino	33	67	0	0	0	0

Saudi Arabia	9	100	91	0	0	0
Senegal	0	100	50	0	0	0
Serbia and Montenegro	0	87	33	0	0	7
Seychelles	0	50	33	0	0	0
Sierra Leone	0	100	100	0	0	0
Singapore	87	100	63	97	93	3
Slovakia	10	100	52	0	0	10
Slovenia	6	97	52	3	3	10
Solomon Islands	0	75	0	0	0	0
Somalia	0	0	0	0	0	0
Somaliland	0	100	0	0	0	0
South Africa	17	100	50	0	0	10
Spain	13	71	67	0	0	33
Sri Lanka	0	100	0	0	0	0
Sudan	25	100	50	0	0	0
Suriname	0	0	0	0	0	0
Swaziland	0	100	25	0	0	0
Sweden	34	86	52	0	0	45
Switzerland	26	100	70	0	0	15
Syria	0	0	0	0	0	0
Tajikistan	0	0	0	0	0	0
Tanzania	0	48	14	0	0	0
Thailand	0	100	44	0	0	0
Togo	0	100	100	100	0	0
Tonga	0	0	0	0	0	0
Trinidad	17	83	28	17	6	11
Tunisia	0	60	60	0	0	0
Turkey	33	80	100	3	3	0
Turkmenistan	0	100	100	0	0	0
Tuvalu	0	0	0	0	0	0
Uganda	0	78	22	0	0	0
Ukraine	0	91	100	0	0	0
United States	77	100	95	82	67	42
Uruguay	8	92	23	8	8	7
Uzbekistan	0	75	75	0	0	0
Vanuatu	0	100	0	0	0	0
Vatican	0	100	50	0	0	0
Venezuela	8	92	38	0	0	0
Vietnam	0	100	63	0	0	13
Yemen	0	100	38	0	0	0
Zambia	0	89	56	0	0	0
Zimbabwe	0	100	50	0	0	0

Table A-4 Individual Country Profiles for Selected Features, 2004

	<i>For Lang</i>	<i>Ads</i>	<i>Prem Fee</i>	<i>User Fee</i>	<i>Comments</i>	<i>Ave. Number of Disability Errors</i>
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Afghanistan	100%	100%	0%	0%	100%	5
Albania	100	10	0	0	20	21.2
Algeria	24	0	0	0	16	11.2
Andorra	44	0	0	0	0	18.8
Angola	0	0	0	0	0	1
Antigua	0	100	0	0	100	15
Arab Emirates	100	0	0	0	20	12.6
Argentina	12	0	0	6	0	13.1
Armenia	100	17	0	0	33	48.2
Australia	26	0	0	6	42	1.7
Austria	100	0	0	0	0	4
Azerbaijan	100	0	0	0	0	3
Bahamas	0	0	0	0	0	47
Bahrain	67	100	0	0	67	21.7
Bangladesh	100	0	0	0	0	14.2
Barbados	75	0	0	0	25	2.3
Belarus	67	0	0	0	17	14.3
Belgium	75	0	0	0	8	12.3
Belize	0	0	0	0	25	54
Benin	0	0	0	0	0	14
Bhutan	100	100	0	0	0	8
Bolivia	100	0	0	0	0	35
Bosnia	100	0	0	0	0	6.2
Botswana	0	0	0	0	0	5.5
Brazil	14	0	0	0	0	21.1
Brunei	100	0	0	0	0	20.4
Bulgaria	100	0	0	0	0	10.1
Burkina Faso	20	0	0	0	60	18.0
Burundi	100	0	0	0	0	3
Cambodia	100	0	0	0	0	11
Cameroon	0	0	0	0	0	12.8
Canada	100	0	3	6	10	1.3
Cape Verde	0	0	0	0	0	13.3
Central Africa	0	100	0	0	0	
Chad	100	0	0	0	0	16
Chile	0	0	0	0	14	32.4
China-Mainland	48	9	0	35	57	72.4
China -Taiwan	96	0	0	19	88	25.5
Colombia	0	0	0	0	0	24.1
Comoros	0	100	0	0	0	0
Congo-Dem Rep	100	100	0	0	0	15
Congo-Rep	0	100	100	0	100	75
Cook Islands	0	0	0	0	0	10.5
Costa Rica	0	100	0	0	0	22
Cote d'Ivoire	0	0	0	0	0	22
Croatia	100	0	0	0	0	13.4
Cuba	78	0	0	0	0	9.1

Cyprus-Rep	100	0	0	0	11	10.9
Cyprus-Turk	100	0	0	0	0	30
Czech Rep	100	7	0	0	7	10.4
Denmark	100	0	0	0	0	11.2
Djibouti	0	0	10	0	30	6.5
Dominica	0	0	0	0	0	87
Dominican Rep	33	0	0	0	0	17
East Timor	100	0	0	0	0	5.1
Ecuador	0	0	0	0	0	52.1
Egypt	100	0	0	0	0	13
El Salvador	50	0	0	0	25	22.6
Eq Guinea	100	0	0	0	0	1
Eritrea	0	100	0	0	0	1
Estonia	100	9	0	0	9	35.3
Ethiopia	100	0	0	0	0	9.2
Fiji	0	0	0	0	17	21.3
Finland	100	0	0	0	0	30.7
France	66	0	0	0	16	42.3
Gabon	0	0	0	0	0	0
Gambia	0	0	0	0	0	14.5
Georgia	89	0	0	0	22	14.2
Germany	80	7	0	3	13	14.7
Ghana	0	0	0	0	0	27.3
Great Britain	7	0	0	0	10	5.2
Greece	100	0	0	0	11	18.4
Grenada	0	33	0	0	0	3.7
Guatemala	0	0	0	10	0	9.3
Guinea	0	0	0	0	0	14.5
Guinea-Bissau	0	0	0	0	0	9
Guyana	0	50	0	0	50	1
Haiti	0	0	0	0	0	0
Honduras	0	0	0	0	0	10.7
Hong Kong	100	0	0	0	5	7.7
Hungary	100	0	0	0	13	35.4
Iceland	100	0	0	0	6	4.3
India	100	0	0	0	11	20.3
Indonesia	100	0	0	0	0	12
Iran	100	0	0	0	0	17
Iraq	0	0	0	0	0	0
Ireland	11	0	0	0	16	2.6
Israel	88	0	0	0	6	36.8
Italy	50	0	0	0	15	7.1
Jamaica	0	12	0	0	12	27.2
Japan	100	0	0	0	10	14
Jordan	100	5	0	0	42	18.1
Kazakhstan	25	25	0	0	50	11
Kenya	0	0	0	0	7	7.6
Kiribati	0	0	0	0	0	6
Korea, North	100	0	0	0	0	11

Korea, South	100	7	0	0	43	23.2
Kuwait	60	20	0	0	70	25.1
Kyrgyzstan	14	0	0	0	14	19.6
Laos	67	0	0	0	0	21
Latvia	100	13	0	0	0	72
Lebanon	88	13	0	0	63	32.1
Lesotho	0	0	0	0	0	18.3
Liberia	0	0	0	0	0	1
Libya	100	0	0	0	0	57
Liechtenstein	100	0	0	0	0	63
Lithuania	100	8	0	0	0	22.9
Luxembourg	20	0	0	0	50	10.7
Macedonia	100	0	0	0	0	4
Madagascar	100	0	0	0	50	7.5
Malawi	0	0	0	0	0	1.7
Malaysia	100	0	0	0	17	17
Maldives	100	20	0	0	40	33.8
Mali	0	0	0	0	0	20
Malta	0	0	0	0	20	1.8
Marshall Islands	100	0	0	0	0	13
Mauritania	0	0	0	0	0	2
Mauritius	0	0	0	0	8	13.4
Mexico	45	0	0	0	35	27.6
Micronesia	0	0	0	0	0	32
Moldova	100	0	0	0	100	32
Monaco	100	0	0	0	0	9.5
Mongolia	100	0	0	0	14	14
Morocco	16	5	0	0	11	25.3
Mozambique	57	0	0	0	0	14.3
Myanmar	100	0	0	0	33	11.3
Namibia	0	0	0	0	0	6.3
Nauru	0	0	0	0	0	10
Nepal	4	0	0	0	4	9.8
Netherlands	97	3	0	0	3	4.1
New Zealand	4	0	0	0	14	5.9
Nicaragua	11	5	0	0	0	17.7
Niger	0	5	0	0	5	2
Nigeria	0	13	0	0	13	10.6
Niue	0	0	0	0	0	3
Norway	94	0	0	0	3	23.6
Oman	81	13	6	0	38	18.7
Pakistan	9	0	0	0	5	20.8
Palau	0	0	0	0	0	31
Panama	10	0	0	0	14	12.3
Papua New Guinea	0	0	0	0	9	24.7
Paraguay	0	0	0	0	0	5.4
Peru	5	0	0	0	20	45.4

Philippines	0	7	0	0	48	13.2
Poland	100	0	0	0	7	26.3
Portugal	43	0	0	0	10	14.9
Qatar	100	25	0	0	50	17.3
Romania	100	0	0	0	10	30
Russia	6	17	0	0	39	64.6
Rwanda	0	0	0	0	0	12.3
Sao Tome	0	0	0	0	0	4
St. Kitts/Nevis	0	33	0	0	0	16
St. Lucia	0	0	0	0	0	152.3
St. Vincent	0	50	0	0	100	48
Samoa	0	0	0	0	0	10
San Marino	67	0	0	0	0	3.3
Saudi Arabia	96	9	0	0	57	23.4
Senegal	10	0	0	0	0	19.9
Serbia and Montenegro	100	0	0	0	13	29.1
Seychelles	0	0	0	0	0	3.7
Sierra Leone	0	0	0	0	0	4
Singapore	7	3	3	3	33	23.7
Slovakia	100	0	0	0	0	6.9
Slovenia	100	3	0	0	10	15.4
Solomon Islands	0	0	0	0	0	6.8
Somalia	0	0	0	0	0	80
Somaliland	0	0	0	0	0	5
South Africa	3	0	0	0	10	11.1
Spain	71	0	0	0	4	6.2
Sri Lanka	100	0	0	0	0	24
Sudan	75	0	0	0	25	11.3
Suriname	0	0	0	0	0	1
Swaziland	0	25	0	0	25	23.5
Sweden	100	0	0	0	0	14.5
Switzerland	70	4	7	0	0	55
Syria	100	0	0	0	0	16
Tajikistan	100	0	0	0	0	3
Tanzania	0	0	0	0	0	2.9
Thailand	100	0	0	0	11	36.1
Togo	100	0	0	0	0	231
Tonga	0	0	0	0	0	6
Trinidad	0	6	0	0	39	7.7
Tunisia	60	0	0	0	0	10.4
Turkey	43	20	0	0	13	34.7
Turkmenistan	0	0	0	0	0	1
Tuvalu	0	0	0	0	0	7
Uganda	0	11	0	0	44	24.7
Ukraine	64	27	0	0	36	30.9
United States	40	0	10	8	33	4
Uruguay	15	0	0	0	0	23.5

Uzbekistan	75	25	0	0	25	77.3
Vanuatu	0	0	0	0	0	14
Vatican	100	0	0	0	0	14.5
Venezuela	0	0	0	0	31	34.2
Vietnam	100	25	13	0	13	17.8
Yemen	75	13	0	0	13	9.4
Zambia	11	11	0	0	22	25.1
Zimbabwe	0	0	0	0	0	6

Table A-5 Best Practices of Top Government Sites, 2004

1) Taiwan

Taiwan was the top performing country in our e-government study. Although all of its sites were of a distinctive format, each one was clear and easy to navigate. All sites had English translation links which consistently directed the user to an English page identical to the Chinese. Many sites make online subscriptions available, as well as offer a variety of online services including application processes and online product purchases. PDA options are made available on some sites, a fairly unusual and specialized service among the government sites, and show that advanced technologies are being incorporated into Taiwanese websites. Taiwan has created a specific e-government website called MyEgov which acts as a general portal for the country. It provides visitors with links to all governmental agencies and departments.

2) Singapore

Singapore also has an outstanding site. Not only are its government sites informative, but they are aesthetically pleasing. Colorful graphics and images alongside informative and accessible links made the nation's sites some of the most memorable. This advanced style is accompanied by a substantial wealth of information and services, ranging from making government payments to more unique options such as online dating services. The government provides an e-services portal, entitled eCitizen, which provides the user with easy access to an extensive array of opportunities. Its sites are well-organized and user-friendly, making it easy for citizens to accomplish online tasks. The housing and development site includes an advanced virtual tour of available property, while the army site provides original music videos and songs that enhance the overall experience of attaining information via the web. In addition, all sites provide a link to a visible privacy statement, giving the visitor an increased sense of confidence in the confidentiality of personal information.

3) United States

Like Singapore, the United States provides citizens with a user-friendly portal site, entitled FirstGov, which provides clear and simple access to a wide array of government services. Most of the other governmental sites provide links to this portal, making it easy for citizens to navigate from service to service. Furthermore, an A-Z agency index makes it simple to find specific government sites and information. Within the sites of the various agencies, organization is excellent, and visitors can access a wide array of publications, databases, video clips and updated news reports. Most include extensive privacy policies as well as detailed contact information that makes it simple for Americans to locate and get in touch with various officials at the state and national levels.

4) Canada

The Canadian websites allow for easy navigation and access to important departments and agencies, as well as online reports and publications. The graphics and taskbars are clear and organized, and an identical privacy statement appears in the same location on each page. A template is used for each

department site so that there is no need to separately locate publications or e-mail contact information. The Canadian portal has options for e-mail updates, customized web pages, wireless device access, as well as numerous online services which are convenient and useful. The majority of the sites comply with disability standards, and all of the sites are bilingual in nature (English and French).

5) Monaco

The Monaco sites coded for this study were well-organized and informative. Most notable is the official tourism site, www.visitmonaco.com, which includes an extensive amount of information for the prospective traveler. Here, individuals can learn a great deal about the nation's history as well as access a variety of useful links to travel services. For example, visitors can subscribe to Avant Go, a service that provides them with updated calendars and hotel information on their PDA organizers. It is also possible to register for travel agencies and receive additional information via electronic newsletters. Furthermore, the variety of downloadable publications includes student handbooks for the International University of Monaco as well detailed brochures, maps, and traditional recipes.