Role of Process Alignment and End User Participation in Successful Implementation of E-Government Programs: Perspective of Different Stakeholders

Rajeev Dwivedi
IMT, Ghaziabad
rajeevdwivedi@gmail.com

Sameer Goel
IMT, Ghaziabad
goelias@yahoo.co.in

ABSTRACT

In recent years, a number of developing countries have launched e-government programs, and several development agencies and governments have identified e-government implementation as a key policy priority. Driven by the success of a few projects in improving delivery of services to citizens and businesses, an increasing number of governments are making ICT investments in the public sector. Alignment of departmental processes in government and active participation of employee of government departments as well of participation and cooperation of government department's users play vital role of success in such programs. Therefore, the major objective of the paper is to understand the role of process alignment and end user participation in success of e-government programs from the important stakeholders perspective; leaders, government departments as users, nodal IT agencies, and IT vendor organization. The research findings are based on survey carried out with 152 stakeholders in all categories through a questionnaire targeted in northern states in India.

Keywords

E-Government, Leadership, Internal IT Department, IT Service Provider, Employees, Process alignment, End User Participation

INTRODUCTION

Evolution of e-government has some degree of similarities with the evolution of e-commerce (Riley, 2005). Analogous to e-commerce, which allows businesses to transact with each other more efficiently (B2B) and brings customers closer to businesses (B2C), e-government aims to make the interaction between government and citizens (G2C), government and business enterprises (G2B), and inter-agency relationships (G2G) more friendly, convenient, transparent and inexpensive. The way organizations matured from initially having a web presence only, offering transaction services and business front-end and back-end integration (as well as several more sophisticated development levels); e-government also matures along a similar development path, which starts with broadcasting, then interaction, followed by transaction, and finally integration.

To serve the citizen and empower the citizen for the social development, E-government is the medium. The services can be information, communication, and transaction or automated processes. This can be done by using combination of hardware, software, networking, social networking. These technologies have the capability to transform the relationship with citizens, businesses and every stakeholder of the society. These technologies could serve a variety of different ends: better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, or more efficient government management (Basu, 2004). While there is no doubt about the importance of e-government, successful implementation of e-government program is largely depend on different environmental and social factors. Based on literature review, we got to know multiple challenges in successful implementation of e-government programs. Aligning the government processes with automation using computerization and involvement of government department users are more important. This has been repeatedly emerged from literature. Weerakkodya et al. (2012) in their

paper comparing implementation strategies of e-government programs between developed and transition economies has highlighted that one of the major reasons for success of e-government programs in United Kingdom was because of combining business process engineering and service oriented architecture to improve existing processes. Suri (2005) in his paper on "Strategic Insights into an E-government project" identifies process reengineering as one of key challenges for e-government programs. Woodroof and Burg (2003) showed that there is a significant relationship between a user's predisposition and satisfaction level. Similarly, Aladwani (2002) showed that users' attitudes towards computers have a direct influence on end-user satisfaction. Therefore, process alignment becomes critical in successful implementation of e-government programs. Success of the process alignment depends on the active involvement of government departments and cooperation of employees in order to streamline the process. The stakeholders (actors) oriented approach need to be understood for making a significant impact on these parameters. Key stakeholders of any programs are; E-government program leadership, IT nodal agencies, IT vendors, ends users (in terms of government department who uses programs). Therefore, objective is to understand their perceptions on both issues are important.

LITERATURE REVIEW

The literature review for this research was done at two levels. Firstly we looked at the available literature to understand the criticality of process alignment and end users participation as shared by different authors. Secondly we identified the different stakeholders for e-government initiatives and their role in success of e-government initiatives.

The adoption of ICT enabled governance for delivery of public services is incomplete without fundamental changes in the government processes and structures. If the aim is transformation of delivery of public services and to ensure good governance, they cannot be achieved without re-engineering of government processes and structures.

Singh and Sahu (2008) while analyzing internet, telephones and call centers for delivering better quality e-government to all citizens state that In order to take full advantage of e-government and to promote seamless operations between all government departments, massive changes in laws and processes are required. The earlier processes were defined for paper based system, where each government department was treated individually. In the virtual world, it is possible to have a single virtual government office despite their different physical locations. Therefore laws and procedures of the governments need to be redrafted so that they are compatible with each other and the data or information submitted to one department can be used by other departments.

Chauhan et al (2008) describe a policy framework is the backbone of public governance and a major contributor to its quality. Such a framework is particularly required in the areas where public governance seeks technology support, as is the case for Electronic Governance (e-government). This paper explains the need to put in place a comprehensive set of policies, and presents a model for policy interventions supporting e-government development. The starting point for evolving a policy intervention framework is the formulation of directives and guidelines for three main constituents of e-Government: People, Processes and Technology. Especially for Processes, policy directives and guidelines aim at laying down a roadmap for BPR evolution through models that address the issues related to back office; legacy systems; electronic and paper record management; archival of records and its mapping onto existing regulations; audit framework in an electronic setup; responsibility across agencies particularly in light of cross-agency initiatives, inter-agency budgeting, and multichannel delivery of services. Torres et al (2006) states that e-government includes e-government plus key issues of governance such as online engagement of stakeholders in the process of shaping, debating, and implementing public policies. Zambrano (2008) is of the view that as stakeholders, citizens play a substantially different role. The essential aspect here is the role that they can play in the design and implementation of public policies and development of e-government programs.

An important step in designing an e-Government site is ensuring that the customers who will use the site are actually capable of using the technology employed (Jaeger & Thompson, 2003). The user interface employed should be designed by technical experts with vast and intuitive knowledge of systems operation. The users will include ageing and disadvantaged portions of the population with limited computer skills who may be intimidated by overly complex systems operation requirements.

Confidence in the system must also be taken into account if financial transactions are among the services offered. Financial transactions must be easy, secure, and also feel secure, if customers are to feel comfortable using the site for these actions (Carter & Bélanger, 2005; Ke & Wei, 2004). The implementation of E-Government initiatives presents a significant opportunity or threat relative to the disadvantaged in society. A lack of access to E-Government can increase the digital divide between the advantaged and disadvantaged (Armstrong, 2000; Jaeger & Thompson, 2003; Jorgensen & Cable, 2002). It is clear that e-government does not happen just because a government buys more computers and puts up a website. While online service delivery can be more efficient and less costly than other channels, cost savings and services improvements are not automatic. A lot of work has happened to look into the reasons for the success of certain programs vis-à-vis failure of other programs (Streib and Willough, 2005). However e-government field, like most young fields, lacks a strong body of

well-developed theory. One strategy for coping with theoretical immaturity is to import and adapt theories from other, more mature fields. Stakeholder theory advocates addressing role of all stakeholders in a firm, as opposed to concentration on the interests of senior managers and stockholders (Flak and Rose, 2005). Similarly success of implementation of e-government programs should be looked at role of all the stakeholders involved in the implementation of the e-government programs.

For any successful implementation of e-government program, the role of key stakeholders is very important. Based on the literature review we have identified four key stakeholders who are involved in success of an e-government program. These stakeholders are: (1) The government leadership which includes political leadership and concerned bureaucracy (2) Employees of the department which undertakes the e-government initiative (3) Internal IT department, this role is supported by National Informatics department (4) IT service provider, most of e-government programs are outsourced to private organizations or executed in house consultants. The role of each of these stakeholders can be seen as follows:

STAKEHOLDERS FOR E-GOVERNMENT PROGRAMS

Based on the literature survey, we are able to identify four key stakeholders, who have considerable role in success of e-government initiatives. These stakeholders include leaders, departmental employees/users, IT nodal agencies, IT vendor companies**.** (Goel et al., 2012)

Leadership for e-government programs is provided by the political and bureaucratic head of the department. Like all other fields leadership is an important aspect of e-government. The commitment of top leadership is important for e-government. The leadership provides the role of reformers who will help the e-government initiatives sail through. The leadership may as well come from the private sector wherein the private partners may drive the whole initiative for the government. Despite the importance of technological and skill infrastructures, it is the politics of e-government initiatives that probably hold the key. E-government programs have made slow progress in many countries because they do not serve the self-interests of the major stakeholders, particular senior public officials. The views of senior public officials are therefore absolutely critical; hence the emphasis laid on the issues of leadership and commitment. Public officials must be convinced that e-government is in the long interest of the department and government.

Knowledgeable leadership plays a critical role in the development of e-government applications. At least one committed risk taker must provide the initial spark. Process champions are considered essential to successful strategic planning for an innovation (Bryson and Roering, 1988) and total quality management (West et al, 1993). It is unclear what level of knowledge is needed to provide leadership for e-government, but credible leadership is essential. A technician is not necessarily needed at the top, but the leadership does need a good sense of the costs and benefits of different alternatives. Many local governments may lack the vigorous leadership needed to be e-government pioneers. Leaders are certainly key stakeholders in successful implementation of e-government initiatives.

The second key stakeholder, employees, is on the forefront of the change which e-government programs bring in the working and services of the government department. Implementation of e-government program means that they will have to learn new things. Employees may resist certain initiatives as they are working in their comfort zones for years and rarely appreciate a change in job profile (Nunn, 2001). The computerized system will lead to further transparency and lack of discretion by individual officials who work on these systems. Therefore some employees fear a loss of power and resist change.

The majority of employees in Government departments already are reported to feel overburdened with work and therefore prone to resist change for fear their workloads may increase. The available studies also support that computerization has impact in the requirement of skills for the same job and increase in productivity, hence making existing employees redundant (Baddeley, 2008; Dawson, Mcloughlin, 1986).With introduction of new systems there will be more redundancy and therefore employees fear a job loss and hence there is resistance to any changes in the existing processes (Tapsell and Law, 1998). The internal employees try to avoid any active involvement in any such initiative. Lot of focus should be given to ensure that internal employees see it as a growth opportunity rather than a threat and actively participate in the initiative.

The quality and commitment of local government staff will play a major role in the success of any e-government initiative. Staff can be viewed as the actual implementers of any new e-government policies or programs. It comes out that there are three things that could stop implementers from active participation. Two that are relevant to this discussion are dispositional problems, when implementers do not want to do what they are supposed to; and capability problems, when implementers are not able to do what they are supposed to do (Meter et al, 1975). Both these issues need to be addressed to get their involvement.

The third key stakeholder is the consultants of the IT service providers. IT specialists are in high demand in e-government projects as are project management specialists who take the lead. An e-government program will take approximately one year to gain approvals. It will make another year for process study and RFP preparation. An additional six

months will go in bid process management. In addition, it is likely to take three months for signing the contract. Approximately two to three years also will be required for implementation and another year in training of staff and deployment across locations. The benefits of the system occur after years and cannot be quantified. These long implementation cycles means that project moves to high risk category. It is required that project performance, cost and schedule clearly base lined and an experienced project manager is put who can control these for a project spanning multiple years (Powner, 2006). As a stakeholder for e-government programs, it is important for them to understand the government processes and any need of its alignment before e-government initiatives. Government officials are used to hierarchical functions where consultants are experienced in flat structures. Delays are common to government departments whereas in the private sector, each delay costs money. Even with these differences in style of working for government sector and IT consultants, it is important that these consultants involve the departmental employees in the implementation especially key phrases such as business process reengineering, requirement gathering and user acceptance testing etc.

The other key stakeholder is the IT nodal agencies. Most of state governments have a dedicated IT department, which overlooks the implementation of the IT programs. They are very important stakeholder because this department acts as interface across multiple e-government initiatives being taken across the state. IT department is part of the team which reviews the IT strategy plan for each department and then approves the long term road map for the each department and overall state. Government is a distributed enterprise with similar knowledge requirements spread across the state, districts, and other local governments. In this scenario role of this group is very important to ensure that proper knowledge management tools are used and experience gained in one program is shared across other programs so that same mistakes don't happen again.

The National Informatics Centre (NIC) is a premier organization of the Department of Information Technology, Government of India, with a business mandate of steering information and communication technology (ICT) applications in all layers (central as well as provincial) of the Indian government setup. The NIC is a distributed organization encompassing the headquarters at the national capital (New Delhi), State units in all the provincial units of the Indian republic, and district centers in more than 500 districts of the country. The technical workforce, which constitutes more than 90 percent of the organization's total strength, is distributed across the country to address the ICT requirements of the departments at the central and state governmental levels. There is a separate NIC unit to look after each department at all levels of the government. Thus, the organizational setup of the NIC closely mirrors the Indian government's administrative setup and they have a key role in ensuring that best practices from successful e-government programs are available to the new initiatives and leveraged for a these new initiatives.

RESEARCH METHODOLOGY

A review of literature has been carried out for identification of the difference stakeholders in successful implementation of e-government programs. For these stakeholders an empirical research is conducted to analyze their perception on role of process alignment and end user involvement in achieving the objectives of the e-government implementation. The research under consideration was primarily carried out using the scientific method of opinion survey. Opinion Survey as a scientific method of enquiry is best suited for a research where original or primary data is collected for describing a population too large to observe directly (Babbie, 2004). The opinion survey in this research aims understanding the difference in perception of different stakeholders (bureaucracy, the departmental employees, IT consultants and employees from IT nodal agencies) about these critical factors which influence the success of e-government programs. The criterion of selection of respondents for the opinion survey was based on their association and experience in implementation of e-government programs. A wide range of e-government programs were selected from the states in the scope. Before analyzing the results, questionnaire were validated through various tests of validation such as content validation, face validation, criterion related validity and construct validity. Reliability of the data was tested by calculating cornbach's alpha value for these variables. After confirming the reliability and validity of the data, it was analyzed for the perception of different stakeholders.

DATA COLLECTION

The questionnaire has been administered with a brief write up on the study objectives, purpose of the questionnaire and directions regarding filling up the questionnaire. Questionnaire has been administered to four key stakeholders of e-government programs. The questionnaire was made available to the respondents in softcopy as well as hard copy based on their preference. It was optional for respondents to furnish personal details such name, email etc.

The basis on which sample size has been selected is from e-government programs from the states of Punjab, Haryana, Himachal Pradesh and union territory of Chandigarh. Most of these states have around 40 state departments. Based

on the study of the state website and discussion with the IT departments of the state, the departments which have undertaken e-government programs were selected. Based on these inputs it was found that around 30% department have taken up e-government programs beyond mere website presence. The total number of such department across the three target state governments and the union territory were 54. In total 30, state and union territory departments were approached for responses from leadership and user stakeholder. This constituted 55% of the total departments which have undertaken the e-government programs.

For response from State IT agencies, it was made sure that we reached out to State IT departments of all the three states and union territory of Chandigarh. National Informatics Centre (NIC) offices in all the three states and Chandigarh (U.T.) and nodal state agencies of two states (Hartron and Punjab Infotech Ltd.) were also reached out with the questionnaire.

For responses from IT vendors, we reached out to state IT departments and took the list of all the empanelled companies. Across the three states and Chandigarh UT, there were 40 such empanelled companies, which were awarded contracts at some stage of the empanelment. We reached out to consultants from 21 different IT companies from this list.

From these selected organizations, we reached their heads with a formal request for response on the questionnaire. The unit head was explained about the background of the research. Commitment to complete confidentiality was given and a formal letter from the guide was shared with each of the unit head. These heads were requested to get us responses from multiple individuals within their organizations. The selection criteria included that the respondent should be closely involved in implementation of an e-government programs for at least three years. Each head was requested for a limited number of responses from their department. For leaders and users nearly 4-6 respondents per organization were requested and for state agencies and IT vendor companies, we requested 8-10 responded from each organization.

In all we targeted 125 respondents in each stakeholder category i.e. 125 leaders, 125 users, 125 employees from IT agencies and 125 consultants from IT vendors. A total of 500 questionnaires were targeted through these channels.

Type of Stakeholder	Departments Targeted	Departments Covered	% of Departments Covered	Respondents Targeted	Actual Respondents	% of Respondents
Leaders	54	30	55.55%	125	37	29.60%
Users	54	30	55.55%	125	35	28.00%
Nodal IT agencies	10	10	100%	125	36	28.80%
IT Vendor Organizations	40	21	52.2%	125	44	35.20%

Table 1: Stakeholder Wise Breakup of Respondents and Number of Department Covered Across States

In all 152 respondents from all these four stakeholders responded to the questionnaire, based on which the empirical analysis has been undertaken.

ANALYSIS AND DISCUSSION

The data gathered from the research has been analyzed at five different levels. First of we analyze the 152 responses as a single group and try to understand the overall perspective on the criticality of process alignment and end user participation in the success of e-government programs. Subsequent to this we analyze the data for each stakeholder and come up with a comparison of the perception of different stakeholders on the criticality of these variables.

Based on the Figure 1 it is evident that across the stakeholders there is clear agreement about the criticality of the process alignment. More than 61% respondents either strongly agree or agree to the fact that alignment of the processes before implementation is very critical. There is only a small percentage of 7.3% who either strongly disagree or disagree that process alignment is important for implementation of e-government. There is significant size of respondent, more than 30%, who have taken a neutral view on this.
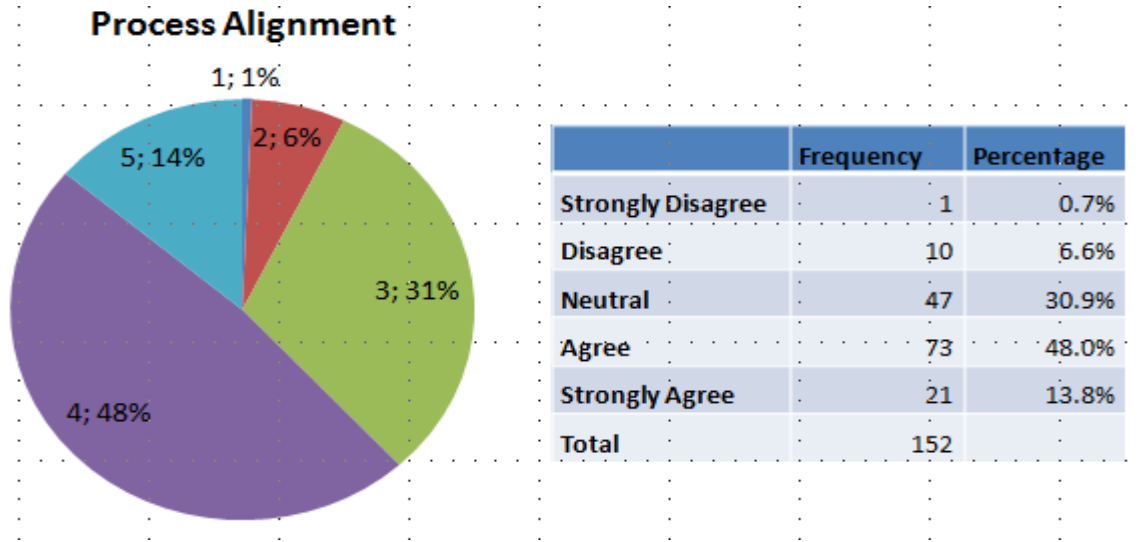
Process Alignment

	Frequency	Percentage
Strongly Disagree	1	0.7%
Disagree	10	6.6%
Neutral	47	30.9%
Agree	73	48.0%
Strongly Agree	21	13.8%
Total	152	

Figure 1: Perception of All the Respondents on the Criticality of Process Alignment for Successful Implementation of E-Government Programs

The analysis of perception about criticality of end user participation in implementation of e-government programs indicates that there is even higher agreement that end user participation is key to success of e-government program. Around 63% respondents either strongly agree or agree to the fact that end users should actively participate in the implementation of e-government program. There are no respondent who strongly disagree to this. There are 9.2% respondents, who disagree to active participation of end users.
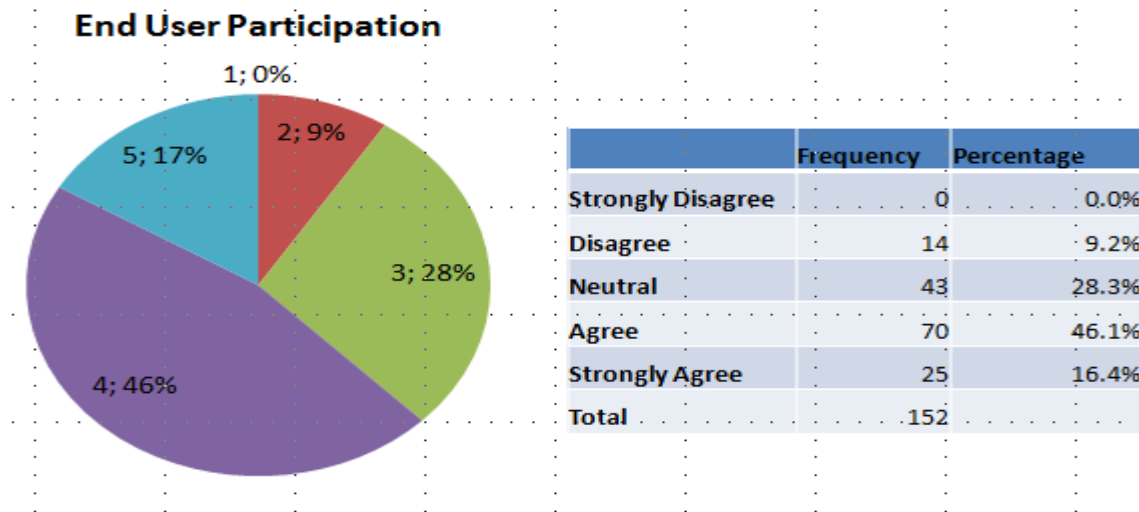
End User Participation

	Frequency	Percentage
Strongly Disagree	0	0.0%
Disagree	14	9.2%
Neutral	43	28.3%
Agree	70	46.1%
Strongly Agree	25	16.4%
Total	152	

Figure 2: Perception of All the Respondents on the Criticality of End User Participation for Successful Implementation of E-Government Programs

In Table 2, we have shown the comparison on the perception of different stakeholder on the criticality of process alignment before implementation of e-government programs. Based on data it is clear that while all the stakeholders consider process alignment to be important for success of e-government programs, leaders and IT vendors have given more positive inputs on this compared to departmental users and IT nodal agencies. The reason for lesser agreement for departmental users may come from their reluctance to change the existing processes and they may feel more comfortable if the existing processes are automated as it is

	Overall	Leaders	Departmental Users	IT Nodal Agencies	IT Service Companies
Strongly Disagree	0.7%	0.0%	2.9%	0.0%	0.0%
Disagree	6.6%	5.4%	5.7%	5.6%	9.1%
Neutral	30.9%	24.3%	31.4%	41.7%	27.3%
Agree	48.0%	54.1%	37.1%	44.4%	54.5%
Strongly Agree	13.8%	16.2%	22.9%	8.3%	9.1%

Table 2: Comparison of Perception of Different Stakeholders about the Criticality of Process Alignment for Success of E-Government Programs

Table 3 shows the comparison among the four stakeholders on end user participation. In this case Departmental users are stronger proponent of the involvement of end users in the implementation. Departmental employees are the end users of the systems implemented through e-government initiatives and they would like to be getting involved, so that they can play a significant role in the overall outcome of the initiative. IT vendors have also advocated involvement of end user in implementation of e-government programs

	Overall	Leaders	Departmental Users	IT Nodal Agencies	IT Service Companies
Strongly Disagree	0.0%	0.0%	0.0%	0.0%	0.0%
Disagree	9.2%	8.1%	8.6%	19.4%	2.3%
Neutral	28.3%	27.0%	20.0%	36.1%	29.5%
Agree	46.1%	37.8%	48.6%	33.3%	61.4%
Strongly Agree	16.4%	27.0%	22.9%	11.1%	6.8%

Table 3: Comparison of Perception of Different Stakeholders about the Criticality of End User Participation for Success of E-Government Programs

CONCLUSION

Based on review of the perception of key stakeholders in success of e-government program it is clear that both process alignment and end user participation are very critical and play a significant role in successful implementation of e-government programs. Leaders and consultants of IT vendor companies have better understanding of the significance of process alignment. Concerns and fears of departmental employees need to be addressed so that they understand its importance and give their critical inputs during business process reengineering exercise. It has been clearly understood by all the stakeholders that end user participation is important for the success of e-government programs; however it is not comprehended to same extent by all the stakeholders. Departmental employees want a more active role for themselves in implementation of e-government programs. Leaders and IT nodal agencies also understand the need to involving end users; however a more uniform agreement on this will help in achieving the objectives of e-government initiatives.

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