Issues and Challenges
Global E-Government/E-Participation Models, Measurement and Methodology

A Framework for Moving Forward

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Prepared for the United Nations Department of Administration and Development Management

Workshop on E-Participation and E-Government:
Understanding the Present and Creating the Future

Budapest, Hungary
27-28 July 2006

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INTRODUCTION AND PURPOSE

E-government\textsuperscript{1} and its partner in the electronic age, e-participation,\textsuperscript{2} have over the course of the past decade moved from concept to reality, at least at some level, and in the last 4-6 years moved from much talked about curiosities to subjects of serious inquiry. Since the turn of the 21\textsuperscript{st} century, aptly called by some the electronic or digital century, a number of global or regional e-government research studies have been conducted by prominent public and private organizations including the United Nations,\textsuperscript{3} the World Economic Forum,\textsuperscript{4} Brown University,\textsuperscript{5} the Economist/IBM,\textsuperscript{6} Accenture,\textsuperscript{7} CapGemini,\textsuperscript{8} RAND Corp.,\textsuperscript{9} and the Pacific Council on International Policy\textsuperscript{10} among others. Many of these have become ongoing projects, thereby developing an ever expanding body of e-government information and knowledge. Additionally, two scholarly journals, the Journal of E-Government\textsuperscript{11} and the Journal of International Electronic Government Research,\textsuperscript{12} have been founded specifically to review and add structure and rigor to the explosion of academic papers, articles and books written about e-government and related subjects.\textsuperscript{13} Further, across the globe numerous research and academic programs and centers have been formed focusing on e-government and related issues.\textsuperscript{14} Although still in its infancy—some would argue adolescence—e-government is developing, growing, evolving both as a viable government practice and as a compelling academic subject, if not a separate discipline.

Still, much of the e-government literature and research to date have focused on \textit{anecdotal case studies}\textsuperscript{15}—with researchers and policymakers describing practices that have been particularly successful or common pitfalls they have found in implementation—or \textit{qualitative comparative surveys}\textsuperscript{16}—with researchers scoring websites and services based on qualitative impressions of effectiveness and user-friendliness. The UN Global E-Government Readiness
Reports, the primary subject of this paper and the conference within which it is being presented, have for the past three years established a robust body of data, information and knowledge based primarily on quantitative data. The Reports have provided meaningful insights into the development of e-government and e-participation on a global and regional basis—facilitating comparative analysis between regions, as well as country comparisons within regions.

Following the initial three years of the Global E-Government Readiness Reports (2003-2005), the United Nations has used 2006 as a period to assess the program and refine the process and methodology if appropriate. As part of this evaluation process, formal and informal meetings of academics and practitioners have been held with the UN program managers and research team, all asking the same question: How should the UN Global E-Government Readiness Program evolve so that it remains for governments a relevant and useful source of e-government data, information and guidance into the future within the context of the UN’s vision of e-inclusion for all. The general purpose of this paper is to frame some of the key issues, opportunities and challenges for the UN Global E-Government Readiness Program as it moves into its next phase of development. The specific purpose within that context is to serve as a departure point and frame the discussions related to e-government and e-participation during the two day Workshop on E-Participation and E-Government: Understanding the Present and Creating the Future, sponsored by the United Nations Department of Economic and Social Affairs (UNDESA) in Budapest, Hungary, 27-29 July 2006.
I. A BRIEF HISTORY OF THE UNITED NATIONS GLOBAL E-GOVERNMENT READINESS PROGRAM

In 2001, the United Nations established the United Nations Information and Communication Technologies (ICT) Task Force, which aims at boosting global development and competence in information technology. UN Secretary-General Kofi Annan outlined the mission of the ICT Task Force:

The new technologies that are changing our world are not a panacea or a magic bullet. But they are, without doubt, enormously powerful tools for development. They create jobs. They are transforming education, health care, commerce, politics and more. They can help in the delivery of humanitarian assistance and even contribute to peace and security.

One of the most pressing challenges in the new century is to harness this extraordinary force, spread it throughout the world, and make its benefits accessible and meaningful for all humanity, in particular the poor. The principal mission of this Task Force is to tell us how we might accomplish this ambitious goal.

In this context, it is important to note that the mission of the Department of Economic and Social Affairs (UNDESA) is to provide a vital interface between global policies in the economic, social and environmental spheres and national action. As such, it has sought to explore the interlinkages between e-government and development through an assessment of the countries according to their state of e-government readiness and the extent of e-participation worldwide. The initiative began as UNDESA undertook the initial attempt to measure e-government readiness on a global scale with the UN Global E-Government Survey 2003 (2003 UN Report). Analyzing each UN member country’s national website, data were collected and analyzed to create an E-Government Readiness Index that could serve as an annual benchmark for policymakers in order to know where their country stands in comparison to the rest of the world and to establish a reference point to measure future e-government progress and development. The survey assessed the 191
UN member countries based on a composite index of e-government readiness and captured in the report’s quantitative index, as well as developed as a theoretical model. The UN research team set forth the following survey objectives:

1. Present a snapshot of the state of comparative e-government readiness of the countries of the world;
2. Provide an appraisal of the use of e-government as a tool in delivery of services to the public in its capacity as consumer of such services;
3. Provide a comparative assessment of the willingness and ability of governments to involve the public in e-participation; and
4. Provide a benchmarking tool for monitoring the progress of countries as they move towards higher levels of digital public service delivery in the future.

The 2003 UN Report introduced two companion surveys—a quantitative survey of e-government readiness and a qualitative study on e-participation. Although the e-participation component is qualitative, the research team felt it was critical to include e-participation within the e-government context, for, as one observer notes, “If digital government and digital democracy are to transform government service delivery and decision making, e-democracy tools must be integrated into government portals, websites, and electronic services.”

It is important to note that the 2003 UN Report—as well as the follow on 2004 and 2005 UN Reports—considers e-government to “be the means to an end, the end being the development for all. It is considered to be a tool at the disposal of government” that can be used to effectively enhance the lives of its citizens and improve the functioning of its governance. The e-government survey evaluates only quantitative, not qualitative, evidence of e-government capacity indexed for comparison to all other member countries. Consequently, the results should be placed in context with the country’s overall development and capacity. Higher rankings might not necessarily predict better information and services, since the survey does not evaluate qualitative issues involved with the quality of the information and services provided, citizen
access and usage, usability, and other relevant indicators. This quantitative survey merely measures information and services provided, without making normative or qualitative judgments as to veracity, accessibility, or usability. Coupled with the more qualitative e-participation component, the 2003 Report provided a meaningful, if still incomplete, snapshot of e-government development on national, regional and global levels. In its efforts to continue building useful knowledge around global e-government, the United Nations embarked on the *Global E-Government Readiness Report 2004: Toward Access for Opportunity* (2004 UN Report),\textsuperscript{25} and the *Global E-Government Readiness Report 2005: From E-Government to E-Inclusion*,\textsuperscript{26} both of which utilized roughly the same E-Government Readiness Index and E-Participation Index as those introduced in the 2003 UN Report. This year, 2006, the project team has embarked on a year-long assessment of the ongoing UN Global E-Government Readiness Program with an eye toward improving, and possibly expanding, it in the future.
II. THE UNITED NATIONS GLOBAL E-GOVERNMENT READINESS REPORTS

The annual United Nations Global E-Government Readiness Reports (“UN Report 2003, 2004, 2005”)\textsuperscript{27} since 2003 have provided useful composite scores and rankings on the 191 United Nations member states with respect to e-government, e-readiness, and e-participation, as well as highlighting good national e-government practices that have been identified throughout the world. In addition to reporting on and assessing the research findings, each of the UN Reports has included a policy oriented component aimed at furthering the theory and practice of e-government—and more broadly, information and communications technologies (ICTs) for development—worldwide.

The UN Report 2003 reported on the first Global E-Government Survey and was published as part of the bi-annual United Nations World Public Sector Report. It focused on developing an initial baseline of information on the national e-government programs of the UN member nations, and represented the first implementation of both the UN Web Measure Survey and E-Participation Measure. Setting this baseline, the UN Report 2003 concluded that the potential of e-government as a tool for development rests largely on the existence of some threshold level of technological infrastructure, human capital, and connectivity, and that most countries were not yet harnessing e-government to effectively deliver public services and information. And, as one observer strongly noted, “Since so much is at stake, it is imperative that countries and regions step up their efforts to migrate to cyberspace.”\textsuperscript{28}

The UN Report 2004, subtitled “Toward Access for Opportunity,” focused on the concept of the digital divide. Part II of the UN Report 2004 put forth a theoretical framework called the
Model of Access Acceleration which states that while some threshold level of physical ICT infrastructure is necessary for “real access,” other educational, economic, social, cultural and political factors supply the ingredients for access acceleration. Upon achieving this threshold level of access acceleration, a nation can truly reap the economic and social benefits of e-government.29 Others have written about this multi-dimensional relationship as well, noting that the bottom line is, “In the long run, improved accessibility will raise usage levels and provide a further basis for social and political transformation.”30 In other words, access leads to usage, usage drives change, which creates greater access, which leads to more usage, which in turn drives new change, and the cycle goes on in an upward, hopefully positive, spiral.

The UN Report 2005 serves as the capstone of the initial three annual Global E-Readiness Reports. Sub-titled “From E-Government to E-Inclusion,” the 2005 Report articulates the vision of global access for all—e-inclusion—enabled by technology generally, and e-government specifically. This vision is bolstered in the report with the incorporation of the Socially Inclusive Governance Framework, a multi-faceted approach to promoting technology driven real access, focusing on access for development and the inclusion of women and the disadvantaged in society. It further highlights the real risk of a global divide of e-haves and e-have-nots. This framework aligns nicely with the work of others in the electronic or digital inclusion area. Anthony G. Wilhelm, for instance, writing in his “Digital Nation: Towards an Inclusive Information Society” notes that a “…Digital Nation privileges bold new experimentation to improve citizen access and effective use of new technologies while using innovative approaches to address longstanding social problems.”31
III. MEASUREMENT METHODOLOGY

One of the real challenges in researching e-government and e-participation is how and what to measure. Others elsewhere and at this conference are addressing this challenge directly. The following outline of the measurement methodology for the UN Reports will serve as a starting point for this broader discussion.

As the Report notes the measurement of e-government is an assessment of a state’s use of the internet for provision of information, products and services, as well as the level of telecommunication and human capital infrastructure development in a country. Hence, the E-government Readiness Index is a composite index comprising the Web measure index, the Telecommunication Infrastructure index and the Human Capital index.32

DEFINING E-GOVERNMENT

For the purposes of the UN Global E-Readiness Reports, the following broad definition of e-government which includes e-participation has been adopted: “The use of ICT and its application by the government for the provision of information and public services to the people. The aim of e-government, therefore, is to provide efficient government management of information to the citizen; better service delivery to citizens; and empowerment of the people through access to information and participation in public policy decision-making.”33

The UN E-Participation Index was developed as a qualitative indicator of both the capacity and the willingness of a state in encouraging the citizen in promoting deliberative, participatory decision-making in public policy and of the reach of its own socially inclusive governance program. Specifically, the E-Participation module seeks to evaluate, on a comparative basis, whether countries around the globe are:
1. Increasing e-information to citizens for decision-making;
2. Enhancing e-consultation for deliberative and participatory processes; and
3. Supporting e-decision making by increasing the input of citizens in decision making.

The UN Reports clearly constrain the scope of the E-Participation Index—it is not included, for instance, in the calculations for the E-Government Readiness Index, discussed below—and are very clear that the Index is qualitative, and the findings should be used and interpreted with great caution. The purpose of the Index is to illustrate broad trends and practices in promoting e-participation and e-inclusion.

**Overview of UN E-Government Readiness Index Methodology**

The UN Global Report 2005 presents an overview of the methodological framework for the E-government Readiness Reports: “The UN Global E-Government Readiness Index presents the state of e-government readiness of the Member States. It is a composite measurement of the capacity and willingness of countries to use e-government for ICT-led development. Along with an assessment of the website development patterns in a country, the e-government readiness index incorporates the access characteristics, such as the infrastructure and educational levels, to reflect how a country is using information technologies to promote access and inclusion of its people. The measurement of e-government is an assessment of a state’s use of internet and the World Wide Web (WWW) for provision of information, products and services; plus the level of telecommunication and human capital infrastructure in a country.”34 The E-government Readiness Index is a composite score made up of the following components.
The Telecommunications Infrastructure Index

The Telecommunications Infrastructure Index is a composite score itself made up of six primary indices: personal computers (PC’s)/1000 persons; internet users/1000 persons; telephone lines/1000 persons; online population; mobile phones/1000 persons; and televisions/1000 persons. These data were taken from the United Nations International Telecommunications Union (ITU) and the United Nations Statistics Division, and supplemented by the World Bank.

The Human Capital Index

The Human Capital Index is a composite score derived from the United Nations Development Program (UNDP) education index, comprised of the adult literacy rate and the combined primary, secondary and tertiary gross enrollment ratio, with two thirds given to adult literacy and one third given to gross enrollment.

Web Measure Index

The Web Measure Index is a score derived from a quantitative analysis of the national web presence of the 191 member states (note that in each of the three annual survey periods—2003, 2004, 2005—a handful of countries did not have national government websites). The research team used a survey instrument with more than 200 indicators to assess the national government websites (at least one and in many instances two national websites/portals were identified and assessed for each country) along with five ministry sites which align with the UN Millennium Development Goals\textsuperscript{35} (these ministries include education, health, labor, social welfare, and economic development/finance).

In all three survey years, at least the six official languages of the United Nations (Arabic, Chinese, English, French, Russian and Spanish) and to the extent feasible and necessary (for example when a site was not available in one of the six UN languages) numerous additional
languages were utilized to assess particular country sites. Notably, in 2005 every national site was assessed in the official language of the country, or in the primary language provided on the website. To our knowledge this is the first time this level of language translation has been utilized on such a large scale for research on global e-government.

During each of the survey years, the sites are assessed over a 60 day period, with the findings for each country reviewed at least once by a senior research associate who verifies all countries for consistency and in many cases a third time as part of a random final review. The researchers made at least three separate attempts on different days and at different times to open up each identified site(s) before marking them as inaccessible.

The UN Reports include as part of the measurement methodology a five stage model of e-government development, as set forth in the Web Measure Assessment Model.36 A brief summary of each of the stages, included in the UN Reports, follows:

- **Emerging Presence**. Stage I e-government presents information which is limited and basic. The e-government online presence comprises a web page and/or an official website; links to ministerial/departments of education, health, social welfare, labor, and finance may/may not exist; links to regional/local government may/may not exist; some archived information such as the head of states’ message or a document such as a constitution may be available online; most of the information remains static with the fewest options for citizens.

- **Enhanced Presence**. In Stage II the government provides greater public policy and governance sources of current and archived information, such as policies, laws and regulation, reports, newsletters, and downloadable databases. The user can search for a document and there is a help feature and a site map provided. A larger selection of public policy documents such as an e-government strategy, policy briefs on specific education and health issues. Though more sophisticated, the interaction is still primarily unidirectional with information flowing essentially from government to citizen.

- **Interactive Presence**. By Stage III the online services of the government enter the interactive mode with services to enhance convenience of the consumer such as downloadable forms for tax payment, application for license renewal. Audio and video capability is provided for relevant public information. The government officials can be contacted via email, fax, telephone and post. The site is updated
with greater regularity to keep the information current and up to date for the public.

- **Transactional Presence.** Stage IV allows two-way interactions between the citizen and his/her government. It includes options for paying taxes; applying for ID cards, birth certificates/passports, license renewals and other similar C2G [citizen-to-government] interactions by allowing him/her to submit these online 24/7. The citizens are able to pay for relevant public services, such as motor vehicle violation, taxes, fees for postal services through their credit, bank or debit card. Providers of goods and services are able to bid online for public contracts via secure links.

- **Networked Presence.** Stage V represents the most sophisticated level in online e-government initiatives. It can be characterized by the integration of G2G [government-to-government], G2C [government-to-citizen], and C2G [citizen-to-government] (and reverse) interactions. The government encourages participatory deliberative decision making and is willing and able to involve the society in a two-way open dialogue. Through interactive features such as web comment forms and innovative online consultation mechanisms, the government actively solicits citizen views on public policy, law making, and democratic participatory decision making. Implicit in this state of the model is the integration of the public sector agencies with full cooperation and understanding of the concept of collective decision making, participatory democracy and citizen empowerment as a democratic right.37

It is important to note here that while the UN puts forth this “stage” model of e-government development, it is primarily as a framework for the research methodology, and not necessarily as a linear, evolutionary model of e-government. In fact, the UN Reports throughout note that countries can, and do, implement e-government services and initiatives often from the various stages without any sort of real evolution, and can, in fact leap frog whole stages of e-government development.

The indicators for the Web Measure survey were formulated as questions that were answered by researchers observing the national and ministry websites for each of the countries. The questions were grouped according to the five stage model above to provide structure and focus to the survey process:

- Stage I evaluates whether the country has a national website with links to regional and
ministry sites through questions such as whether the homepage provides a link to other national government sites;

- Stage II concerns whether the country website provides current and archived information on law and policy, as well as basic user-friendly web features through questions such as whether archived information and documents can be found on the site;

- Stage III assesses the interactive presence ranging from downloadable forms to specific contact information for public officials through questions such as whether specific contact methods are readily available;

- Stage IV evaluates whether the country provides for opportunities for online transactions through questions such as whether taxes can be filed and fees paid online;

- Stage V represents the most sophisticated level of e-government development with features that facilitate two-way communication—ranging from discussion groups and online surveys to web comments and online consultation through questions such as whether a feedback mechanism is readily available.

Additional, non-quantitative questions were included to provide information about good practices, to identify sectoral and government program sub-sites, to identify documents and policies for possible later collection, and for norming purposes. The quantitative scores for each of the five stages were incorporated into an overall country composite score and indexed out of the highest score of 1.0.

One of the purposes of this paper and the Workshop on E-Government and E-Participation: Understanding the Present and Creating the Future is to discuss ways to improve the Web Measure survey specifically. This will be done through two considerations:

- Vertical consolidation/rationalization—expanding and enhancing the types of e-
government indicators that should be measured given the development of e-government practice globally;

- Horizontal consolidation/rationalization—possibly expanding the number and types of ministries that should be included in the web measure, and also considering other types of government programs that might be included whether at the ministry level or not.

**Qualitative Evaluation: E-Participation Measure**

In addition to the analysis of the five stages based on the Web Measure Assessment Model, an evaluation of e-participation features was also undertaken. This survey posed several questions in three general categories: *e-information* (providing information resources to citizens); *e-consultation* (engaging in consultation with citizens); and *e-decision-making* (offering consideration of citizen input). Unlike the previous evaluations, this survey was qualitative in nature with researchers ranking each question from zero to four (“never” to “always”). These responses were not calculated into the E-Government Readiness Index, but used for other analyses.

Similar to the Web Measure Survey, one of the goals of this paper and the Workshop is to generate discussion, feedback and possibly recommendations for enhancing the E-Participation Measure, and at least adding to it, if not transforming it completely into, a more quantitative measure.
IV. NATIONAL LEVEL E-GOVERNMENT MODELS

DEVELOPING A COUNTRY CLASSIFICATION SYSTEM FOR E-GOVERNMENT

Another opportunity that has clearly presented itself throughout the Global E-Readiness research and evaluation period is to create rich e-government profiles for each of the UN member nations. In addition to the country level e-readiness data and trends already available through the UN Global E-Readiness Reports, quantitative data on the following additional country-level variables could start the development of comprehensive e-government country profiles, or reports.

Population

The size of a country in terms of population is a factor in how a country does, and possibly how it best should, implement e-government and approach e-participation. For example, all highly populated countries, regardless their level of development, will require higher levels of threshold connectivity and greater reach for their e-government programs. A basic five tier classification system—Very Large to Very Small—utilizing United Nations data should be sufficient for the purposes of the Global E-Readiness Program.  

- Very Large
- Large
- Medium
- Small
- Very Small

Geographic Area

Similar to population, countries that comprise large geographic areas generally have greater hurdles to overcome in terms of providing physical infrastructure, and thereby
connectivity, to their populace. By way of an extreme comparison, providing e-government services in a very large country like China is certainly more challenging from a geographic standpoint than providing those same services in a very small country like Luxembourg. Although new technologies such as wireless communications promise to lower the threshold needs of physical infrastructure, the geographic size of a country (let alone the geographic character of a country) remains a factor. Still the question of why certain large countries are able to overcome their geographic handicap while many small, even micro countries, cannot is worthy of exploration, and this classification system will facilitate such comparisons and research. Again, a five tier classification system utilizing available UN data and in line with the population classifications would be sufficient:

- Very Large
- Large
- Medium
- Small
- Very Small (Micro)

**Country Income Level**

Country income level is by all accounts a critical, if not the critical, factor in national development of e-government programs. One researcher has concluded that “Countries that were richer tended to have more electronic services on their websites. This is in keeping with the results of other studies suggesting that economic factors are vital to policy innovation in general and e-government in particular. There were no organizational or political factors that were important, only the level of fiscal capacity. Neither liberalism nor level of democracy were associated with e-government performance.” The Global Reports have utilized World Bank gross national income per capita (GNI) levels to compare e-government rankings among and
between country income level groupings. Based on the GNI, The World Bank employs a three-tier classification system for income levels, with the middle tier subdivided into two sub-classes:

- High Income
- Medium Income
  - Medium High Income
  - Medium Low Income
- Low Income

**Government Type**

A country’s governmental structure is a key factor in how e-government is, and can be, implemented. The UN researchers, for example, have noted that countries with federal government systems tend to implement certain approaches to e-government most probably because of the limitations of the government system. Certain key areas, education, for instance, are often not within the federal government’s jurisdiction, and are therefore missing or have very light coverage at the national level. Similarly, in federal systems where much authority is delegated to state and municipal governments, national level e-government programs often lack connection to or integration with the sub-level government programs. (Note that this lack of intergovernmental integration is typical regardless the type of national government system.) There are available a number of approaches to classifying national governments by types (e.g., republic, federal republic, monarchy, parliamentary democracy, constitutional democracy, and numerous others); one source and classification system would have to be selected for standardization purposes. It should also be noted that no single type of government system has a hold on “good” or “effective” e-government implementation. As Darrell West has noted in his own research, “I show that nondemocratic systems are as likely as democracies to perform well on new technology initiatives. Some authoritarian countries have been successful with digital
government because they have top-down political structures and are able to overcome bureaucratic and political intransigence.\textsuperscript{42}

**E-government Access Approach**

Ascribing to each country a score or rating on various dimensions of e-government access (that is, access to e-services and information, as opposed to access to infrastructure, connectivity, etc.) would go far in describing a country’s e-government program. How exactly to develop the rating system presents an additional methodological challenge, but could be done by a “counting” of indicators associated with each of the following dimensions:

- **Access to Services/Service Delivery**: Social services orientation (health, education, welfare, etc.), or civil services orientation (licenses, records, applications, etc.) or balanced services.

- **Access to Information/Information Delivery**: Services information orientation (how to apply for/receive benefits, how to initiate public service processes, etc.); governance information orientation (access to laws and policies, decision-making information, financial and budgetary information, etc.); balanced.

- **Access to Participation**: Procedural orientation (e-consultation, e-rulemaking, e-voting); inclusion orientation (encouraging access to underserved groups, providing new means of access); balanced.

- **Primary Access Strategy**: Transaction orientation (complete government processes online, complete financial transactions online, closed loop consultations); interactive orientation (push and/or pull services, information, etc.; provide two-way interaction between government and constituents); program
orientation (information, education and services integrated in online programs aimed at specific subject/policy areas or government programs); balanced.

**EMERGING NATIONAL E-GOVERNMENT MODELS AND APPROACHES**

Over the course of the UN Global E-Government Readiness Program, a number of distinct e-government models, or strategic approaches, have emerged at the national level. To be sure, most countries are still experimenting with e-government and feeling their way down the digital path, and most cases researchers have observed instances of two or even more approaches in practice. Still, one of the models or approaches generally takes a lead, or dominant position in terms of a nation’s overall e-government strategy.

Following are basic outlines for each of the emerging models. There is clearly an opportunity to develop these models more fully as part of the UN E-Government Readiness Program, thus presenting them as models or guideposts for national e-government development, and eventually implementation, by individual countries. At this point in time the descriptions of the models are just that—general descriptions based on three years of observation. They are in no particular order, and at this point in time the research team has made no comments on whether one model is better or more effective than another, other than to suggest which models might be appropriate for certain types of countries. These descriptions should serve as a good starting point for developing a more rigorous framework for each of the models.

1. **Centralized, Focused-Point of Access Model**

   This model is typically characterized by the development of a national government web portal. There is often a consistent look, feel and terminology across national government websites. Communications and information flow with citizens is filtered through the centralized
portal system, lending the appearance, if not the reality, that there is a single point of access for information and services within the national government.

This model might be most appropriate for small, developed or developing nations focused on advancing government institutions, administrative structures and delivering new services to a small and accessible population (examples include Malta, Estonia); or for advanced developed nations, large or small, that can focus e-government resources on integrating and delivering quality services and information through large, complex portal systems (examples include Canada, Singapore).

2. De-centralized, Programmatic Model

This approach is characterized by the development of stand-alone websites for specific programs or program areas (e.g., health, education), often run directly out of national ministries. These stand-alone program sites often have unique branding, communications and web environments for each of the different programs, often based on the perceived characteristics and needs of the targeted users. A national homepage or even national portal may exist, but it is generally lean and used primarily to channel users to the individual program sites. The program sites are used primarily as support mechanisms for traditional service delivery systems rather than true e-services.

Although instances of the approach can be seen in a variety of settings, it might be most appropriate for developing nations desiring to focus potentially limited e-government resources on delivering critical social and human services (e.g., public health programs, education programs,) and economic development programs (e.g., rural economic development, agricultural modernization).
3. Connected Government Model

This approach is characterized by careful integration of electronic services and business processes. Along the same lines, the linkages between and among different ministries, agencies and programs are relatively seamless—a major accomplishment for any governmental entity. In its most advanced form, there are strong linkages between levels of government as well.

This approach may be most appropriate for advanced developed nations—focus on providing a unified, connected government approach to citizens highlighting government efficiencies, customer service, etc. (examples include United Kingdom, United States, Sweden, Korea), and reform oriented developing nations focusing on efficiencies, stability, transparency (examples include Chile, Mexico).

4. E-Participation Focused Model

This model, while not yet widely observed, focuses on providing citizens one or more ways to participate in government, from providing feedback and input on policies and decisions, to posing questions to elected officials and senior administrators, to simply being able to make their voices heard and opinions known online.

This model can be appropriate for virtually any country, and may be as appropriate for developed countries as for developing countries that may not have the government administrative structures and business processes in place to effectively implement e-government services but that might easily be able to initiate basic e-participation activities.

5. Focused E-Government/E-Services Model

This model is most characterized by the development of specific e-government and/or e-services portals encouraging users to transact their business online and engage in other full online activities. Governments taking this approach, an approach that some observers would say
is a plurality if not a majority of advanced e-government programs, often sacrifice, consciously or unconsciously, citizen participation for effective e-services: “Rather than seeing the Internet as a tool for citizen empowerment and public responsiveness, they have put more money into information and services than accountability-enhancing and interactive features that strengthen the role of the general public.”43 Often the look, feel and branding is around the concept of e-government, really more of a marketing focus. Countries taking this approach to e-government sometimes couple it with the development of national identification/account programs allowing citizens/users to sign up for government information/activities and conduct government business online or via other electronic means (mobile, kiosks, cards, etc.).

This approach appears to be most appropriate for advanced or advancing developed nations that seek to transform government to e-government. E-services are on the leading edge of this transformation, and the e-participation aspect, if present at all, takes a secondary position.
V. A FRAMEWORK FOR MOVING FORWARD

This final section puts forth a number of possibilities for moving forward with the next phase of the UN Global E-Government Readiness Program. Some of the possibilities are clearly doable without too much additional effort; others would require additional thought and planning; and still others would require additional resources, in some cases substantial. Which, if any, of the possibilities should be turned into reality as part of the UN Program remains squarely within the decision making authority of the United Nations. The purpose of this exercise, as stated in the introduction of this paper, is to provide input and guidance to the United Nations as it considers how to evolve the program. The value of the past and current work cannot be overstated—the UN Reports are cited universally, and individual governments from around the globe have used the reports, and by extension, access to UN advice and guidance, to plan and implement national e-government programs and strategies. As one international observer puts it, “Governments all over the world compete with respect to the most ambitious electronic service delivery targets, and countless surveys try to measure their respective success. This international dimension has reinforced the commitment of the respective national politicians, and, moreover it provides ample opportunity not only to benchmark but also to learn from the successful approaches and pitfalls in other countries.” Following are a number of possibilities for enhancing the value of the UN Program and facilitating the continued progress of e-government implementation across the globe. There are certainly numerous additional opportunities for enhancing the UN Program, but these shall serve as the starting point for discussion.
A. Refine the Baseline E-Government Readiness Index

1. Vertical Consolidation: The current list of indicators, operationalized primarily as yes/no questions and/or number counts, could be refined. Indicators that are present in 95% of the countries (e.g., contact information) and that are less of an issue than in the initial days of e-government development could be deleted or rolled up into other indicators.

2. Vertical Consolidation: The current list of e-government indicators should be expanded in the light of new technologies (e.g., WiFi, mobile government, others) and new e-government issues and opportunities.

3. Horizontal Consolidation: The breadth of government covered by the Global E-government Readiness Index—currently the national web presence along with the education, health, labor, social welfare, and economic development/finance ministries—could be expanded to include other equally important policy and subject areas.

4. The binary approach for calculating the Web Measure Index, one of the primary sub-indices of the E-government Readiness Index, should be tested and validated—is there a better or more meaningful statistical approach, given the level of data and information available.

B. Refine the Baseline E-Participation Index

1. The E-Participation Index should be transformed, or at least be supplemented with, a quantitative index. What can and should be measured to create this kind of quantitative e-participation index is one of the key discussion items of this conference, and is being considered by outside experts in the field.
2. The E-Participation Index should be broadened in some way to include more than simply the tools of e-participation. Currently the E-Participation Measure focuses only on the supply side of the e-participation spectrum, and then only on one part of the supply side. The diagram below illustrates this. It is admittedly a challenge to develop meaningful approaches to measure the other stages along the e-participation spectrum, especially any sort of impacts analysis. However, it would certainly be worthwhile and of great value to start the process of developing those approaches. Some preliminary ideas are incorporated into the additional suggestions and recommendations below.

![Diagram of e-participation spectrum]

C. Develop E-Government Impacts Evaluation Reports

Following is an example of how a specific E-Government Impact Evaluation study might be implemented through the Global E-Government Readiness Program:

Example—E-Procurement Impact Evaluation: Using the UN Reports data and findings as a starting point, a research team could focus on the impact of national e-procurement initiatives.

1. Discussion of e-procurement models and e-procurement development in the global context: country by country, regionally, globally

2. Impacts Evaluation: A basic impacts model could look something like the following:
• Governance Impacts: For example, transparency in procurement (more transparent, less transparent); impact on corruption
• Administrative Impacts: For example, administrative costs of procurement (increased, decreased); average length of procurement (increased, decreased);
• Economic Impacts: For example, market competitiveness (increased, decreased); private sector transaction costs (higher, lower)
• Social Impacts: For example, impact on local jobs creation (increased, decreased)

3. Collection and description of e-procurement best practices according to the UN E-Government Best Practices Framework and the findings of the impacts evaluation.

D. Develop a UN Methodology for E-Government Best Practices

The UN Global Reports each include a smattering of Best Practices and Case Studies. Other efforts both inside the UN and from outside agencies also purport to collect Best Practices, but none do so systematically or with any sort of methodology. Rather, they fall into one of two categories: Collecting what is readily available (e.g., searching online, self-reported best practices and case studies); or focusing only on one narrow subject or thematic area.

As part of the ongoing UN Global E-Government Readiness Program the research team could develop a methodology for systematically identifying, analyzing and reporting E-Government Best Practices across a range of subject areas and from a range of geographic regions to keep them relevant. Following is an example of what this E-Government Best Practice/Case Study Framework might include:

• E-Gov Readiness Baseline Information: Country Profile, Country E-Gov Classification, E-Readiness Baseline Information
• Brief Description of Selected Practice/Case

• Administrative Locus: What agency/division/department/etc. was the lead agency for the development, implementation (actual or oversight of contractor) and management of the selected practice.

• Implementation Information: Some of the most useful information for governments about e-government development and implementation is also often the least reported:
  o Cost factors
  o Funding/budgetary considerations
  o Is the Selected Practice Part of Plan/Initiative/Strategy
  o Length of Implementation
  o Technology Platforms/Components, Integration
  o Other factors specific to the selected e-government practice

• Usage: Available data/statistics on the actual usage of the selected practice.

• Evaluation Factors/Return on Investment (ROI): What criteria, if any, are in place to evaluate the success/return on the selected practice?

E. Develop National E-Government Profiles

The UN Global Reports has now created a three year foundation of national level e-government data and information. A number of other organizations (e.g., OECD, World Bank) and research initiatives have developed country-level profiles including some e-government information for various reasons, but none has developed a set of country reports covering the globe, and none has the wealth of baseline UN Global E-Government Readiness data incorporated. The UN E-Government Readiness Program team has initiated the development of
country profiles from the available data. These country profiles, or reports, should be developed more fully according to the country classification scheme discussed earlier in this paper in Chapter IV.

**F. Survey Member States on E-Government Application Usage**

Most, but not all, governments that are implementing e-government applications in online/mobile environments will have some way to monitor or count actual usage. By creating a baseline survey for e-government usage for which countries could self-report annually, the UN Global E-Readiness Program could standardize to some extent the key usage indicators and most relevant means of reporting usage.

**G. Identify and Collect Leadership, Policy, Legal and Strategy Documents and Indicators**

A major source of valuable, but still untapped, knowledge and resources for e-government are the individual national governments themselves. As e-government programs are implemented around the globe, relevant documents that could be used as models or guides for countries seeking to learn from others are being created, approved and archived. As part of the current Global E-Government Readiness Program research process researchers identify and note links to relevant e-government policy documents, strategies, etc., but these documents are not formally collected or classified. The undertaking would admittedly be huge, but given that the process is in place, with additional resources a vast library of formal e-government documents and resources could be developed. Following are some of the types of documents and other indicators that could be identified:
• Leadership Vision: Evidence at the highest executive level of support and a vision for e-government (e.g., a national speech, a presidential policy directive, a presidential memo); creation within the executive an office or at least an official whose portfolio includes e-government.

• Policy/Legal/Regulatory Readiness: Identify for each country the primary policy support for e-government; evidence of 3-4 key legal indicators for e-government/e-readiness;

• Strategy Readiness: Is a national level e-government or similar strategy(ies) in place?

As noted, the elements described above are not intended to be comprehensive, but rather to serve as an initial “framework” for moving forward with the UN Global E-Government Readiness Program. Developing ideas for building out that framework is the task at hand for the remainder of this workshop and, indeed, is an ongoing task for the UN project team in its efforts to continually improve the program.
REFERENCES

1 Electronic government, also known as digital government. For purposes of this paper the common construction “e-government” will be used.
2 Electronic participation, also variously called e-democracy, digital engagement, and others. For purposes of this paper the common construction “e-participation” will be used throughout and is inclusive of other terms.
3 Read more about the United Nations Reports at the United Nations Online Network in Public Administration and Finance (UNPAN) at http://www.unpan.org,
4 Read more about the World Economic Forum study at http://www.weforum.org/site/homepublic.nsf/Content/Global+Competitiveness+Programme%5C+Informatio
5 n+Technology+Report,
6 Read more about the Brown University study at http://www.insidepolitics.org/policyreports.html.
10 Read more about the RAND study at http://www.rand.org/publications/MR/MR1733/.
11 Read more about the Pacific Council (PCIP) study at http://www.pacificcouncil.org/pdfs/e-gov_paper_f.pdf.
14 Academic centers include the E-Governance Lab at the University of Southern California (USC), the National Center for Digital Government at the University of Massachusetts Amherst and the Oxford Internet Institute (OII), as well as numerous others.
16 See, for example, Vivienne Jupp, “Realizing the Vision of e-Government,” in The World of E-Government. The article compares qualitatively 23 countries’ e-governance maturity based on surveys conducted by Accenture. The UN’s vision of e-inclusion for all is discussed elsewhere in this paper, and is introduced in the United Nations Global E-Government Readiness Report 2005 (see, for example, the Executive Summary and all of Part II). The Report can be found at http://www.unpan.org/egovgovernment5.asp.
20 For more information on the UN survey’s theoretical framework, see United Nations Global E-Government Survey 2003, supra note, at 8-17.
21 Id. at 11.
23 Id. at 8.
31 Wilhelm, Digital Nation.
35 See the UN Millennium Goals website at http://www.un.org/millenniumgoals/.
36 Id. at 16.
37 Id. at 17 (errors in original). For a more detailed discussion of the Web Measure Assessment Model, see United Nations Global E-Government Survey 2003, supra note Error! Bookmark not defined., at 11-16.
38 Population data, for example, could be supplied by The United Nations Department of Economic and Social Affairs (UNDESA) Population Division. See http://www.un.org/esa/population/unpop.htm.
40 West, Digital Government.
42 West, Digital Government.
43 West, Ibid. at 175.