

A Readiness Assessment Framework for e-Government Planning - Design and Application

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ABSTRACT

The availability of information on electronic government readiness is a critical factor in developing effective e-government policies and strategies. Although there are many readiness assessment instruments in the public domain, there are no clear guidelines on how these instruments can be reused as frameworks in carrying out assessment in specific contexts, such as in e-government planning or implementation. The design of readiness assessment frameworks requires clear specification of the assessment purpose and the design of concrete instruments explicitly based on the information requirements. Usually, these information needs are modular and can be satisfied by any instrument composed from the required set of assessment components. In this paper, we examine the requirements for a readiness assessment framework to support e-government planning and propose an assessment framework consisting of a set of assessment perspectives. Each of these perspectives is mapped to a corresponding set of concrete assessment components (partly derived from other major e-government assessment frameworks) satisfying the information requirements of these perspectives. The componentized framework allows for easy substitution or specialization of specific components to suit different contexts or assessment scenarios. As an example, we show how this framework can be used for developing a readiness assessment instrument to support e-government planning in Maldives.

Categories and Subject Descriptors

J.1 [Administrative Data processing]: Government

General Terms

Management, Measurement, Theory

Keywords

e-Readiness, e-Government, Strategic Planning, Maldives

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1. INTRODUCTION

As more developing countries invest in Information and Communication Technology (ICT) for national development and particularly the reform of their public sector governance, there is an increasing need to assess their readiness to harness the opportunities created by ICT. The questions on the readiness of a country to benefit from ICT, the potential and opportunities created by ICT, etc. must be answered to develop and implement effective strategies for ICT-enabled public value creation.

There are numerous e-readiness assessments and surveys that try to answer such questions. In addition, there are several e-readiness initiatives aiming to help developing countries in this area, and numerous e-readiness assessment tools, each looking at various aspects of ICT, society, and the economy [10]. In fact, more than 1,506 e-readiness assessment exercises have been conducted globally [9]. At least 192 countries have been assessed by at least one tool and 68 countries have been assessed between five and ten times by different organizations, while a further 69 countries have been assessed over ten times [9, 19].

This paper presents a readiness assessment framework for electronic government planning. The framework provides a set of assessment perspectives including the strategic context for e-government – national development, and policy goals, supply, demand, perceptions, etc. Given a specific assessment scenario, these perspectives are selected and corresponding components specialized to address the resulting information needs. Concrete assessment components are partly obtained from well-known e-government assessment instruments including UN e-Government Readiness Assessment Survey, Brown University Global e-Government Survey, and Accenture e-Government Leadership Survey. The component-based frameworks provides significant flexibility in developing concrete assessment instruments from existing components and customizing these components as required with respect to concrete information requirements. For illustration, we show how a concrete readiness instrument can be developed to support e-government planning for Maldives.

The rest of this paper is structured as follows. Section 2 explains e-readiness assessment, from definitions, to tools. Section 3 presents five e-readiness frameworks for e-Government by: UNDESA, Brown University, Accenture, Waseda University, and United Nations University. Section 4 conducts comparative analysis between them. Section 5 proposes a component-based e-readiness assessment framework to overcome some of the limitations, and Section 6 applies this framework to the case of the Maldives. The final Section 7 presents some conclusions.

2. E-READINESS ASSESSMENT

2.1 Definitions

The available e-readiness assessment tools adopt different definitions for the concepts of e-readiness and thus different ways to measure it, resulting in a variety of assessment, analysis and benchmarking reports at different levels of detail.

The Harvard University Center for International Development's (CID) "Readiness for the Networked World: A Guide for Developing Countries" [12] defines e-readiness as the degree to which a community is prepared to participate in the Networked World - a world in which everyone, everywhere, has the potential to reap the benefits of connectivity to the network. They note that the value to a community of assessing its "readiness" lies in evaluating its unique opportunities and challenges.

The Economist Intelligence Unit's (EIU) "E- Readiness Rankings" [13] defines e-readiness as the "state of play" of a country's ICT infrastructure and the ability of its consumers, businesses and governments to use ICT to their benefit.

The APEC "E-Commerce Readiness Assessment Guide" [8] defines e-readiness as the degree to which an economy or community is prepared to participate in the digital economy.

Choucri et al. [11] defines e-readiness as the ability to pursue value creation opportunities facilitated by the use of the Internet. They highlight that the capacity to pursue specific opportunities as key feature of e-readiness.

There is no standard definition, and the underpinning principles are generally embodied in the areas of a particular framework.

2.2 Tools

e-Readiness assessment tools can be generally categorized by their aim and domain of application. The comparison of over 20 e-

readiness assessment tools by bridges.org [10] found that the aims vary across the tools and can be summarized as follows:

- Gauging the readiness of a particular company or a group of companies to participate in e-commerce;
- Assessing a country's preparedness for e-commerce;
- Assessing the current level of technology in a region as a basis for forecasting future technology levels and trends;
- Providing a rough gauge of technology use in an area;
- Understanding the relative roles of political, economic and social factors affecting ICT growth and use;
- Understanding why particular countries progress differently;
- Assessing the effects of ICT on the lives of real people, and considering how widely the technology is really being used.

Given a particular aim, e-readiness assessment tools are essentially applied in three domains: those assessing purely the ICT infrastructure, those assessing e-readiness of particular sectors of a society, and those assessing the society as a whole.

These domains are not mutually exclusive. While assessment tools do tend to focus in one of these three domains they also, to varying levels, assess elements of the features from the other domains. The bridges.org comparison of e-readiness assessment tools clearly shows that almost all the e-readiness tools compared assessed the ICT infrastructure with respect to measures like the penetration of fixed and mobile telephones, Internet and broadband usage [10].

Table 1 illustrates the three domains of e-readiness assessments using three representative assessments tools. It shows that the aims of assessment as well as the indicators under assessment differ across domains.

Table 1 – e-Readiness Tools: Domain, Aim, Indicators

Assessment Tool	Domain	Aim	Indicators
World Telecommunication /ICT Indicators	ICT Infrastructure Readiness	Identify, define and produce statistics covering telecommunication and ICT sectors.	Over 100 indicators of telecommunication and ICT sector , including statistics on: ○ Telephony ○ Internet and computers ○ national indicators e.g. GDP
APEC E-Commerce Readiness Assessment	Sectoral e-Readiness	Help governments develop their own focused policies. It can be adapted to specific environments, e.g. for development of e-commerce.	○ Basic Infrastructure and Technology ○ Access to Necessary Services ○ Promotion and Facilitation Activities; Skills and Human Resources ○ Positioning for the Digital Economy
CID's E-Readiness Assessment Guide	Society's e-Readiness	Provides the first step in creating a strategic approach to planning, for communities in the developing world.	○ Access ○ Learning ○ Society ○ Economy ○ Policy

The detailed comparison by bridges.org suggests that e-readiness assessment tools can also be characterized by groups of measures supported. The comparison by bridges.org adopted five groups - Technology, Economy, Government, Education and Social, with a number of measures inside each group. In Table 2 we use one indicator from each of the five groups of indicators used by

bridges.org to illustrate their coverage by assessments tools in different domains. The coverage is indicated using a comparative scale from "0" (no coverage) to "3" (detailed coverage). The table indicates the degree to which the e-readiness assessment tools in different domains support these five groups of measures.

Table 2 – e-Readiness Tools: Indicators and Measures

Assessment Tool	Domain	Technology	Economy	Government	Education	Social
		Infrastructure – Network, Tele-density	e-Commerce	e-Government	Use in Schools	Basic Literacy, Poverty, Other Social Factors
World Telecommunication /ICT Indicators	ICT Infrastructure Readiness	3	3	3	2	2
APEC E-Commerce Readiness Assessment	Sectoral e-Readiness	3	3	1	2	0
CID's E-Readiness Assessment Guide	Society's e-Readiness	3	2	2	2	0

The identification of these groups indicates that readiness assessment can be modularized and assessment tools can be described in terms of the assessment modules or components supported. Given a particular aim, domain, and other factors, we envision that the e-readiness assessment tool can be built by putting together assessment components. Following this approach, we propose in this paper a component-based readiness assessment framework to support strategic e-government planning.

3. E-READINESS FRAMEWORKS FOR E-GOVERNMENT - SURVEY

This section surveys five representative and well known readiness assessment frameworks for e-government, available in the public domain, followed by the comparison in Table 3.

Such frameworks serve at least two purposes: (1) international benchmarking of nations and (2) decision support for planning and intervention. The tools that support such frameworks can be generally divided into: (1) ready-to-use questionnaires, toolkits, etc. (2) case studies, and (3) third-party surveys and reports. Readiness assessment frameworks for e-government usually fall under the “third-party surveys and reports” type, and aim at providing international benchmarking of e-government.

We describe in the following sub-sections five e-government readiness assessment frameworks developed by UNDESA, Brown University, Accenture, Waseda University and UNU.

3.1 UNDESA e-Government Survey

The United Nations Department of Economic and Social Affairs (UNDESA) is one of the most consistent surveyors of the global state of e-government since 2001. e-Government surveys published in 2001 [15], 2003 [16], 2004 [17], 2005 [18] and 2008 [19] benchmark all 192 UN member countries.

The purpose of the survey is to provide governments with a measuring tool that highlights their areas of strength and weakness, within the e-government domain. As one of the most prominent e-government surveys, it is distinguished by its consistency and the large number of nations assessed. It employs human development, provision of Internet based e-services and

access to basic telecommunication infrastructure as major indicators for e-government readiness (see Table 3).

3.2 Brown University Global e-Government

The Center for Public Policy of the Brown University (CPP-BU) has been assessing government websites since 2001. Based on this assessment, CPP-BU published the global state of e-government with respect to the delivery of public sector information and online services through the Internet, beginning in 2001 [20] and updated in 2002 [21], 2003 [22], 2004 [23], 2005 [24], 2006 [25] and 2007 [26]. The CPP-BU Global e-Government survey series only assesses a set of features or items of government websites and discusses the development of these features.

3.3 Accenture e-Government Leadership

Accenture has been carrying out e-Government surveys since 2000. The series was named “The Government Executive Series on e-Government Leadership” for 2001 [1], 2002 [2], 2003 [3] and 2004 [4], and “The Government Executive Series on Leadership in Customer Service” for 2005 [5], 2006 [6] and 2007 [7] to reflect changing focus of their measurement.

Whilst UNDESA and CPP-BU assess e-government in over 190 countries, Accenture assessed 20 countries in 2000 and 22 since.

In 2005, Accenture changed their assessment methodology and renamed the e-Government Leadership series to Leadership in Customer Service. The Accenture Leadership in Customer Service series was further changed in the 2007 to incorporate the customer voice to the assessment, a numerical index computed from the results of customer surveys.

The e-Government Leadership Reports and Leadership in Customer Service reports provide a comprehensive overview of e-Government development and maturity in the 22 countries assessed, and highlights the characteristics that differentiate the various levels of e-government development. They also comment on the key issues governments must address in order to improve the level of online service provided to citizens and businesses. Its heavy customer service focus and incorporation of customer or demand side feedback distinguishes the Accenture assessment of e-government development, as evident from Table 3.

3.4 WU-IEGOV e-Government Ranking

The Waseda University e-Government Ranking is conducted by Institute of e-Government at Waseda University (WU-IEGOV). In contrast to e-Government frameworks presented earlier, the WU-IEGOV e-Government Ranking started in 2005 [27], and has been done annually since: 2006 [28], 2007 [29] and 2008 [30].

The WU-IEGOV e-Government rankings started with 23 countries in 2005, growing to 32 in 2006 and 2007, and 34 in 2008.

The WU-IEGOV ranking aims to monitor and evaluate the development of e-Government [28]. In addition to the basic ICT and e-Service indicators, the WU-IEGOV rankings assess e-government promotion and public sector reform initiatives and the management of IT in the public sector as important to e-government development as detailed in Table 3.

3.5 UNU e-Readiness Assessment

A service-oriented e-Government survey of 44 agencies of the Macao SAR Government was carried out between 2004 and 2005 by United Nations University (UNU) and other partners of the e-Macao Project. The methodology of this assessment effort was documented in the UNU-IIST Report No. 361 [14].

The main objective of the survey was to determine the state of readiness for e-Government in each of the agencies assessed, to determine the state of readiness for e-Government in Macao SAR.

While all of the e-government readiness assessment frameworks assess at national level, the UNU e-Readiness Assessment assesses at agency level and is particularly designed to aid strategic e-government planning across the whole of the government.

4. E-READINESS FOR E-GOVERNMENT – COMPARATIVE ANALYSIS

The comparison of measures, strengths and weaknesses of the five e-readiness assessment frameworks described in Section 3, based on the information requirements for strategic e-government planning, is given in Table 3.

From this table, we observe that the e-governance readiness frameworks largely assess various elements or measures, and generally aim to benchmark countries. In contrast, the UNU e-Readiness Assessment Framework provides a detailed picture of the agencies' readiness for e-government, formulated at the central agency level, which can subsequently guide policy and strategy formulation at this level.

We also note that most e-readiness frameworks for e-government focus heavily on electronic service delivery through Internet and on national indicators for ICT development. In contrast, the Waseda e-Government Rankings also covers back-office integration, public sector reform, ICT organization within public sector (CIO), and the assessment of the enabling environment, as important measures of e-readiness for e-government.

Furthermore, we see that the e-readiness frameworks do not support assessment at the different levels of governance. The assessments are primarily focused on the national level, and the readiness for e-government of local governments, councils and individual communities are not assessed.

Table 3 – e-Readiness Assessment Frameworks for e-Government: Comparison

Assessment	Measures	Strengths	Weaknesses
UNDESA e-Government Survey	<ol style="list-style-type: none"> 1) Web measure index – based upon a five-stage maturity model 2) Telecom infrastructure index – based upon Internet Users/PCs/Fixed lines/Mobile phones/Broadband per 100 inhabitants 3) Human capital index – based upon adult literacy rate and the combined primary, secondary and tertiary gross enrolment ratio 	<ul style="list-style-type: none"> ○ Benchmarking shows how countries are developing relative to each other ○ Provides an overall picture of national level development towards knowledge society with respect to other countries ○ Can act as a guide in national-level policy formulation 	<ul style="list-style-type: none"> ○ Measures are relative ○ Does not provide details necessary for effective strategy formulation at various levels of governance – like local or community levels of multi-level governments ○ Citizen demand perspective is not assessed ○ Emphasis on a single channel – other channels not assessed
CPP-BU Global e-Government	<ol style="list-style-type: none"> 1) Online Information 2) Electronic Services 3) Privacy and Security 4) Disability Access 5) Foreign Language Access 6) Ads, User and Premium Fees 7) Public Outreach 	<ul style="list-style-type: none"> ○ Measures how websites and e-government portals of one country are doing with respect to another country, region or the world ○ Can act as a guide to national portal development 	<ul style="list-style-type: none"> ○ Only assesses websites and portals ○ Does not provide details necessary for effective strategy formulation at various levels of governance – like international, national, local and community levels ○ Citizen and civic society demand perspective and public sector supply context are not assessed ○ Emphasis on single channel – back-office integration and other channels are not assessed
Accenture e-Government Leadership / Leadership in Customer Service	<ol style="list-style-type: none"> 1) Service Maturity – three stage model assesses the depth of service and the breadth or number of online services. 2) Customer Service Maturity – measure of how well a government is doing with respect to citizen-centered, multi-channel, cross-government service delivery and in proactively 	<ul style="list-style-type: none"> ○ Country ranking includes citizen perceptions ○ Can act as a guide to e-government development paths taken by the more developed countries 	<ul style="list-style-type: none"> ○ Ranking instruments are not public domain ○ Does not provide details necessary for effective strategy formulation at various levels of governance – like international, national, local and community levels ○ Civic society demand perspective

	communicating with citizens and businesses. 3) Citizen Voice – quantifies and incorporates the perceptions of the citizen		and public sector supply context are not assessed
Waseda University e-Government Ranking	1) Network Preparedness – based on Internet/Broadband/PC users and Security System. 2) Required Interface-Functioning Applications – based on the presence of online applications like e-tax. 3) Management Optimization – based on system and network integration and public sector reform through ICT 4) Homepage situation – quality portals 5) Enabling CIO role and functions 6) Promotion of e-government - promotion, legal framework and evaluation systems	<ul style="list-style-type: none"> ○ Assessment takes into account back-office integration, public sector reform with ICT, CIOs to bridge technical-administrative gaps and promotion, legal frameworks and the existence of systems to evaluate e-government development as important elements 	<ul style="list-style-type: none"> ○ Ranking instruments are not available in the public domain ○ Lacks agency-level assessment ○ Citizen and civic society demand perspective are not assessed ○ Emphasis on single-channel service delivery
UNU e-Readiness Assessment	1) Organization structure – units/reports 2) Services – provided and received, core services and internal service 3) Resources – HW, SW, network, telecom, human, financial 4) e-Government – website, challenges, perceptions	<ul style="list-style-type: none"> ○ Detailed assessment of the agency, services and resources ○ Can support strategy formulation at agency level 	<ul style="list-style-type: none"> ○ Does not provide details necessary for effective strategy formulation at various levels of governance – like local and community levels, of multi-level governance ○ Citizen and civic society demand perspective are not assessed

5. COMPONENT-BASED E-READINESS FRAMEWORK FOR E-GOVERNMENT

In this section, we propose a component-based e-readiness assessment framework as a basis for develop specific assessment instruments for strategic e-government planning. The framework is designed to support the development of e-readiness instruments for e-government planning at different levels of governance.

The proposed framework is characterized by components organized into 8 perspectives as described in Table 4: Stakeholders; Demand for e-Government; Supply of e-Government; Technology; National, Federal, Local, Community and International Context; Enabling Environment; and Perceptions, Willingness and Challenges.

We briefly explain these perspectives below:

- C1) *Stakeholders*: This perspective provides information on the profile of the major stakeholders, their interests and expectations.
- C2) *Technology*: Provides information on available ICT infrastructure, resources, applications and services.
- C3) *Demand*: provides information on the e-government needs of stakeholders in terms of public services and information including channel or media preferences.
- C4) *Supply*: provides information on electronic services and information available to various categories of stakeholders. It also captures the existing technical capabilities available within government to deliver e-government initiatives.
- C5) *International Context*: This provides information on major goals with respect to international commitments such as the Millennium Development Goals related to national development.

C6) *National and Local Context*: Together with C5, this perspective captures the strategic context for the e-government program. It describes national and local development priority goals that must be supported by the e-government program.

C7) *Enabling Environment*: The components in this perspective provide information on the existing regulatory and legal environment and the pressing needs in this regard.

C8) *Perceptions*: This captures the current level of understanding and opinions of the stakeholders on e-government program to inform the design of advocacy and awareness campaigns or programs.

To develop components for these perspectives, we extend and adapt the UNU e-Readiness Assessment framework and the Waseda University e-Government framework. Table 5 shows how these components are selected from these frameworks.

The UNU e-Readiness Assessment framework is particularly detailed in its coverage of the demand and supply side of e-government at organizational level and we therefore chose to adapt and extend this framework for Demand and Supply components. It also cover organizational context, technology resources and online services and therefore. This framework will be extended satisfy the information requirements for the Technology, National and Local Context and Challenges perspectives of our proposed framework.

The Waseda University e-government rankings pay particular emphasis on existence of an enabling environment including the back-office integration, IT management in the public sector, legal environment and public sector reform. we propose to adapt and extend the Waseda University e-government rankings to develop the Enabling Environment Component, as shown in Table 5.

Table 4 – Component-Based e-Readiness Assessment Framework: Components

C1 - Stakeholder Profile 1) Citizen 2) Community Based Organization (CBO) 3) Non-Governmental Organization (NGO) 4) Central Government 5) Local Government 6) International Agency	C2 - Technology 1) ICT Infrastructure Indicators – Internet users, broadband, etc. 2) Online and ICT enabled Services – ICT enabled services through multiple channels – Internet, mobile, decentralized one-stop counters
C3 - Demand for e-Government 1) Public Service Requirements – Interaction Channels, Frequency and Service Requirements	C4 - Supply of e-Government 1) Public Services – Profile Services, Details of Services 2) Core Capabilities – Information Systems, Human Resources, Financial Resources, IT organization, Leadership etc.
C5 - International Context 1) UN MDGs 2) Development Partner Assistance Strategies 3) International Treaties, Conventions and Agreements	C6 - National and Local Context 1) Political developments 2) Geographic, Demographic and Cultural requirements 3) Socio-economic trends 4) Environmental factors
C7 - Enabling Environment 1) Policy and Strategic Direction 2) Public Sector Reform 3) Legal and Regulatory Environment 4) Promotion of e-government 5) IT Governance	C8 - Perceptions, Willingness and Challenges 1) Perceptions 2) Willingness 3) Challenges

Table 5 – Component-Based e-Readiness Assessment Framework: Component Implementation

	e-Macau e-Readiness Instrument				Waseda e-Government Ranking			
	Structure	Services	Resources	e-Gov	Network	Management	CIO	Promotion
C1 - Stakeholder Profile								
C2 - Technology				✓	✓			
C3 - Demand		✓						
C4 - Supply		✓	✓					
C5 - International Context								
C6 - National and Local Context	✓							
C7 - Enabling Environment		✓				✓	✓	✓
C8 - Perceptions, Willingness, Challenges				✓				

✓ Adapt and extend ■ Develop Instrument

The components for two perspectives – Stakeholder and International context need to be developed, while the components from all other 6 perspectives would be adapted as indicated in Table 5 above.

Given these perspectives, concrete assessment instruments can be developed for specific assessment exercise by: (i) selecting the relevant perspectives, (ii) specializing or customizing the components under the selected perspectives and (iii) composing these components into an instrument.

As an illustration, consider the following three scenarios:

- 1) A public-sector organization (PSO) wants to discover and exploit ICT opportunities, both within and with key community-based organizations (CBO) it regularly works with to deliver public services. Figure 1 depicts a possible e-readiness assessment tool suited for this scenario.

With this instrument the PSO is able to get information on the nature (profile) of the business, the supply and demand side and also the perceptions and challenges faced.

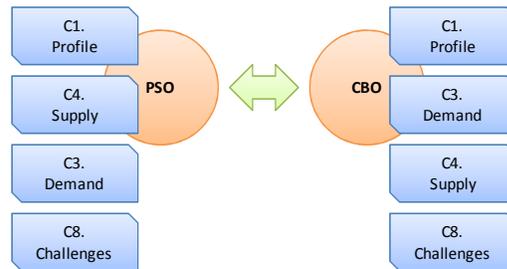


Figure 1 – Assessment Scenario 1

- 2) A civil society organization wants to create a ranking of local governments (LG) with respect to e-government. Figure 2 shows a possible assessment tool for this scenario.

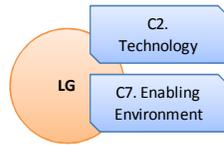


Figure 2 – Assessment Scenario 2

This component composition allows an organization to get information on the ICT infrastructure, quality and quantity of online and ICT enabled services and also information on legal infrastructure, public sector reform, IT management and e-government promotion activities which will allow comparing and ranking local e-government efforts.

- 3) Instead of ranking local governments against each other, a local government wishes to conduct strategic e-government planning. A possible e-readiness assessment tool for this scenario is shown in Figure 3.

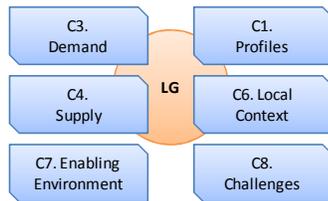


Figure 3 – Assessment Scenario 3

Strategic planning for e-government at local government level requires information on the demand and supply side of e-government. It also requires information on the local context and nature or profile of various stakeholders and the challenges and perceptions. Composition scenario 3 is designed to ascertain this information.

6. APPLICATION: E-READINESS INSTRUMENT FOR THE MALDIVES

In this section we propose how the component-based e-readiness assessment framework outlined in Section 5 can be used to develop a concrete e-readiness assessment tool to support the process of strategic e-government planning for the Maldives.

6.1 Requirements

First, we outline the specific requirements for the assessment exercise. In this regard, we expect the assessment tool to:

- R1) Assess demand by different atoll communities – what citizens from different atoll communities want from the government (the demand side of e-government)
- R2) Identify core capabilities within the government to deliver public services (the supply side of e-government)
- R3) Determine the average profiles of the citizens at the national and atoll levels (understanding the customer)
- R4) Determine the profiles of community-based and non-government organizations (understanding the civil society)

- R5) Assess perceptions, challenges and willingness of the public at national and atoll levels (different governance levels)
- R6) Assess international context with respect to implementation of MDGs, transition from the least- to middle-income status, and assistance strategies of development partners.

6.2 Instrument Development

The Maldives public sector comprises three primary tiers. The central tier, consisting of the President’s Office, line ministries and other public organizations, is located in the capital - Male. The 26 natural atolls of Maldives are divided into 20 administrative regions - Atolls. Each Atoll is administered by an Atoll Chief. The Ministry of Atolls Development, Atoll Offices and Island Offices are responsible for Atolls development and administration. At the island level, each island is headed by an Island Chief, who oversees the administration of the island. In addition to the Atoll and Island Offices, Atoll Development Committees, Island Development Committees, Women’s Development Committees and Community-Based Organizations (CBO) play a central role. Furthermore, the partnerships between Maldives and international development partners like the UNDP, World Bank, etc. are critical to the development of the country.

Strategic e-government planning for the Maldives requires taking into account local (Atoll) governments and international development partners, in addition to the central government. It also requires getting an accurate bearing on the demand and supply perspectives, again, at the national and local levels, and by the various stakeholders involved in public sector governance and service delivery. These stakeholders include citizen and community CBOs at the center. NGOs, atoll- and central-level governments, and private businesses must be also assessed as key stakeholders in public sector governance in the Maldives.

Therefore, for the purpose of instrument development, we divide the information needs conceptually into four groups as shown in Figure 4 and associate specific assessment perspectives to these groups. The average profiles of citizens, Community-Based Organizations, local government and municipal organizations, are assessed in Male and the 20 Atolls.

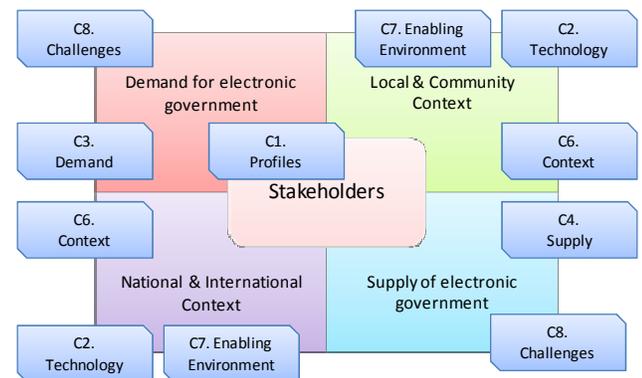


Figure 4 – e-Readiness Assessment Design for the Maldives

The demand is assessed with respect to the needs of the recipients of public services in Male and the Atolls, and also what are their perspective, willingness and challenges for participating in e-government. The supply of e-government is

assessed considering the core capabilities and challenges of public agencies and collaborating businesses with respect to public service delivery. Local and community contexts aim to provide the big picture at the Atoll level of the pervasiveness of ICT as well as the cultural, human and socio-economic contexts, all in the national and international contexts.

7. CONCLUSIONS

An effective e-government program requires a coherent set of policies and strategies to guide the development of the necessary regulatory frameworks, organizational and technical infrastructures, and information systems. e-Government policy and strategy development requires information about the readiness of public-sector organizations, as well as information about the stakeholders and their demand for e-government. In addition, e-government success is very much dependent on the strategies that are integrated into the context of the different levels of the society.

We observed that none of the major readiness assessment frameworks for e-government cover these different aspects and provides necessary information for effective strategic planning for e-government. As a solution, we propose a component-based framework to underpin the development of assessment instruments. The component-based framework specifically addresses the information requirements for strategic e-government planning. Its perspectives and corresponding components could be composed as required to satisfy the information needs for specific planning context.

This paper reports on the initial stages in the development of the component-based framework for e-government readiness assessment. Our future work involves providing more formal descriptions of the framework and providing software support in the use of the framework. Another direction is to collect experience from applying the framework, beginning with the Maldives, as a basis for adaptation and improvement.

8. REFERENCES

- [1] Accenture. *eGovernment Leadership: Rhetoric vs Reality - Closing the Gap*. Accenture, 2001.
- [2] Accenture. *eGovernment Leadership: High Performance, Maximum Value*. Accenture, 2002.
- [3] Accenture. *eGovernment Leadership: Engaging the Customer*. Accenture, 2003.
- [4] Accenture. *eGovernment Leadership: High Performance, Maximum Value*. Accenture, 2004.
- [5] Accenture. *Leadership in Customer Service: New Expectations, New Experiences*. Accenture, 2005.
- [6] Accenture. *Leadership in Customer Service: Building the Trust*. Accenture, 2006.
- [7] Accenture. *Leadership in Customer Service: Delivering on the Promise*. Accenture, 2007.
- [8] APEC. *APEC e-Commerce Readiness Assessment Initiative*. Asia-Pacific Economic Cooperation, 2000. <http://www.apec.org/apec/> (accessed: 24 July 2008).
- [9] bridges.org. *E-readiness assessment: Who is Doing What and Where?* bridges.org, 2005.
- [10] bridges.org. *E-Ready for What? E-Readiness in Developing Countries: Current Status and Prospects Towards the Millennium Development Goals*.
- [11] Nazli Choucri, Vincent Maugis, Stuart Madnick, and Michael Siegel. *GLOBAL e-READINESS - for WHAT?* Center for eBusiness@MIT, 2003. Paper 177.
- [12] CID. *Readiness for the Networked World: A Guide for the Developing Countries*. Information Technologies Group, Center for International Development, Harvard University, 2008.
- [13] Economist. *The 2007 e-readiness rankings: Raising the bar*. Economist Intelligence Unit, The Economist, 2007.
- [14] Elsa Estevez, Tomasz Janowski, and Adegboyega K. Ojo. *Planning for e-government - a service-oriented agency survey*. UNU-IIST Report No. 361, UNU-IIST, Macau SAR China, 2007.
- [15] UNDESA. *Benchmarking E-government: A Global Perspective*. UNDESA, New York, 2001.
- [16] UNDESA. *United Nations Global E-government Survey 2003*. UNDESA, New York, 2003.
- [17] UNDESA. *United Nations Global e-Government Readiness Report 2004 - Towards Access for Opportunity*. UNDESA, New York, 2004.
- [18] UNDESA. *United Nations Global e-Government Readiness Report 2005 - From e-Government to e-Inclusion*. UNDESA, New York, 2005.
- [19] UNDESA. *United Nations e-Government Survey 2008 - From e-Government to Connected Governance*. UNDESA, New York, 2008.
- [20] Darrell M. West. *WMRC Global E-Government Survey*. Taubman Center for Public Policy, Brown University, 2001.
- [21] Darrell M. West. *Global E-Government*. Center for Public Policy, Brown University, 2002.
- [22] Darrell M. West. *Global E-Government*. Center for Public Policy, Brown University, 2003.
- [23] Darrell M. West. *Global E-Government*. Center for Public Policy, Brown University, 2004.
- [24] Darrell M. West. *Global E-Government*. Center for Public Policy, Brown University, 2005.
- [25] Darrell M. West. *Global E-Government*. Center for Public Policy, Brown University, 2006.
- [26] Darrell M. West. *Global E-Government*. Center for Public Policy, Brown University, 2007.
- [27] WU-IEGOV. *2005 Waseda World e-Government Ranking*. Waseda University Institute of e-Government, 2005.
- [28] WU-IEGOV. *2006 Waseda World e-Government Ranking*. Waseda University Institute of e-Government, 2006.
- [29] WU-IEGOV. *2007 Waseda World e-Government Ranking*. Waseda University Institute of e-Government, 2007.
- [30] WU-IEGOV. *2008 Waseda World e-Government Ranking*. Waseda University Institute of e-Government, 2008.