

# Impact of Project Attributes on Project Management Strategies - A Context of G2C e-Government in India

*Full paper*

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## Abstract

The extant literature on management of e-Government projects discusses success factors in detail. However, it is observed that the contingency aspects of management of these projects have not been given sufficient attention. The classification of e-Government projects based on specific project attributes is an area where the current understanding is rather inadequate. The relationship between certain e-Government project attributes and different management strategies has also not been explored adequately. In this paper, we examine the impact of two important project attributes on certain important aspects of project management. This paper employs cases of e-Government projects to demonstrate the framework so developed. A classification of such projects based on the mandatory/optional nature of concerned service and the mandatory/optional nature of intermediaries - two important project attributes - has been proposed. We have also demonstrated how this classification can act as a handle for deciding on certain important aspects of project management.

## Keywords

E-Government, Project Management, Case study, G2C projects.

## Introduction

Implementation of any e-Government project is a challenging exercise, more so in a developing country like India, due to the limited availability of resources (funds, infrastructure and skilled manpower). The challenges in e-Governance project implementation is also a result of the complexity of the project, scale of the project, the resistance of stakeholders to change and heterogeneity of the target population. The learning from this context can be extended to the developed economies in terms of reducing project cost and managing complexity arising out of an increase in scale and interconnectedness of systems.

The success of large scale e-Government project requires management of project implementation and project operation in an effective manner. One of the crucial aspects of implementation and operation is the management of partners. Any increase in number of partners/collaborators increases the complexity of the project. Effective management of these partnerships is an important aspect of project implementation. Similarly, effective management of change associated with the project is also a critical aspect of project implementation.

Extant literature on management of e-Government projects discusses different success factors for e-Government projects (Gichoya 2005; Gil-García and Theresa 2005). It also discusses different management strategies for success (Aladwani 2001; Munns and Bjeirmi 1996). However, the explicit relationship between certain project attributes and the requirement of management strategies arising out of the attributes has not been addressed adequately.

In this paper, we examine the impact of two important project attributes, viz., mandatory/optional nature of service and mandatory/optional nature of role of intermediaries, on four important aspects of e-Government project management, viz, the project implementation approach, diffusion efforts, role of project champion and need for legal changes. Using four cases of government to citizens (G2C) e-Government projects in India, viz, Land record digitization - Bhoomi, Issue of Passport, Income Tax digitization project and a grievance registration system called Jhansi citizens' service centre (locally known as Jhansi Jan Suvidha Kendra or just JJSK), we demonstrate the framework so developed.

## **Literature Review**

E-Government has evolved as an academic discipline in the last two decades (Heeks and Bailur 2007). Within the domain of e-Government, success and failure of projects have always been an important area of academic exploration. The success and failure of a project and the perceived variables are often evaluated based on achievement of predefined goals such as schedule, budget and financial benefits (Sudhakar 2012; Prabhakar 2008). Success can also be defined in terms of more qualitative and overlapping factors such as access to end-users (Poon and Wagner 2001), continuous use by people and benefits to stakeholders (Sudhakar 2012). Diffusion among stakeholders and their satisfaction from the projects would also determine the success of the project (Poon and Wagner 2001). In addition to the perception of the evaluator, the definition of success will also depend upon the nature of the projects. A software project may be considered as successful only when it qualifies along the dimensions of system quality, information quality and service quality (DeLone and McLean 2003) in addition to the dimensions like user satisfaction and impact on individuals and the organization (Li 1997). The impact of an e-Government project can be negligible, positive (Heeks and Molla 2008, Kumar and Best 2006) or negative (De 2007). The negative impact may also be perceived because of non-fulfillment of privacy concerns arising out of e-Government projects (Blanchette and Johnson 2002; Layne and Lee 2001).

Perceived nature of success variables and numerous potential parameters make the task of measuring success a complex one. It is possible that the project is a success for some stakeholders and a failure for others at the same time. It is also possible that a project is perceived as a success one day and a failure at some other time. Thus, success is person and time dependent (De Wit 1988). The act of measurement of success is an ongoing learning process. It can potentially indicate what went wrong and why.

Numerous factors contributing to the success of a project have been identified in the literature. Perceived attributes of the new system such as relative advantage, compatibility, complexity, trialability and observability influence the rate of adoption (Rogers 2003) and thus the success of a project. In an information technology project, the accuracy of output, reliability of output and timeliness of output (Bailey and Pearson 1983) would influence the relative advantage of the project. Project success is also influenced by the leadership, top management support and availability of resources (Li 1997; Sudhakar 2012). Specific variables such as customer involvement, vendor partnership, user involvement, co-operation, integration of system and removing of legacy systems have been identified by researchers. A list of such variables has been compiled by Sudhakar (2012). Sudhakar has further classified these factors as communication related, technical, organizational, and environmental, product, team and project management related factors. The success factors include availability of resources (people, money, technology and infrastructure), trust of stakeholders, support of senior politicians and bureaucrats, integration of systems, citizen centricity, digital divide and clear digital identity of individuals. The literature also discusses different management strategies for success such as effective management of partners (public and private), effective reengineering, effective change management (Aladwani 2001), effective project management (Munns and Bjeirmi 1996) and alignment of IT strategy and effective governance (Luftman and Brier 1999). However, as regards the explicit relationship between certain project attributes and the requirement of management strategies arising out of the attributes, the literature is largely silent.

In this study, we seek to enhance the existing state of understanding of the phenomenon of the success of government to citizen (G2C) e-Government project implementation. Specifically, we examine the impact of two important project attributes, viz., mandatory/optional nature of service and mandatory/optional nature of the role of intermediaries, on certain important aspects of project management strategies. The four aspects of project management that we discuss are project implementation approach, diffusion efforts, the role of project champion and the need for legal changes. Further, we also attempt to illustrate

the impact of these attributes on the relative importance of these four dimensions of project management strategies.

## **Methodology**

The present work broadly addresses management of e-Government projects with a specific focus on the impact of certain e-Government project attributes on required management strategies for successful implementation.

India has a limited number of e-Government projects that are both implemented across the diverse Indian population and have a scale comparable to what a typical e-government project is expected to handle. India is yet to reach a high degree of maturity in e-Government (UNPAN 2014). This limitation leaves us with a relatively smaller number of projects to study. On the other hand, each project is rich with potential insights due to its complexity, with a number of factors contributing to its short term success and long term sustainability. In this study, we propose a framework for enhancing project implementation success. Understanding of project implementation strategies for project success requires an in-depth approach. The above reasons make case study research a suitable methodology for this study.

Case study research design focuses on contemporary events and is more appropriate for the “how” and “why” type of research questions. It does not require control over behavioural events. One of the important applications of case study research is "to explain the presumed causal links in real-life interventions that are too complex for the survey or experimental strategies" (Yin 2009). In this study, we explore the role of project attributes, mandatory/optional nature of service and mandatory/optional nature of role of intermediaries, on four different project management strategies, viz, the project implementation approach, diffusion efforts, project champion and legal changes.

This study involves detailed literature survey of research articles and published cases (in academic and practitioners' outlets), followed by a theory building exercise that involves identification of causal relationships between the two project attributes mentioned above and the four project management aspects. This exercise uses observations from available secondary data about four e-Government projects from India and the extant literature. The development of the theory has also been supported by primary data obtained from field visits and interviews with government officials. Eisenhardt and Graebner (2007) argue that theory building from case studies is one of the best alternatives for qualitative evidence based deductive research. In this research, the extant literature has played an important role in the identification of constructs. The field data has facilitated the theory development in terms of describing the relationship between e-Government project attributes and required management strategies. Eisenhardt (1989) observes that theory building process is often iterative in nature and relies on "past literature, empirical observation or experience as well as on the insights of the theorist. In this paper, the iterative process has not been demonstrated due to the paucity of space but the chain of evidence has been presented in the form of a table.

The theoretical framework developed in this research is a result of “analytical generalization” from four selected cases (Yin 2009). Wherever we have experienced a gap in the available secondary data, we have conducted fieldwork to bridge that gap. The fieldwork included visiting project sites; interviewing users, developers, project managers, consultants and bureaucrats; collecting data from secondary project documents, and in some cases experiencing the service delivery as a citizen. The data from multiple sources complement each other and facilitate data triangulation. Triangulation strengthens the reliability of the research.

Access to the project has been an important case selection criterion in this study. We have looked at only those projects that have been rolled out to all its target audience. The life of the project has also been an important criterion, and we have selected only those cases that are at least five years old. Finally, the four cases that we have selected are ‘Land record digitization - Bhoomi’, ‘Issue of Passport’, ‘Income Tax digitization project’ and a grievance registration system called ‘JJSK’. A cross-case synthesis has been used as an analytical technique to ensure internal validity of the research. Replication of the theory across the four cases has been performed to strengthen the external validity of the findings.

## **E-Government Project Attributes**

In this paper, we discuss the nature of the impact of two important e-Government project attributes on required management strategies. Project attributes such as the nature of service, the role of intermediaries, the interconnectedness of the system, the nature of funding, nature of involvement of the private partner in the operation and implementation, etc. can play different roles in project implementation.

The voluntary versus the mandatory nature of service has been a popular classification used by scholars (Lee and Lee 2014, Radl and Chen 2005). An example of theory focusing on voluntary adoption is Unified Theory of Acceptance and Use of Technology (UTAUT) which was developed by integrating eight prominent models and their extensions (Venkatesh et. al., 2003). Challenges in the adoption of mandatory systems can be considered as a project implementation exercise or a concern about compliance. The impact of mandatory systems has been studied across disciplines (Chen et. al. 2015, Hofstede and Yelder 2009, Reinders et. al. 2015).

In e-Government literature, the role of intermediary has been widely studied (Janssen and Klievink 2008, Sein and Furuholt 2012, Sorrentino and Niehaves 2010). In this research, we consider any human interface in the service delivery process as an intermediary. In a non-digitized service delivery mechanism, an intermediary is almost always part of the system. The digitization of government service offers a unique opportunity to make the role of intermediaries optional in service delivery. The alternative of the optional intermediary is similar to a popular marketing concept of “co-creation” (Prahalad and Ramaswamy 2004) which involves shifting some of the value creating efforts to the end-users. In most projects, this project attribute changes post-digitization, making it part of the change management challenge in project implementation. Thus, the role of intermediaries is an important project attribute to investigate.

For the above reasons, we have considered these two as important project attributes to investigate. The two project attributes are the nature of service and role of intermediaries.

### ***Nature of Service***

The first project characteristic considered is the nature of service being delivered. Typically services can be ‘mandatory’ or ‘voluntary’ in nature. For mandatory services, citizens (or the target population) are forced by law to use the service. One such example is filings of income tax returns. In India, filing income tax return is a formal declaration of income and taxes paid in a given financial year. Even if an individual has paid all the required taxes, s/he is expected to file an income tax return as a part of legal compliance. On the other hand, optional services are those, use of which is left to the choice of the end users. The choice is influenced by factors such as the need for system, degree of trust, relative advantage and accessibility and ease of use. Services such as grievance redressal are optional in nature. Citizens may choose to avail such services based on their perception of benefits and cost of availing such services.

### ***Role of Intermediaries***

The second important project characteristic relates to the role of intermediaries. Specifically, it refers to the mandatory or optional nature of intermediaries in the delivery of services. When a citizen is availing an e-Government service, if there are people involved at the interface of the service delivery process then such individuals should be considered to be performing the role of intermediaries in that process. For example, when an application for land mutation is submitted to the operator at the citizen service centre, the actual mutation process is performed by the Block Land and Land Reforms Officer (BLLRO). BLLRO is an officer at the block level responsible for maintaining land records. Block is the lowest level administrative jurisdiction in India with respect to land record management. The highest level of the administrative unit is at the national level followed by state, district, taluka and block. BLLRO authorizes a mutation on behalf of the state government. All the government services that can be availed online are examples of an optional intermediary.

## Project Classification Matrix

	Service is mandatory	Service is optional
Intermediary is mandatory	<p><b>Obligatory</b></p> <p>Land Mutation</p> <p>Registration of vehicle</p> <p>Registration of immovable property</p>	<p><b>Optional Service</b></p> <p>Issue of Passport</p> <p>Issue of Voter ID Card</p> <p>Issue of Aadhar</p>
Intermediary is optional	<p><b>Optional Intermediary</b></p> <p>Filing Income Tax Return</p> <p>Payment of taxes</p> <p>Payment of utility bills</p>	<p><b>Discretionary</b></p> <p>Grievance redressal like JJSK</p> <p>USSD based mKisan services</p> <p>PAN application for people with non-taxable income</p>

**Figure 1. Project Classification Matrix - The categories of e-Governance projects based on project attributes<sup>i</sup>**

A G2C e-Government project can be classified into four categories represented by one of the quadrant of the project classification matrix. We call them the obligatory, optional intermediary, optional service and discretionary quadrants.

Land mutation is an example of the first category. The basic service is mandatory in nature. Once a person owns a piece of land by virtue of a purchase, gift or inheritance, s/he must apply for land mutation in the land record office. S/he can claim legal ownership of the land only after the mutation process is complete. For mutation s/he has to request the village accountant or submit an application in the land record office along with the requisite documents. The second category of projects is where the service, as well as the role of an intermediary, is optional. A grievance redressal service like the Jhansi citizens' convenience centre (locally known as Jhansi Jan Suvidha Kendra or JJSK in short) is one such example. JJSK is a project in Jhansi district of Uttar Pradesh state. This project acts as a one stop grievance resolution solution. If a person is dissatisfied with any of the government service, s/he may or may not register a formal complaint based on his perceived cost and benefits. The third category consists of projects where the actual service is mandatory, but the involvement of intermediary is optional. Filing of income tax return is one such example. The last category is of projects having optional services with the mandatory role of intermediaries. The issue of passport in India is one such project.

## Project Management Strategies

Project management strategies include identifying roles, creating suitable organizational structures, implementing necessary changes in existing processes, devising and implementing appropriate policies

and deploying a coherent strategy (Aladwani 2001). In this study, we have identified certain management strategies that are impacted by the project attributes discussed in the previous section. These management strategies involve ensuring diffusion of a project among the target audience, identifying and assigning the role of project champion to a suitable person, making suitable legal changes complementing digitization and adopting a suitable approach towards project implementation. We can consider them as handles for consciously changing the effectiveness and/or efficiency of a project. In effect, they are decisions to be made, and processes to be performed to ensure project success.

The approach towards project implementation refers to the speed of implementation of the concerned digital services, both in terms of scale and scope of the project. Here, the scale is the number of end users, and the scope is the number of services offered by the project (Sahay and Walsham 2006). Project implementation can follow a big bang approach to rapid digitization (Denes and Andersson 2004, Narang and Narang 2012) or an incremental approach involving a gradual change (Chen 2012). It would also influence the suitability of different types of people for leadership roles, measures for evaluating the impact of the project and other strategies involved in the project implementation process.

Management strategies involved in diffusion of a project typically entail promotion of the project among stakeholders (especially the end users) by making them aware of the project, highlighting the benefits of the project and teaching them how to use the service through the new platform (Rogers 2003).

Management strategies associated with the role of the project champion involve defining the responsibilities associated with that role, identifying a suitable person for that role and facilitating him in project implementation (Aladwani 2001).

The implementation of information technology based projects in organizations involves some changes in policies with regards to usage. A similar change in the context of e-Governance often results in changes in legislations. Hence, we term them as legal changes. These legal changes are often targeted at removing legal bottlenecks for digitization, redesigning existing process and at times forcing the digital alternative on the end-users (Sharma and Gupta 2003). A change in legislation may force the use of digital alternative mandatory for a specific government service, irrespective of the mandatory/voluntary nature of the actual service. Thus, legal change is not an antecedent to mandatory services rather a mechanism to force digitization even for optional service. However, there is a potential negative impact of such changes.

## Impact of Project Attributes on Project Management Strategies

The impact of project attributes on project management strategies has been identified based on case data. In this section, we first present the snapshot of case data in the form of a table and then highlight the conclusions drawn from the same. In the end, we have summarized the findings in the form of a table. These two tables together demonstrate the link between the research questions, data, and the results.

<b>Project Categories /Project Management Strategies</b>	<b>Obligatory</b>	<b>Optional Intermediary</b>	<b>Optional Service</b>	<b>Discretionary</b>
Project implementation approach	Project - Land Records Digitization  States like Karnataka and Gujarat followed a big bang approach and was more successful in implementation	Project - Online Filing of Income Tax Return  A three step process was adopted for implementing digitization.  Step 1 - Commercial	Project - Issue of Passport  The passport issuance is a complex process involving multiple departments.  Step 1 - Government went in for partial	Project - JJSK  Direct access to service was made available from day 1. Not many intermediaries were involved due to direct access of the service.

	<p>as compared to the states like West Bengal which followed a slow an incremental approach.</p> <p>In Karnataka and Gujarat, individual phases were implemented in a fire fighting mode followed by relatively longer stabilization periods.</p> <p>Observation - A rapid firefighting mode has helped in creation of a sense of urgency and has helped in change management.</p>	<p>organizations</p> <p>Step 2 - Individuals belonging to the high income group</p> <p>Step 3 - All the taxpayers</p> <p>Step 4 - Other services like verification of tax deducted at source, online application for issue and correction of permanent account number (PAN) data etc. were added in rapid succession.</p> <p>Observation - Considering the size of the project, the speed of implementation was rapid.</p>	<p>digitization (implementation started in 2006)</p> <p>Step 2 - Plan to re-engineer the non digital part of the process, including the police verification phase.</p> <p>Even today there is still some scope for manual application through government intermediary.</p> <p>There is also a scope for personally seeking appointments if the same is not possible online.</p>	<p>The various departments were slowly included as a part of this unified grievance redressal system.</p> <p>Observation - Due to optional nature of the basic service, slow pace of digitization facilitates change management.</p>
Diffusion efforts	<p>Project - Land Records Digitization</p> <p>Not many promotional activities.</p> <p>Word of mouth most popular source of information</p>	<p>Project - Online Filing of Income Tax Return</p> <p>Some advertisements on TV, newspaper</p> <p>Communication through e-mail and messages on mobiles</p> <p>Customized and more value adding offerings by the optional intermediary</p>	<p>Project - Issue of Passport</p> <p>Some advertisements on TV, newspaper</p> <p>Communication through e-mail and messages on mobiles</p>	<p>Project - JJSK</p> <p>Advertisements on local radio, newspapers, town-hall meetings, hoarding, posters, meetings in schools and colleges</p> <p>The project owner actively involved in the promotional activity</p>

Project champion	<p>Project - Land Records Digitization</p> <p>Required to reach out to a large user base.</p> <p>Large number of intermediaries. The type and number of intermediaries increased slowly with time.</p> <p>The Project Champion of this project is popular among all stakeholders.</p>	<p>Project - Online Filing of Income Tax Return</p> <p>Few intermediaries.</p> <p>Large promotional efforts by the department.</p> <p>Active involvement of project managers promotes direct use of service.</p> <p>Successive implementation cycles incorporated simplification of online process and incorporation of user feedback.</p>	<p>Project - Issue of Passport</p> <p>Project implementation and managing vendor was the most challenging task.</p> <p>Project missed several deadlines due to lack of vendor management from the government department.</p> <p>Small number of intermediaries.</p>	<p>Project - JJSK</p> <p>Project champion involved in lot of promotional activity.</p> <p>Small number of intermediaries.</p> <p>The Project Champion of this project is popular among all stakeholders.</p>
Legal changes	<p>Project - Land Records Digitization</p> <p>Legal change to facilitate integration of intermediaries.</p> <p>Legal change to make the process more transparent and equitable</p>	<p>Project - Online Filing of Income Tax Return</p> <p>Intermediate legal changes to force digitization on users.</p> <p>Legal changes to support simplification of process</p>	<p>Project - Issue of Passport</p> <p>A legal change would help simplification of the process; after 9 years of implementation such a change is still under consideration.</p>	<p>Project - JJSK</p> <p>No legal change was required.</p>

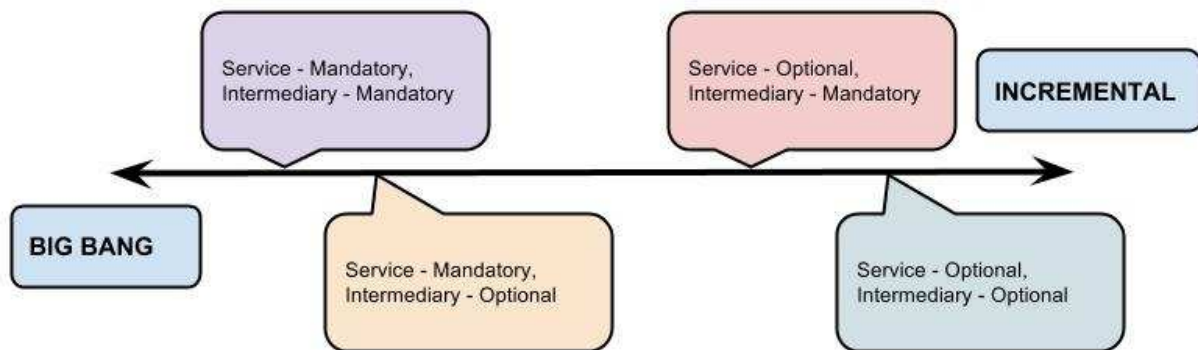
**Table 1. Case Data Establishing the Impact of Project Attributes on Project Management Strategies**

***Project Implementation Approach***

The pace of project implementation approach can vary between two extremes, viz., the big bang approach and a slow paced incremental approach. Both a pure big bang and an extremely slow-paced



implementation approach would be rare. The implementation approach for a project would be closer to the big bang approach if there are relatively few incremental steps in implementing full-scale digitization.



**Figure 2. Project Implementation Approach for Different Types of E-Government Projects**

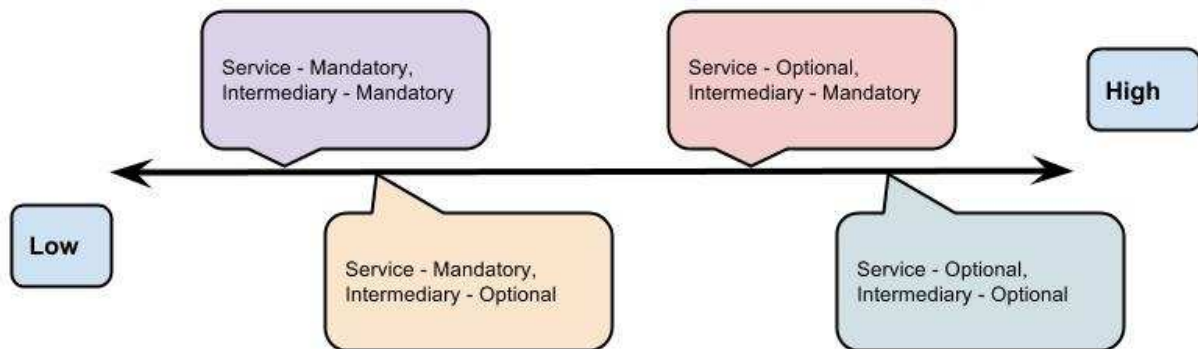
The Big bang approach seems to be the preferred choice for projects with mandatory services and mandatory intermediaries. If the service is mandatory, the end users have no choice but to use the digital system as soon as it is mandated. In such situations if the services are not available simultaneously across all kinds of intermediaries, the chances of people encountering glitches would be very high. A larger number of such problems may give rise to resistance by target users, and the pace of digitization would slow down. Simultaneously, if manual and digital alternatives to the service are available, the glitches in the system would drive people away from using the planned digital service.

Projects where the use of intermediaries is optional, availability of an online service or a phone-based service would help in increasing the reach of the service. In these cases, the importance of intermediary is relatively less because of direct access to the application. The need for adopting a big bang approach towards project implementation is also relatively less. Optional Intermediaries type of projects may be implemented in an incremental manner for different segments of target users. Different types of intermediaries should be targeted at the appropriate segment of users and can be introduced according to the priorities.

For optional services, it is possible to increase slowly the reach as people can continue without it for some duration. In view of the fact that target users have the option to not use the service at all, it becomes very important to convince users about the benefits of the service, especially the benefits of digital alternatives. If an optional service is made directly available to users, then the intermediary layers can be added slowly targeting different types of the target population. In this process, it is more important to promote the service, educate users about its use and simultaneously make the service easy to access and use.

### ***Diffusion Efforts***

As per Roger's (2003) diffusion theory, the mandatory or optional nature of service influences only the type of innovation decision. Mandatory projects require relatively less promotional efforts. On the other hand, for optional projects it is important to focus on the promotional efforts, select the right communication channel for different target audiences and alter the perceived attributes of the service in order to make it more desirable for the users to adopt.



**Figure 3. Diffusion Efforts for Different Types of E-Government Projects**

In projects where intermediaries are mandatory, the intermediaries tend to share the efforts required for promotion of the digital services. In some cases, an intermediary may modify the actual service at the citizen's interface. Such modifications are termed as re-invention. Re-invention influences the perceived attributes of the e-Government projects. An example of such re-invention relates to filing of income tax returns through consultants.

The degree of efforts required for diffusion of e-Government projects for the four categories of projects can be described in relative terms. Obligatory projects would require least amount of efforts for diffusion followed by projects of the optional intermediary category. In both these cases, the mandatory/optional nature of service is found to be a major determinant of the required degree of diffusion efforts. Optional service projects would require relatively higher efforts for diffusion as compared to the mandatory service categories. Finally, discretionary projects will require the highest degree of diffusion efforts, among the four categories, owing to the optional nature of service and smaller share of promotional activities by the intermediaries.

### ***Project Champion***

One of the key responsibilities of the project champion is to manage the intermediaries. Managing intermediaries also includes standardizing, to the extent possible, user experience across different intermediaries. In addition to this they are also responsible for the promotion of digitization. While for projects with mandatory services, promotional activities are relatively less critical, the requirement of a smooth and simultaneous roll-out on a large scale for such projects, increases the importance of the project champion role very significantly. On the other hand, projects with optional services require project champions to get actively involved in the promotion effort.

In obligatory projects, the role of project champion seems to focus on managing intermediaries and ensuring smooth and simultaneous roll-out of the project. Owing to the mandatory nature of the project, the number (and often even variety) of intermediaries is very high. This makes management of intermediaries possibly the toughest challenge for such categories of projects. However, promotional efforts were relatively less as compared to the discretionary projects.

For Optional Intermediaries type projects, it is important to manage intermediaries and ensure a smooth roll-out of the services. For the success of the project, promotion of the project among the stakeholders becomes a major responsibility of the project champion.

### ***Legal Changes***

In Bhoomi project, village level entrepreneurs (VLEs) played an important role in the issue of Record of Rights certificates for ownership of land. The integration of VLEs in the delivery system followed two

major legal changes. The first major change was acceptability of unsigned certificates on pre-printed paper as a valid legal document. The second was allowing a private partner to issue such certificates. Similar legal support may also be required to make it possible to use certain new types of intermediaries in the delivery of government process. The sustainability of Bhoomi project has been facilitated by sealing of manual records. This acts as a point of no return in the journey of digitization of manual land records. Thus, in this case, legal changes have facilitated project implementation success. In some e-Governance projects, success has been achieved by means of mandating the new system. The case of the land records digitization project and the online filing of income tax returns are two such examples of mandatory use. Appropriate legislations facilitate such mandatory adoption of digital services.

From the above examples, we infer that the role of legal changes is high in case of projects with mandatory services as compared to the projects with optional services. With regards to intermediaries, they play the same facilitating role in mandatory as well as optional intermediary projects.

The findings of the entire discussion so far are summarized in the table below.

<b>Project Categories /Project Management Strategies</b>	<b>Obligatory</b>	<b>Optional Intermediary</b>	<b>Optional Service</b>	<b>Discretionary</b>
Project implementation approach	Big bang	Big bang	Incremental	Incremental
Diffusion efforts	Low	Medium	High	Very High
Project champion	Managing intermediaries (toughest challenge for this category)  Least efforts in project promotion  Management of Project Rollout - Critical	Managing intermediaries – most important  Less efforts in project promotion  Management of Project Rollout -Critical	Manage intermediaries (difficult but easier than mandatory service)  Promotion to end users	Promotion to end users  Some efforts in managing intermediaries
Legal changes	High	High	Low	Low

**Table 2. The Impact of Project Attributes on Project Management Strategies**

## Conclusion

The extant literature on management of e-Government projects discusses success factors for these projects in considerable detail (Poon and Wagner 2001). However, it is observed that the contingency aspects of management of these projects have not been given sufficient attention. The classification of e-Government project based on specific project attributes is an area that is largely understudied. Further, due to this gap in the literature, the relationship between certain e-Government project attributes and different management strategies has also not been explored adequately.

In this paper, an attempt to bridge this gap has been made, with a specific focus on G2C projects. A classification of such projects based on the mandatory/optional nature of concerned service (Lee and Lee 2014, Radl and Chen 2005) and the mandatory/optional nature of intermediaries (Janssen and Klievink 2008, Sein and Furuholt 2012, Sorrentino and Niehaves 2010) - two important project attributes - has been proposed. We have also demonstrated how this classification can act as a handle for selecting appropriate management strategies, viz., the project implementation approach, diffusion efforts, the role of project champion and the role of legal changes. Thus, the observations of this study are expected to enhance significantly our understanding of the management of G2C projects. This has important implications for determining and fine-tuning related project management mechanisms for effective management of G2C projects.

This work can be extended further by examining the influence of other project attributes like the scale of the project, diversity of the target population, the complexity of service, type of funding pattern, etc. on the desirable management strategies. There is also a significant scope to explore the impact of different project attributes on other management strategies like re-engineering, impact assessment and integration with other sub-systems.

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<sup>i</sup> Following websites have been used as sources of case data (all accessed on 15<sup>th</sup> January, 2015).

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