



## Approaches to Model Inter-organisational Processes in E-Government Services

### KEYWORDS

e - Government Services, Process & Workflow, citizens, ICT Coordination.

**Mr. Ritesh P. Lakhtaria**

"Shivkrupa", Block No.101, K. P. Shah's Wadi,  
Rameshwarnagar, Jamnagar – 361008.

**Dr. Dhaval R. Kathiriya**

IT Director, University Bhavan, Anand Agriculture  
University, Anand - 3888110

### ABSTRACT

*e-governance is the movement of governments online to deliver their services and program. In non eGovernment scenario, responsibility of monitoring these interorganizational workflows lies with the citizen. In eGovernment scenario, citizens can not undertake this monitoring and the absence of any monitoring results in the failure of eGovernment service. In this paper we have presented a number of approaches to model these eGovernment inter-organizational processes using a simple eGovernment service of Passport Application.*

### 1. Introduction

In recent past, a lot many eGovernment initiatives have been undertaken by numerous government agencies and organizations. In spite of worldwide diffusion of eGovernment initiatives, getting the claimed benefits of eGovernment services has not been easy for various technological as well as organizational reasons. In a recent survey, Heeks found out that more than a third of e-government projects in developing/transitional countries are total failures; a further half are partial failure; and roughly one-seventh are successes. Lack of process orientated view of government work has been attributed to this problem. Another reason for this high rate of failures is poor coordination between government organizations. Government work is generally performed

through vertical and rigid 'silos' of department (or agencies), who get on with their jobs without any collaboration between them.

For delivering citizen services, generally two or more government organizations need to come together. These inter-organisational processes in Government services are characterized by no clear cut accountability / ownership and poor process performance / measurement. This results in the citizen taking up the ownership for getting the desired service and running around the organizations for getting the things done. The responsibility of monitoring these workflows is of the citizens. When we model these government services for eGovernment applications without reengineering or any process change, the citizen is not able to monitor the process and in the absence of any monitoring, effective service delivery is non existent. This situation is very typical of government sector. In the private sector, shared benefits, common goal of profit making forces the participants to coordinate and cooperate to make these inter organizational process functional and successful. In government sector hierarchical processes, autonomy of different participants, no common shared standard of performance, no shared benefits, absence of contracts etc. causes these inter organizational process to fail resulting in the failure of eGovernment applications. In this paper we have addressed this aspect of eGovernment services provided by multiple agencies under a common front-end and presented a number of alternatives to address this specific aspect of eGovernment services. We have used a simple example of an eGovernment application to describe these various approaches.

For example, passport issue service in India. The Passport Department promises to deliver the passport in 45 days of application. They need to get the details of the applicant verified by the local Police Station, which comes under the Ministry of Home and is not in direct control of Passport Department. Now when the Passport Department sends the details of the applicants to the Police Department, there is no

coordination, control and measurement of this process. The Passport Department waits for the receipt of Police verification endlessly and there is nothing being done to monitor this process by Passport Department. The applicant has to get the details of the status of the application from the Passport Department, and the details of the Police verification from the Police Department. He has to run from one department to the other to get the passport. Now if this Passport Application process is taken to virtual world, it would become difficult to provide timely service

to the citizen. This problem is not specific to India only. World over government agencies cooperate to provide various citizen services and coordination is a major issue there also. Here we are providing a framework to overcome this coordination issue in eGovernment applications.

### 2. Inter-organizational Processes Modelling

Lack of coordination and cooperation has been found as one of the structural barrier in implementing Government to Government projects in Brazil . There was no evidence of inter-organisational linkages in the study of online project at Legal Aid in Western Australia but all the respondents in the study indicated at the requirement of inter-organisational linkages. The existing approaches to model inter organizational processes lay emphasis on the technology, data flow, control flow etc. but not on the coordination, control and monitoring aspects of these processes.

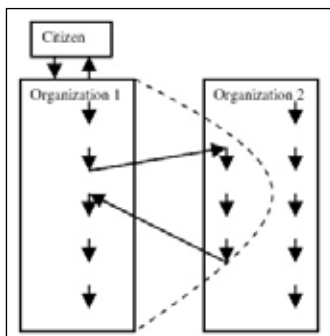
There are numerous approaches to model inter or ganizational workflows in private firms. One of the alternatives is to use a service oriented model for cross organizational workflows. Here a workflow is modelled as a graph with activities as nodes, edges which represent the control and data flow and assigned quality of service (QoS) parameters e.g. the maximum duration and the maximum cost allowed. A service specifies which part of the workflow it covers and is associated with a service provider either internal or external. The execution is optimized by selecting services depending on their contribution to quality criteria of the workflow. This approach allows different organizations to interact via well defined interfaces. Maria explains the eGov initiative of European Commission, which is a centralized approach to eGovernment Services. Here also, appropriate interfaces for coordination between different government agencies are envisaged to be designed. Cross flow project gives another approach to design inter-organizational workflows based on contracts and dynamic service outsourcing. For eGovernment applications contracts might be difficult to be signed between multiple government agencies. In, Aversano et al. have given a framework based on RDF (Resource Description Framework) to model processes, services and service composition. Mecella and Batini give an iterative design process for designing cooperative projects. The design activity out-

put consists of the 1) public design schema – the external process made available to other administrations; and 2) private design schema – the internal process a single administration uses to define the objects and components invisible from the outside.

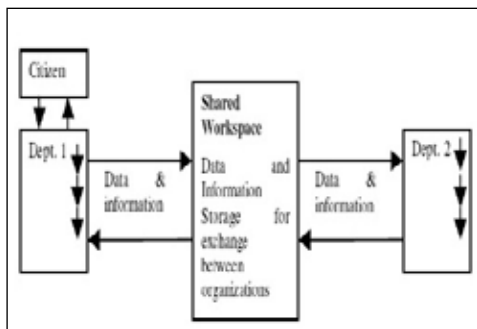
**3. E - Government Services Processes Modelling**

In private firms, business interest of the participating firms ensures that all the partners cooperate and coordinate to make these workflows successful. In Government department these common interests and goals are often lacking and this makes the task of porting workflow models for private firms to government organizations difficult and a new approach is required for modelling of these workflows.

There are three ways in which two collaborating government organizations can design their inter organizational processes. In the first case, one organization assumes super ordinate role and extends its internal processes to incorporate the external processes laying in the other organization as shown in Figure 1. This is possible where one organization is directly under the control of other



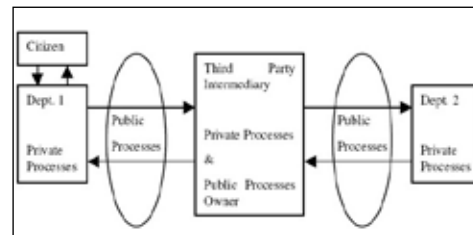
**Figure 1.** One organization extending its workflow to another organization. For two independent and autonomous government organizations, it would be difficult to enter into this kind of arrangement. Second approach is to have a common shared workspace. Each organization uses this space to share and exchange information. This is simply taking the existing processes to online world. Here the problem is lack of monitoring and control. One organization puts some information on the shared workspace, other organization does not download this information for a week, or downloads but does not process it further. There is no mechanism here to monitor and coordinate the performance here. In the third case, the public private process model, two or more organizations interact through a third party intermediary which coordinates, manages and controls the inter-organizational processes. Figure 3 gives the public private process model. Here each organization has its own private internal processes along with shared and common public processes owned by the third party intermediary. Each organization is



**Figure 2.** Shared workspace for inter organizational workflows responsible for its private processes and third party intermediary is the owner and responsible for the public processes. Each organization has to ensure a minimum level of service

guarantee for the public processes. Figure 5 in next section describes the passport application process using public and private processes.

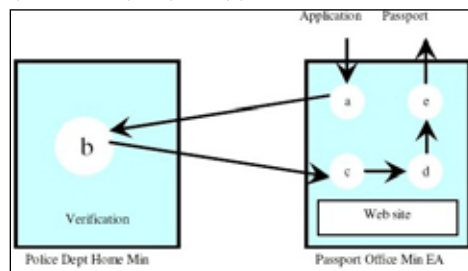
Passport office and Police Department need to cooperate with each other to issue a passport. Here, Police Department need not know how Passport Office processes work and vice versa. Police Department would need simply a list of people to be verified, and submit the status of verification to Passport Office back. Similarly, Passport Office would like to pass on the list of applicants to be verified to Police Department and receive the status back. Using public private process approach, internal private processes of both the organisations are isolated from each other and both the organizations communicate with each other through the public processes only. Now these public processes are owned, monitored and controlled by a third party intermediary agency which is responsible and legally empowered to coordinate and monitor public processes for various eGovernment services. This provides for a timely,



**Figure 3.** Public private process model accurate and citizen friendly eGovernment service. Ludwig has given four principles according to which relationships between autonomous, peer organizations are established:  
 Goal orientation: common, agreed upon result of the process  
 Privacy: internal processes not visible to others  
 Flexibility: change processes without affecting the goal  
 Independence: from the internal changes of processes of others  
 Public Private Process model complies with these principles and provides a framework using which an eGovernment service can be modelled to provide for better coordination and monitoring.

**4. Example of Passport Application**

The process for passport applications is as follows:



**Figure 4.** Activities involved in Passport Application

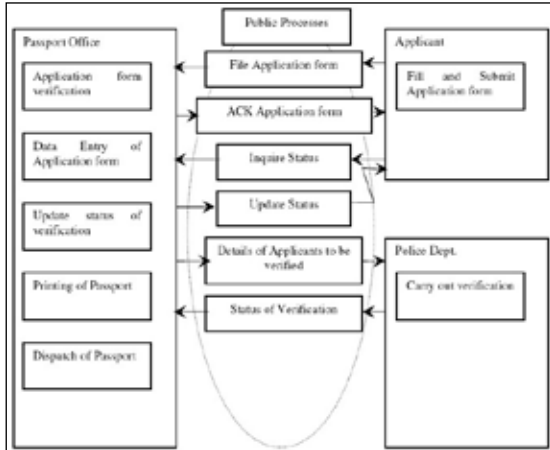
**Activities**

- a. Submission of filled application form by applicants
- b. Applicants scrutiny and data entry
- c. Police verification of application facts
- d. Granting issue of passport
- e. Preparation of passport
- f. Passport dispatch

Issues in Passport Application Processing are

- Lack of process ownership and accountability
- Activity ownership – departmental focus
- Activity interfacing – automated versus manual systems
- Lack of integration between application processing system and web-based information system,

which are typical of any eGovernment service. Using public private processes, these issues can be handled. Figure 2 gives a public private process model for this service. Passport office processes like data entry of applicant's details, printing of passport and despatch of passport etc. are isolated from the Police Department. Only the details of applicants to be verified are passed on to the Police Department through a public process. Similarly Police Department's internal processes like verification of



**Figure 5.** Public Private Process Modelling of Passport Application.

applicants is isolated from the Passport Office and only the status of verification is communicated back to Passport Of-

fice through a public process. Citizen is provided with a single interface to apply and check for the status of his passport application. This model very clearly gives information regarding the process ownership at any stage. Private processes are owned by the respective organizations. Public processes are owned by a third party

independent intermediary. This intermediary can be human or a software agent.

These public processes might be implemented using a wide range of available technical solutions like extranets, EDI, internet etc. Opting for one of the internet enable technologies will eliminate the problem of lack of integration between application processing system and web based information system for passport office.

## 5. Conclusion

Success in eGovernment services is still elusive. While porting public services to electronic channels, a new approach to design of these is required. This electronic channel brings avenues and problems of their own. We have presented a framework to address on of such problem of managing coordination in eGovernment services with the help of Passport application process in India. The challenges being faced are not unique to India only, all over world, government organizations function more or less on the same lines. To facilitate coordination between two independent and autonomous government organizations, public private process with an independent third party intermediary provides a feasible solution. Further research in the role, sanctity and authority of these intermediaries is suggested to find practical applications of the concept.

## REFERENCE

1. Aversano, Lerina and Canfora, Gerardo. Introducing eServices in Business Process Models. SEKE'02, 481- 488. | 2. Cross Flow: Cross-Organizational Workflow Support in Virtual Enterprises. ESPRIT Project 28635 by European Commission. (www.crossflow.org) | 3. eGov Project Website (www.egov-project.org) | 4. Heeks, Richard. eGovernment for development: Success and failure rates of eGovernment in developing/transitional countries: Overview. IDPM University of Manchester, UK (2003). | <http://www.egov4dev.org/sfoverview.htm> | 5. Joia, Luiz Antonio. Developing Government to Government enterprises in Brazil: a heuristic model drawn from multiple case studies. International Journal of Information Management 24, (2004) 147-166. | 6. Saxena, K.B.C. Implementing eGovernance: issues and challenges. Management Development Institute, | Gurgaon, 2003. |