Evaluation of Sustainability in E-Governance Projects

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ABSTRACT

Governments are delivering various public services using Information and Communications Technologies (ICTs) from mid-90's. The phenomenon was accepted in many states and ICT applications were emerging in government services – the trend is known as electronic governance or eGovernance. eGovernance is an automation where manual processes transformed to electronic using ICTs. It was estimated over 6,000 eGovernance projects are being implemented in India and this study objective was to see how far these projects are sustaining (Sachdeva, 2012). The term sustainability was coined during millennium development goals to fulfill social, economic and environment challenges - social to deal with the society, economic to deal with the financial conditions of a State and the environment to geographic characteristics (MoEF, 2011 & Munasinghe, 2008). And, it is also imperative to discuss development because sustainability leads to prominence of the development that was coined after Second World War. To make progress sustainability and development are two footpaths that nurture progress in various sectors with no limitation to electronic governance (Janowski, 2011).

Key words: Electronic Governance, ICT for Development, Sustainability

Introduction

Computer Society of India (CSI) Nihilent eGovernance Awards (CNEA), a joint initiative with an objective was setup to encourage government best practices in the country from the year 2002. Over 300 initiatives were recognized as best practices since 12 years under various categories state, department, district and projects. A new category *sustainability award* was instituted from the year 2011 with an objective to evaluate whether the award winning *projects* were sustaining if so, what extent in the administration. The public administration objective was to serve citizen with responsive governance meeting aspirations of current and future needs. But, sometimes these succeed initially and fail subsequently (Kumar and Best, 2006). The conventional approach (prior to eGovernance) had several obstructions and a lot of money was minted by middle agents. But with the help of ICTs, governments are able to afford simple, moral, accountable, responsive and transparent (SMART) administration. eGovernance was of

various models - Government–to-Citizen (G2C) is citizen centric viz., accessing utility, birth, income and caste certificates; Government-to-Business (G2B) is business application such as online procurement, online bid processes; Government-to-Employee (G2E) is a employee centric - leave application, travel approval; Government-to-Government (G2G) is for internal purpose viz., file tracking and file movement by authorities; and Government-to-Student (G2S) focus on student scholarships, admissions, select of courses. Then, how to evaluate sustainability among these models because projects bandwidth was limited to a district or to a state or to a centre.

Objectives of the study

1. To measure sustainability of eGovernance projects
2. To evaluate six-factor model applied to measure sustainability of eGov projects
3. To address the challenges among various models in government projects

Methodology

The approach was to compare current eGovernance projects with previous five years for which six projects based on their secondary data in 2012 and the primary data of 2007 with appropriate indicators (Gupta and Bagga, 2007). A questionnaire consists of fifteen objectives and open-ended questions were designed to get the responses for the year 2012. A maximum score of 10 was assigned to each response, in total 150 marks. A cut off of 50% was made as benchmark to shortlist the projects for the sustainability award.

Table 1: List of Six Sustainable Projects

S.No.	Project	Model
1	e-Procurement, Gujarat	G2B
2	VAT information Systems, Gujarat	G2B
3	Petroleum and Explosives Safety Organization, Nagpur	G2B
4	Samadhan Ek Din Me, Madhya Pradesh	G2C (Rural)
5	Integrated Information System for Food Grains Management (IISFM), FCI, New Delhi	G2E/G2G
6	DC* Suite, Palakkad, Kerala	G2E/G2G

Source: Primary Data

The governments are implementing various ICT applications to benefit internal and external stakeholders. Some projects get success and others not because of local conditions, variations among several projects. Hence, it is necessary to evaluate sustainability of such projects so that other project implementers can follow the standards set for the study. One way to design a successful project was by increasing stakeholder participation that enhances efficiency of internal operations (Mohapatra). Other way is by looking at external customers requirements, based on that a robust framework can be fulfilled. Otherwise, consider taking a successful roll-

out project of a state and see the possibilities of replicating in another state. In this case, it is important that both states should have equal opportunity of e-readiness other than technology deployment alignment with the state road map. It is risk to claim that sustainability depends on a set of certain factors because some projects have hidden reasons such as hard push where government wants to have these projects at any costs for instance having electoral identity card for citizens to cast their votes during elections. Sometimes, projects that were more interest to top level management viz., aadhaar card for integrating to various delivery channels. These occasions produce strong willingness and inspire actors to take more responsibility (Joyashree, 2009). Some projects get success because of team work, project implementer's passion towards delivering electronic services and government authorities attitude towards customer oriented services etc. Considering these views, the above projects which are using ICTs to deliver services were evaluated based on the six factor model - leadership, accessibility, trust, project management, integration of services and policy framework (Agarwal and Vaidya, 2011).

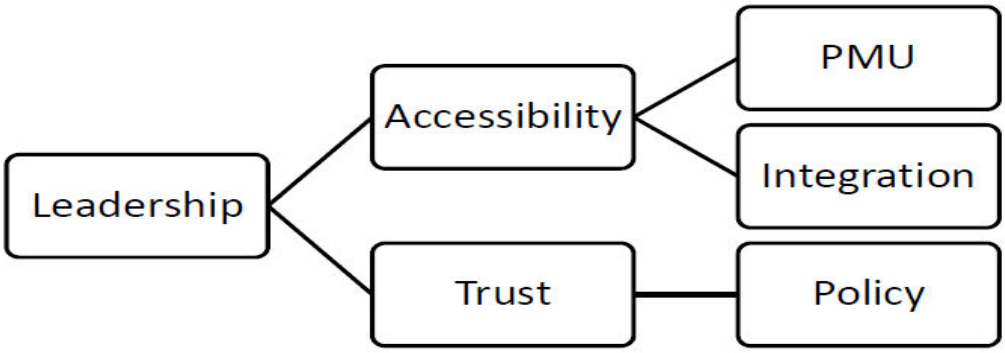


Figure 1: Performance indicators to measure sustainability in eGovernance projects

Leadership and administration of project owners

In many ICT initiatives, leadership role was crucial in case he transfer or moved out from his current position that affects on project continuity because these leaders are absorbing technology trends and implementing in administration process - known as eGov champions. Their passion towards motivating and organizing training programs for staff in the form of government process re-engineering will determine sustainability. Governments aim was to implement development programmes effectively but the impact of electronic users was never known. Hence, whether these projects accepted and used by the respective users was a question that can lead to success or semi-success mark. The government needs to analyze acceptability of the project whole heartedly by the citizens before making a big decision on conceptualization. But, the importance of planning project outlays and a project outcome are key areas that distances luck factor in a project (Khan, 2000).

Accessibility and usability of a service

The government responsibility was to provide access to its services in various delivery channels especially for ICT based services. The platform should provide significant value to the services compared to previous processes – some like to access using mobile, gadgets, by visiting government office or by visiting government websites. In case of online services *usability* of websites should ease the stakeholder requirement particularly, when phase-wise improvements, subsequent enhancement are attached to web portal. Then, to meet the vulnerable demands from users, internet connectivity is vital hence ICT infrastructure must provide quality of websites for faster delivery response time. Many a times, online users look forintegration of multiple services thus, replicating such single stop projects increase the number of transactions. An individual can save time and cost other than zero time delays that improves a project process substantially. The response time again depends on the advance versions are used in IT applications because websites are aimed to disseminate the information but the contents were mostlyin static form.

Trustworthiness and transparency of a service

The user perception was always based on the trust, credibility of a service for which data security and integrity are important areas. People always look for transparent services for which creation of awareness brings uptime in service delivery at par with the best industry practices. But, there was slight difference between government and industry applications, to balance that designing user-friendly applications for governments with an intuitive and error proof process make it more transparent. A call center to handle trouble shooting for external stakeholders shift from offline to online mode helps the system. Security features such as data encryption, cyber support can become more robust incorporating innovative use of digital certificates when the delivery of services were expedited with the help of computerization. The network equipment should get support with the upgradation of bandwidth. In the process, the utmost care can be taken to deploy latest firewalls, intrusion detection system and enterprise version of antivirus to do check and balances. For effective process, virus free network, servers to handle internal load balance, uninterrupted power supply should be provided to the existing servers.

Project Monitoring Unit (PMU)

A dedicated team to control both manual and electronic processes, monitor the project progress for which government departments have already introduced a project management unit under administrative controls with sufficient empowerment. These teams are attached to projects with a goal to monitor the life cycle of a project from top down approach. This represents change management at macro level comprises of initiating business process re-engineering whenever required. In case people willing to recover from the challenges, proper enforcement of various

domains of service status and appeal modules can introduce as and when needed. The team, with limited operational scope caters to the needs of external stakeholders by receiving feedback mechanism. A technical help desk through support-site mechanism can register complaints that can act as a nodal forum to get suggestions.

Financial sustainability and integration of services

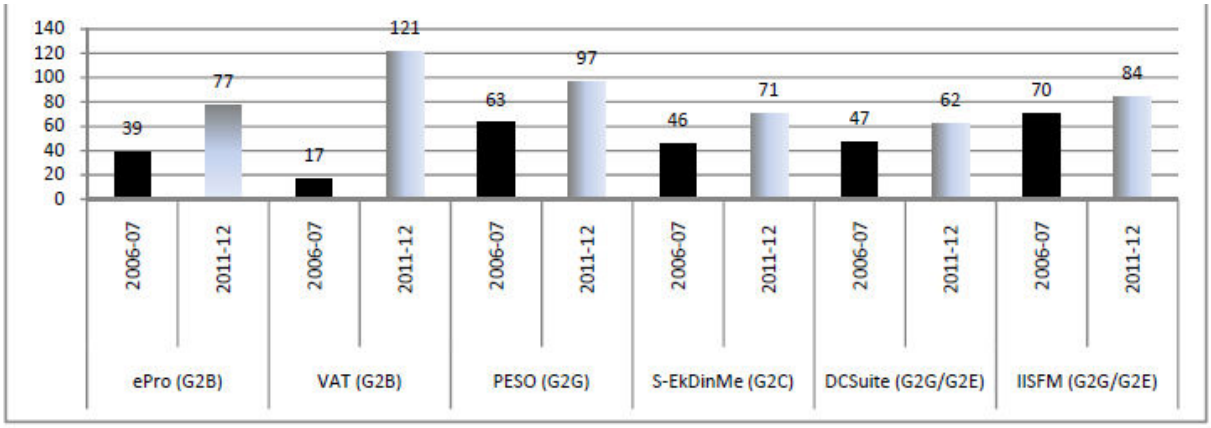
This is an area where the state of the art technology becomes handy to integrate a wide variety of services in compliance with respective state IT Act. To lessen financial burdens on government, allocation of minimal budget on regular training programs to government officials for sharing their best practices will leverage into huge savings. The departments can also save on human resources, stationary, printing and postage, time and cost in conduct of these workshops. And, programs not only benefit the individuals but also the departments to integrate their services on a single platform. Though, costs on the Internet and Intranet connectivity fallback links to achieve *zero* downtime on software front etc are needed, but the reducing costs of such services are required. Both licensed and un-licensed versions of software framework make application highly scalable in terms of functionality, access and maintenance. The Internet bandwidth upgradation to cope up with the ever increasing workload and accommodates critical requirements of the users. Management of Information Systems reports frequently impact the project deliverables.

Policy framework

The need for policy implementation may vary from urban to rural, project to project and different from one model to another thus, reaching to last man is important in eGovernance projects (Islam, 2008). For this reason, many states were designed their own IT policies and those are made in macro uniform level but not independently. These variations may not suitable to all the projects hence a maximum period of five years should fix to reflect on these projects. It is necessary to revisit these policies at least once in two years but many times the conventional policies are continuing (Chanakya, 2012). Hence, there is a need to revisit the existing policy framework especially when government changes. It is also necessary to involve stakeholder in policy designs for every three or five years to make betterments. Unless stakeholders are involved, there is no scope for sustaining best initiatives (Kumar, 2007). The policy design was that many of these were designed by economists and there is a gap between policy makers and implementers. It is challenging task to define standard indicators for different projects from different countries (OECD, 2008). This is an important phase where most of the projects will result into unproductiveness. When the policy framework turned into reality, it will open doors for real-time implementation challenges. The gap is mostly between design and delivery channels because most of the designs were made on top-down approach (Glemarec and Oliveira,

2012). When a citizen in need of some support while accessing e-Service, then the actual tussle starts hence the bottom-up approach may plan for consecutive design. This is the phase where the projects need inter-disciplinary mindsets and consultative approach instead of exclusive government or private systems so that policies can affect citizen lives thru government (Guan, 2012).

Results



Source: Primary Data

Graph 1: Scores of six projects sustainability status

Discussion

Among the various models G2B application seems to be getting high scores, it shows that business related services are performing better than other models. The reason is business applications are commercial and expect return of investments if they meet customer expectation. Secondly, G2E and G2G applications are got reasonably high scores because the target audience is little in numbers i.e., the focus is limited whereas citizen-centric applications are difficult to meet the common man expectations that need to strengthen. Evaluating sustainability of a project is like, a parent's evaluation on kid's aspirations - one never knows what is in store for the child. During 80's there was little intervention of private agencies but, to meet the expectations of increase in population, governments are involving private agencies since 90's. But the government conventional approach was continuing with private partners hence there was resistance from private partners to work with governments. Though, there are successful projects such as MGNREGA where private partners was playing a key role but not happy with their return on investment (Upadhyaya, 2012). Under partnership model, many private partners are not able to sustain because of much older agreements with governments. To handle these situations, private partners are playing an exception strategy for other models than the stand-alone projects (MOEF, 2002). Only a few national and international agencies are working on evaluating

sustainability standards and there is no standard framework available so far (DIT, 2002). It is important for government to implement such strategy at region or national scale before implementation (Keeble et al, 2003).

Conclusion

Apart from the six-factor model, the further research can aim to evaluate sustainability for various partnership models viz., build-own-operate (BOO), build-own-operate-transfer (BOOT), joint venture and design-build-finance-maintain-operate (DBFMO)**.** Public-Private-Partnership is a model where a private partner joins with government agencies in both funding and operating government services. It is also observed to do an exclusive evaluation of sustainability for individual models i.e., future scholars can come out with indicators that are compatible for citizen-centric, business applications and government applications. And, importantly there is substantial difference between evaluating rural and urban governed projects.

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