

Implementation of E-Government Systems in Developing Countries

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INTRODUCTION

The introduction of e-government systems in India started out in the late 60s and early 70s with an emphasis on computerising applications for defence services, for the economic planning department, for the national census, for elections and for tax collections and so forth. The government mainly did the spending and the development was entirely done by internal information technology departments. In the 80s the National Informatics Centre was established, whose main role was to implement and support large-scale computerisation projects in India. The 90s saw the emergence of a national IT initiative by the Government of India with corresponding plans in the states. External funding was sought from agencies such as the World Bank and external parties such as NGOs and private corporations were involved in the computerisation efforts. The focus also shifted to external e-government systems that could provide services to the public.

The 90s saw a spate of e-government initiatives in India, in various states, that addressed issues of land records management through digitisation, issue of government documents to public and collection of various dues via kiosk-based centres and the use of GIS-based services for assisting agriculture. Currently, in the year 2005, the government in India is poised to spend Rs 120 billion on e-government initiatives.

The results of such efforts are not very promising, though: most e-government systems that are implemented in developing countries around the world fail, with the failure rates at over 80%. Many reasons are attributed to such high failure rates, most of which have to do with a lack of direction and continued support by the responsible government department. Projects, apparently, are conceived of as a response to the push to "computerise" from the government without a clear understanding of the problem being addressed or the adequate design of such systems. Or, projects are conceived of to address certain immediate problems without analysing the deeper causes of the problem.

The argument put forth in this article is that e-government system implementations are hugely complex pro-

cesses that involve a complex set of factors; factors that have to be in place for the project to succeed. Government departments and officials are only one set of stakeholders who ensure the success of such projects, whereas a whole other set, those who use the system, are often left out of the analysis both during the design of the system and during its deployment. Further, e-government systems provide government services via an electronic intermediary where a manual provider is either removed or displaced altogether. The removal of officials, or their re-entry at different points of the service chain, is a point of contention and may lead to conflict between stakeholder groups. An analysis of this potential for conflict is essential for implementation success of e-government systems.

The rest of this article examines these issues in more detail. The next section discusses the background to this research. The following section examines the main findings related to the issues highlighted above. The last section concludes the discussion and outlines future work.

BACKGROUND

External e-government systems or government-to-citizen systems in developing countries are embedded in public spaces and deliver services that are demanded by a significant and diverse population. Their implementation success is based on neither their technical merits alone (the systems view) nor on the aspects of change management and user acceptance alone (the user view) (Markus, 1983). Such systems are embedded in a Web of relations or in a Web of interactions within a particular socio-economic context and their design and implementation requires an understanding of this context (Sein & Harindranath, 2004).

Prior research in e-government systems and ICT (information and communication technology) for development provides a basis for arguing the above theoretical approach. Information technology (IT) is best seen as an institutional actor (Avgerou, 2003) with its own myths and visions that have captured the imagination of its participant actors and the ideas and regulations that

guide the behaviour of the actors including those of resistance and subversion. In a developing country like India the needs, aspirations, and understanding of e-government is derived from a failure, in part, of governance mechanisms (Kaushik, 2004). The role and content of e-government systems arises from this context. Some examples will help to make concrete these theoretical issues.

Consider the implementation of a system for managing a rural development project (Madon, 1992). The main challenge to the implementation and acceptance of the system was the institutionalisation of the technology in the “ongoing context of formal and informal work and decision-making processes.” Counter posing the “rational” development model and planning process for which the system was designed against the “real” model that emerged showed the complex interaction of caste, community, and regional complexities along with corruption and gross inefficiencies.

The CARD system also shows the complex play of stakeholders goals that prevents a system’s intended benefits from being fully realised (Caseley, 2004). The system automated the process of land registration in the state of Andhra Pradesh in South India. The system was initiated by the state government to address the problems of widespread red tape and corruption in all aspects of land records access and mutation. One of the main problems was that of the presence of document writers outside registration offices who acted as the agents for corrupt officials. The CARD system was implemented in many districts and a few years after the launch, the study concluded that the system had not made things any easier for citizens as they still had to employ document writers and also pay bribes to access the system (on the other hand it had made things easier for the employees who could now locate files easily and also update them, while maintaining their corruption incomes).

Stakeholder theory enables the categorisation of those persons who are impacted by or impact e-government systems (De’, 2005). Stakeholders have a “salience” that is both determined by and determines their power, legitimacy and influence on the system (Scholl, 2004). The following section identifies stakeholders from the perspective of their participation in an e-government implementation and their influence on the system.

STAKEHOLDERS AND IMPLEMENTATION ISSUES

It is useful to view the stakeholders that impact the eventual success of a system as belonging to the demand-side, those who will consume the services of the system,

or to the supply-side, those who fund, design, implement, and maintain the system. Individuals, groups, and organisations belong to either stakeholder group according to their relationship to the system. These categories can overlap, that is, there could be individuals or groups who belong to both categories.

It will be observed that most e-government systems implementations in developing countries are driven by the supply-side, who design the services, the processes and the architecture of the system without consulting any demand-side stakeholders. Supply-side stakeholders dominate the implementation process and are mostly informed by their own ideological commitments or by the technological imperatives of their commercial partners. They have control over all the resources and deploy them according to their understanding of demand-side needs.

Demand-side stakeholders consume the services of the e-government system and, on occasion, provide the revenues that sustain the systems. There are instances where demand-side stakeholders such as citizen’s groups and civil society groups have demanded that they be included in the implementation process but this is rarely achieved. They decide the eventual success of the system through use or non-use and are directly impacted by the service efficiencies achieved.

Example of Bhoomi System

To understand the different stakeholder groups let us consider the Bhoomi system that was implemented in the state of Karnataka in South India, and was launched in all districts of the state in 2001 (De’ & Sen, 2004). It essentially allows farmers to receive a record of their land holdings at a reasonable price and also enter requests for mutations into the system. Land records are maintained electronically and details about crops are updated thrice a year. Farmers may obtain a Record of Rights, Tenancy and Crop (RTC) certificate from the system for a nominal price (Rs 15, about USD 0.33). This system replaced a manual system that was maintained by village accounts and was reportedly hard to access owing to corruption and red tape.

Neither demand-side nor supply-side stakeholders, for the Bhoomi system, form a contiguous group, there are further divisions of the stakeholders depending on their interaction with the system (see Table 1). For the demand side the primary users are the farmers who have records in the system and who use the system extensively. Till October 2004, over 22 million farmers had accessed the system since inception. Farmers use the certificates mostly to access loans from banks, along with using it as a surety in courts, for checking the details of their data, and for use in selling or mutation. With the advent of a faster process

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