E-readiness Assessment: A Standard to uplift Digital India Program

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ABSTRACT

All countries government e-readiness has become a vital policy tools that enhances the trust of citizen through applying the principles of good governance. Recently, e-readiness is becoming more accepted at the level of governments, organizations and citizens especially in the growing global open market. However, e-readiness has turned into a core feature of the international socio-economic development due to its ability to transform the society including the movement from traditional relations to more modern ways of thinking or dealing with health, education and production. This paper presents the different international organizations that have developed a variety of e-readiness models to participate in the global digital economy at the level of e-commerce, e-government and general ICT diffusion.

Keywords - E-readiness, ICT, e-governance

I. INTRODUCTION

The term e-Government came into existence with the advent of government websites in late 1990s. E-Governance or "electronic Governance" refers to the use of Information and Communication Technologies (ICTs) to provide citizens and organizations with more convenient access to the government's services and information. In the information age countries without high levels of resources cannot hope to accelerate development if they are able to develop knowledge, which, combined with adequate ICT-related infrastructure, can allow successful integration into knowledge-based economies. E-governance is the use of Information and Communication Technologies to facilitate the processes of Government and Public Administration for achieving Good Governance.[1]

II. WHAT IS E-READINESS?

E-readiness (electronic readiness) is a measure of the degree to which a country, nation or economy may be ready, willing or prepared to obtain benefits which arise from information and communication technologies (ICTs).1 This measure is often used to gauge how ready a country is to partake in electronic activities such as e-commerce and e-government. In most cases, e-readiness is represented in terms of indices, where countries are rated in various areas such as the number of telephone lines per 100 people, or the percentage of GDP spent on IT infrastructure. The results are tabulated and can then be used to make comparisons both between countries in the form of rankings, as well as longitudinal studies within countries.[2]

India`s e-readiness has been Assessed a number of times at the Global level.

1. The Economist Intelligence Unit e-readiness rankings and scores, 2009 ranks India below Egypt at 58th out of 70 . The Economist Intelligence Unit e-readiness rankings and scores, 2008 ranks India below Jordan at 54th out of 70 . Source:-EIU,2009

2. The January 2001 IDC ranking which found that the 55 countries of the countries navigating the Information Superhighway accounts for the 98% of all IT in 150 countries. It ranked India at 54 and Pakistan at 55 amongst the group of elite 55.

3. The May 2001 Mc-Connell ranking of E-Readiness Assessment indicates that substantial improvements are needed in area of Connectivity whereas the areas like E-Leadership, E-Business, Information security and Human Capital requires just improvements.

4. The 2015 Global Technology Index ranks India at 89th out of 143 just above Bhutan. It features the Networked Readiness Index which assesses the factor, policies & institution that enables a country to fully levage information & communication Technology (ICT) [3].

Each ranking/ assessment looks E-Readiness with different prospective. The focus in most cases had been

E-Economy. The government is therefore doing its own assessment. The Assessment was required for it is the first such initiative comparing the different States/ GOI Departments in terms of their preparedness for the networked world.

III. APPROACH AND METHODOLOGY FOR DIGITAL INDIA PROGRAMME

i. Ministries / Departments / States would fully leverage the Common and Support ICT Infrastructure established by GoI. DeitY would also evolve/ lay down standards and policy guidelines, provide technical and handholding support, undertake capacity building, R&D, etc.

ii. The existing/ ongoing e-Governance initiatives would be suitably revamped to align them with the principles of Digital India. Scope enhancement, Process Reengineering, use of integrated & interoperable systems and deployment of emerging technologies like cloud & mobile would be undertaken to enhance the delivery of Government services to citizens.

iii. States would be given flexibility to identify for inclusion additional state-specific projects, which are relevant for their socio-economic needs.

iv. e-Governance would be promoted through a centralised initiative to the extent necessary, to ensure citizen centric service orientation, interoperability of various e-Governance applications and optimal utilisation of ICT infrastructure/ resources, while adopting a decentralised implementation model.

v. Successes would be identified and their replication promoted proactively with the required productization and customisation wherever needed.

vi. Public Private Partnerships would be preferred wherever feasible to implement e-Governance projects with adequate management and strategic control.

vii. Adoption of Unique ID would be promoted to facilitate identification, authentication and delivery of benefits.

viii. Restructuring of NIC would be undertaken to strengthen the IT support to all government departments at Centre and State levels.

ix. The positions of Chief Information Officers (CIO) would be created in at least 10 key Ministries so that various e-Governance projects could be designed, developed and implemented faster. CIO positions will be at Additional Secretary/Joint Secretary level with over-riding powers on IT in the respective Ministry.[4]

IV. E-GOVERNANCE PROGRAMMES IN INDIA

1. Issuance of Unique Identification Numbers (UIN) to all the citizens: A Unique Identification Authority of India has been established recently with statutory powers for creating a database of all the citizens and for issuance of UIN to them. This would help, *inter alia*, (a) in avoiding duplication of identification and will help in weeding out illegal immigrants; (b) in issuing a multi-purpose national ID card, and (c) in targetting and monitoring of inclusion programmes of the government through issuance of smart cards to intended beneficiaries.

2. National e-Governance Programme (NeGP): Ambitious programme of Government of India with three pillars: state data centres (SDCs) as a central repository of state-level data; state-wide area networks (SWANs) for integration of different layers of state government and common services centres (CSCs) as one-stop front-end delivery points for a variety of citizen-centric services (Application forms, payment of utility bills etc.). Apart from this there are many Central and state mission mode programmes (MMPs) which are sought to be implemented in a time-bound, mission-mode manner.

3. National Knowledge Network/Grid (Garuda Project): Interlinking of educational and research institutes across India electronically for sharing of intellectual resources on one common platform.

4. Smart Card for Inclusion of Disadvantaged Sections: For e.g., Bhamashah Financial Inclusion Project of Government of Rajasthan which aims at opening no-frills bank account for 5 million below poverty line (BPL) families through biometric ID cards.

Source: Department of Information Technology and National Council of Applied Economic Research (2010).

V. CHALLENGES FOR A SUCCESSFUL IMPLEMENTATION OF E-GOVERNMENT IN DEVELOPING COUNTRIES

The adaptive challenges of e-Government go far beyond technology; they call for organisational structure and skills, new forms of leadership, transformation of public-private partnerships (Allen et al, 2001). Many developing countries suffer from the

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digital divide, and they are not able to deploy the appropriate infrastructure for e-Government deployment (World Bank, 2003). Ndou, (2004) represents seven main challenges for e-Government development and implementation in developing countries as follows:

1- ICT infrastructure
2- Policy issues
3- Human capital development
4- Change management
5- Strategy
6- Leadership role.
7- Partnership and collaboration   [5]

VI.   E-READINESS IMPORTANCE

As e-readiness is considered one the main faces of development for any country, it represents the transformation of society including the movement from traditional relations and methods to more modern ways of thinking or dealing with health,education and production. The key drivers of such transformation depend on scientific ways of thinking that enable decision makers from recognizing what they know and what do not, thus allowing them to identify the crucial variables that influence the outcomes while trying to make implications based on accessible data (Babcock, 2005).

In parallel to the emergence of ICT, new economies are more concerned on having a sustained non-inflationary growth with a high level of employment to advance the economic growth and productivity. Therefore, it appears that e-readiness is much concerned with the improvement of national economy, human capital and governance performances in developing countries.This leads to ask if there exist a causal relationship between both phenomena of ICT advancements and new economy (Grigorovici, 2004).[6]

VII.   FRAMEWORK OF ANALYSIS FOR E-READINESS

Framework of Analysis for E-Readiness Index of the States in India-2005 is based upon the premises that there are three important stakeholders to consider in development and use of ICT, viz., individuals, and governments. The degree of usage of ICT by (and hence the impact of ICT on) the three stakeholders is linked to their degrees of readiness (or capability) to and benefit from ICT. There is a general

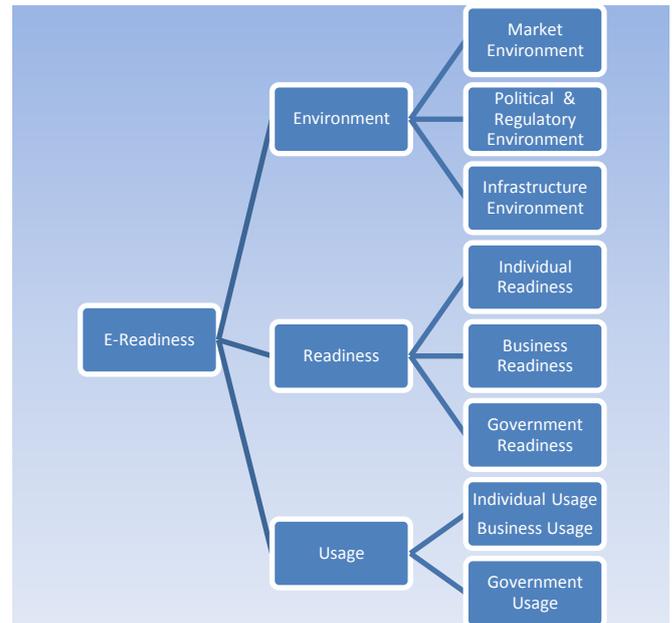macroeconomic and regulatory environment for ICT in which the stakeholders play out their respective roles

Fig 1: E-Readiness Index [1]

The e-Readiness Index developed by DIT/NCAER is composed of variables that fall into three broad categories: 'Environment', 'Readiness' and 'Usage' as shown in above figure.

ICT Development Index (IDI)

The **ICT Development Index** (**IDI**) is an index published by the United Nations International Telecommunication Union based on internationally agreed information and communication technologies (ICT) indicators. This makes it a valuable tool for benchmarking the most important indicators for measuring the information society. The IDI is a standard tool that governments, operators, development agencies, researchers and others can use to measure the digital divide and compare ICT performance within and across countries. The ICT Development Index is based on 11 ICT indicators, grouped in three clusters: access, use and skills.

- The access sub-index captures ICT readiness, and includes five infrastructure and access indicators.

  a. fixed-telephone subscriptions/100 inhabitants

b. mobile-cellular telephone subscriptions/100 inhabitants

   c. international Internet bandwidth (bits/s) per user

   d. percentage of households with a computer

   e. percentage of households with Internet access

- The use sub-index captures ICT intensity, and includes three ICT intensity and usage indicators.

   a. percentage of individuals using the Internet

   b. fixed (wired)-broadband subscriptions per 100 inhabitants

   c. Wireless broadband subscriptions per 100 inhabitants (includes satellite, terrestrial fixed, and active mobile with a minimum download of 256 kbit/s)

- The skills sub-index captures ICT capability or skills as indispensable input indicators. It includes three proxy indicators and is given less weight in the computation of the IDI compared with the other two sub-indices.

   a. adult literacy rate (% population 15 and older who can read and write simple statements with understanding and do simple arithmetic calculations)

   b. gross enrollment ratio secondary level (total enrollment in a specific level of education as a percentage of all eligible)

   c. gross enrollment ratio tertiary level (total enrollment in a specific level of education as a percentage of all eligible)

VIII. E-GOVERNMENT READINESS INDEX

The E-Government Readiness Index (EGDI) is a composite measure of the capacity and willingness of countries to use e-government for ICT-led development. The EGDI has been updated annually by the United Nations Public Administration Programme (UNPAP) since its creation in 2003. It covers all Member states of the UN. The EGDI looks at the most important dimensions of e-government: (i)scope and quality of online services, (ii) telecommunication connectivity, and (iii) human capacity. Government's efforts are ranked but countries size, infrastructure availability and ICT penetration, and the level of education and skill development are taken into account. Closely connected to the survey, the UNPAP also produces an **E-Participation Index**.[7]

IX. METHODOLOGY

The index rates the performance of national governments relative to one another by averaging three other indices: the **Online Service Index**, the **Telecommunication Index** and the **Human Capital Index**. The maximum possible value is one and the minimum is zero. Though the basic model has remained constant,the precise meaning of these values varies from one survey to the next as understanding of the potential of e-government changes and the underlying technology evolves. [8]

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

EGDI = (0.34 × online service index) + (0.33 × telecommunication index) + (0.33 × human capital index)

Online Service Index

Each country's national website and the websites of the ministries of education, labour, social services, health and finance were visited to assign values to survey responses.

Telecommunication Index

The telecommunication infrastructure index is a composite of the following five indicators:

- number of personal computers per 100 persons
- number of Internet users per 100 persons
- number of telephone lines per 100 persons
- number of mobile cellular subscriptions per 100 persons
- number of fixed broadband subscribers per 100 persons.

Human Capital Index

The human capital index is a composite of two indicators:

- adult literacy rate
- the combined primary, secondary, and tertiary gross enrollment ratio.

The indicators are aggregated in a complex manner so that relative comparisons of least performers matter.[9]

X. CONCLUSIONS & RECOMMENDATIONS

Despite of the enormous efforts of the public organizations in the India to apply e-Services and the promotion of e-Government were frequently on the political agenda, the information environment within these organisations is not adequate for applying the e-Government.

To fully realise the potential of ICT and mobile telephony, educational improvements to support not only this sector but also other related sectors (telecom, internet, data processing, etc.) will be required. The immediate impact can be seen in the expansion of technical colleges and universities as well as more attention to lower-level training institutes. While not helping directly with the more basic problems of illiteracy and inadequate primary and secondary education, such moves certainly do support not only software producers but also other technology-based sectors that have been receiving attention as sources of more general economic growth in India**.**

The incorporation of government programmes like NeGD which acts as one of the key catalysts and integrators for initiatives under Mission Mode Projects and support components under NeGP across the country. NeGD is also expected to proactively support Central Ministries/Departments/State Governments.

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