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Simple Infrastructure in Measuring Countries e-Government

Sukhbaatar Dorj[1]

[1] Mongolian University of Science and Technology

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Abstract

As alternative to existing e-government measuring models, here I am proposing a new customer centric, service oriented, simple approach for measuring countries e- Governments. If successfully implemented, built infrastructure will provide a single e-government index number for countries. Main schema is as follows. Country CIO or equal position government official, at the beginning of each year will provide to United Nations dedicated web site 4 numbers on behalf of own country: 1) Ratio of available online public services, to total number of public services, 2) Ratio of interagency inter ministry online public services to total number of available online public services, 3) Ratio of total number of citizen and business entities served online annually to total number of citizen and business entities served annually online and physically on those services, 4) Simple index for geographical spread of online served citizen and business entities. 4 numbers then combined into one index number by mathematical Average function. In addition to 4 numbers 5th number can be introduced as service quality indicator of online public services. If in ordering of countries index number is equal, 5th criteria will be used. Notice: this approach is for country?s current egovernment achievement assessment, not for e-government readiness assessment.

Index terms— countries e-government index, e-government, infrastructure for measuring e-government, measuring e-government.

1 Introduction

ORLD is changing fast, with pressure of ICT developments world is changing even faster. Mobile phones putting new color to it, so yesterday's infrastructure burden to provide internet access evenly to all population, tomorrow will be solved easily and effectively with 3G and LTE technology. When internet is widely available, and internet generation is entering adult life, importance of some e-government measuring criteria's decreasing. With decrease of importance of essential criteria's in the past, a new criteria's and approaches need to be introduced in measuring e-Government. So as alternative to existing e-government measuring models like United Nations (UN) e-Govern- new customer centric, service oriented, simple approach for measuring countries e-Governments.

II.

2 Current Approaches

Several individual countries collect information on e-government, mostly based on statistical surveys of government organizations. The content and standards (especially regarding statistical units) are diverse. Countries that have conducted e-government surveys include Australia, Brazil, Czech Republic, Denmark, Egypt, India, New Zealand, Norway, Oman, Russia and Sri Lanka, among others.

Below briefly described most major initiatives that has global acceptance.

3 a) United Nations E-government Development Index

To measure the development of national egovernment capacities, the United Nations has generated the United Nations e-government development index (EGDI). The EGDI is a composite indicator that consists of three indices (online service index, telecommunication index and human capital index) that are equally weighted. In view of the steady growth in technological capabilities and the fact that the UN aims to reflect these developments in their indices.

The three indices that make up the EGDI cover a broad range of topics that are relevant for egovernment:

? The online service index measures a government's capability and willingness to provide services and communicate with its citizens electronically. ? The maturity of "life events" ? The availability and use of key enablers For online services analysis major 20 services was measured. The analysis of the 20 basic government services looks at the following elements:

4 i. Online sophistication

The extent to which government services allow for interaction and/or transaction between the administration and citizens or businesses. This measure covers 20 basic public services such as online tax filing, obtaining permits, enrolling in schools and many others.

5 ii. Full online availability

The extent to which there is fully automated and proactive delivery of the 20 key public services. A comparison over time illustrates the speed and extent of convergence in performance in Europe.

6 iii. User experience of services

The user-centricity and usability of e-Government services.

7 iv. Portal sophistication

Identifying the most mature, user-centric and personalized portals that provide direct access to a wide range e-Government services.

8 v. Sub-national analysis

for the first time, the 20 service metrics have been applied at NUTS (Nomenclature of Territorial Units for Statistics) levels, providing an unprecedented granularity of e-Government performance across regional and local administrations.

9 d) Framework ForaSet of E-Government Core Indicators

This Framework proposes a set of globally comparative e-government core indicators, reflecting the emphasis on e-government by the World Summit on the Information Society (WSIS) and the suggestion by the When you look at above methodologies and the indicators most of them are quite complex to collect and measure and requires an extensive labor and cost. In contrast, we proposing very simple approach which we tried to keep as simple as possible.

10 III.

The Proposed Approach UN will have a simple portal, where countries can log on and submit their 4 numbers, more precisely 8 statistical numbers, from which will be calculated 4 ratios, and from 4 ratio numbers one e-government index number for that country. This numbers are reflecting e-government ultimately from customer side. The final result of huge government efforts to serve country is how citizens and entities are served. Main schema is as follows. Country CIO or equal position government official, at the beginning of each year will provide to United Nations 4 ratio numbers on behalf of own country: 1) Ratio of available (transaction level) online public services, to total number of public services, 2) Ratio of interagency inter ministry online public services to total number of available online public services, 3) Ratio of total number of citizen and business entities served online annually to total number of citizen and business entities served annually online and physically on those public services, 4) Simple index for geographical spread of online served citizen and business entities.

In addition to 4 numbers 5 th optional number will be introduced as service quality indicator of online Year 2014 E public services. If in ordering of countries index number is equal, 5 th criteria will be used for ordering.

11 a) Explanation of ratios

1 st number will represent availability of country to deliver public services online, infrastructure developpment, transparency, and commitment of country in willingness of delivering services online. This number is total number of all Government to citizen (G2C), Government to business (G2B). Note: If countries will face difficulties in defining all government services, choosing 20 most basic services as above mentioned European benchmark may be one of modifications.

2 nd number will represent how good is interoperability of government bodies, inter agency and inter ministry single window public service becomes possible only as result of good enterprise architecture (EA) based connected government, e-governance with good internal process flows.

3 rd number will represent readiness of population to use online services, their online literacy and availability of internet and online services.

4 th number will show how government geographically equal delivering online services.

Four numbers then combined into one index number by mathematical Average function.

12 Then countries will be indexed in decreasing order

In addition to 4 numbers 5 th number introduced as service quality indicator of available online public services. This number represents ratio of satisfactory services to total number of services, which can be assessed by public forums for each service or by team of experts. If in ordering of countries index number is equal this 5 th criteria will be used for ranking of country. Main philosophy here is, once service is available quality will become better and better gradually, so this criteria is not included in main indexing. Also including quality into index number will harm simplicity of this approach, so we keep 5 th number separately as additional optional number.

To have clear picture of country on UN's portal, not only index number, in beginning of each year country CIO will submit 8 numbers, to UN portal, from which portal will automatically calculate 4 ratio numbers and then country index. Together with 8 numbers CIOs also will submit commitment numbers for coming year. Commitment number and last year's actual numbers will be used next year for progress monitoring of that country by comparing 2 consequent year's numbers and the commitment numbers. Commitment numbers also can be used for country government officials to monitor CIO's performance. Putting here CIO or CIO like role responsible for this data submission is also UN encourage for having such position in a country. Further I will explain in detail 4 criteria's.

13 b) Explanation in Example

Criteria #1 Ratio of transaction level online public services, to total number of public services. Please note, that numbers in examples are not actual numbers. Example: Mongolian government has total 240 public services by end of year 2013, 50 services of 240 public services served online (on transaction level). So country CIO will provide following numbers to UN: Total number of public service 240, number of transaction level online services offered to citizen and business entities 50, commitment for year 2014 is 100. By beginning of 2015 when new entries will be done, commitment numbers and last year's numbers can be checked against actual numbers to see performance of country on egovernment development, and progress. In this case Mongolia will have 50/240=0.21 for first criteria for year 2013.

Criteria #2 Ratio of interagency inter ministry online public services to total number of online public services. Example: Because Mongolia is only on beginning stage of building Enterprise Architecture, only 3 ministries are interconnected and has online data exchange between them. So from 50 online public services only 5 single window online services is provided as result of multiple government agencies online interaction. Country CIO will provide following numbers to UN: Total number of online public services 50, number of interagency inter ministry online services 5, commitment for year 2014 is 20. Calculations will be 5/50=0.1

Criteria #3 Ratio of total number of citizen and business entities served online annually to total number of citizen and business entities served annually online and physically on those services. Numbers here will be counted as one for each service occurrence, which mean if 1 citizen received 3 services, this will be counted as 3, also total number of online and phycially served services is counted only for online available services. Example: Total number of online served citizen and business entities is 500 000, where total number of online and physically served is 2085 000 on those 50 public services (we take here total number of served citizen only for 50 services, which was available for online service). Country CIO will provide following numbers to UN: Total number of served citizen 2085 000, total number of online served citizen 500 000, commitment for year 2014 is 1500 000. Calculations will be 500 000/2085 000 = 0.24 Criteria #4 Simple index for geographical spread of online served citizen and business entities. Example and calculation method: Let's say 500 000 online service was made in 5 cities for 2085 000 citizen as shown in Table **??**. Here we took cities, in real life each administrative unit of country can be in calculation, and it is up to country to decide to which depth of administrative unit to go. To by each province or by each village etc. This table is represented in Fig. 1 and the proposed calculation method is as follows: First calculate total online service % of all cities, which is 30%+45%+23%+8.6%+20%=126.6%. Country CIO will provide following numbers to to UN. Total % of cities online service 126.6, total difference % of cities 83.6. Here the smaller difference is, the index value is bigger.

Portal will find index for geographical spread, as follows: 1-83.6% / 126.6% = 0.34 (this calculation can be simplified mathematically, but shown in detailed form to let reader follow philosophy of calculation)

14 Final Index

After calculations for 4 criteria's index for Mongolia will be: (0.21+0.1+0.24+0.34) / 4 = 0.2225 If one of countries index will be same 0.2225, 5 th service quality index will be taken into consideration to find Mongolia's e-government achievement order.

15 c) Usability of method

This model can be used to monitor countries egovernment achievement globally, or this model can be used also inside country for self monitoring. Even inside ministries, and enterprises, where online services needed to be measured.

When it used inside ministries and enterprises, on criteria 2 inter department and inter administrative units transactions will be taken in account. [1]

Figure 1: Simple

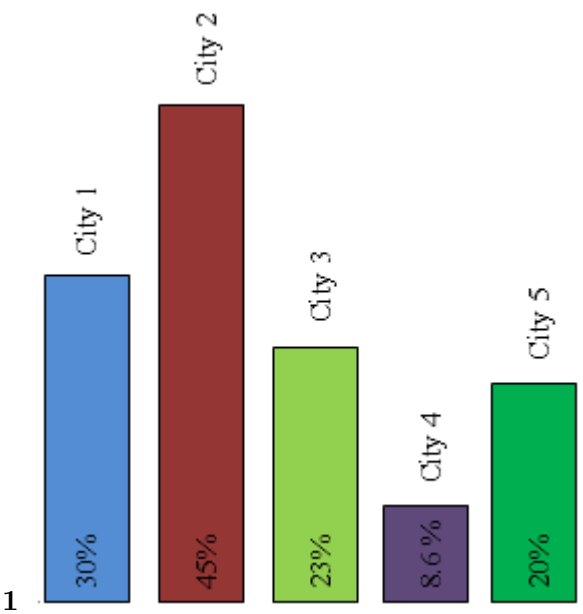

Figure 2: Figure 1 :

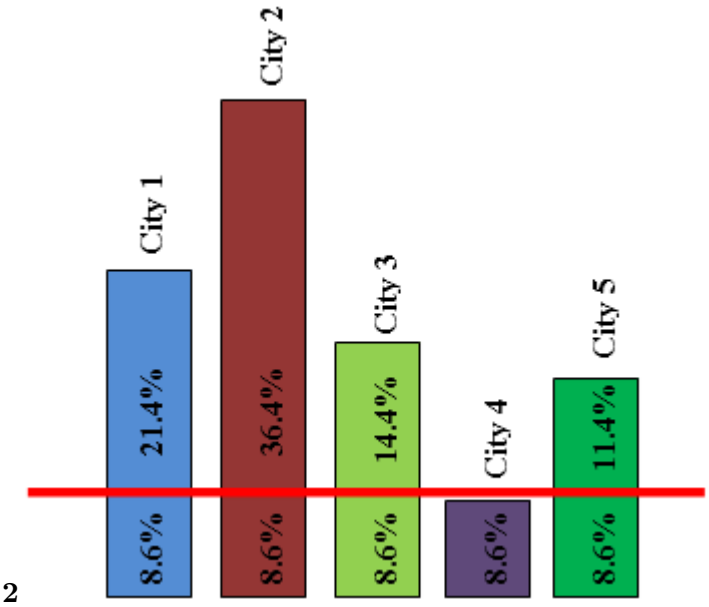

Figure 3: Figure 2 :

E-government core indicators of framework
? EG1 Proportion of persons employed in central government organizations routinely using computers
? EG2 Proportion of persons employed in central government organizations routinely using the Internet
? EG3 Proportion of central government organizations with a Local Area Network (LAN)
? EG4 Proportion of central government organizations with an intranet
? EG5 Proportion of central government organizations with Internet access, by type of access
? EG6 Proportion of central government organizations with a web presence
? EG7 Selected Internet-based services available to citizens, by level of sophistication of service

Figure 4:

1

	Population of City	Online Served	Online Served %
City 1	835,000	250,000	30%
City 2	220,000	100,000	45%
City 3	350,000	80,000	23%
City 4	580,000	50,000	8.60%
City 5	100,000	20,000	20%
Total	2,085,000	500,000	126.60%

Figure 5: Table 1 :

[()] , 2009.

[Digitizing Public Services in Europe, Putting ambition into action 9th Benchmark Measurement |] *Digitizing Public Services in Europe, Putting ambition into action 9th Benchmark Measurement |*,

[United Nations e-government development index (EGDI) ()] *United Nations e-government development index (EGDI)*, 2012.