Legitimation of E-Government Initiatives: A Study of India's Identity Project

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Abstract. Legitimation is an important aspect of e-government initiatives due to the complex and diverse issues related to policy and technology implementation which create huge demands for resources. Legitimation is one of the core concepts of Institutional theory. Though institutional theory is gaining importance in IS and e-government research, there are very few studies on the strategies and process of legitimation in e-government implementations. In this paper we use institutional theory and examine the institutionalization of India's Unique Identification (UID) project. Given the novelty and uniqueness of the UID initiative, we find that the predominant strategy used is that of conformance and proactive manipulation of the environment. The main contribution of the paper is in identifying that different strategies are used for supply side and demand side stakeholders of e-government projects.

Keywords: E-government, legitimation, Institutional theory.

1 Introduction

E-government projects cover a variety of applications depending on the content, the stakeholders involved and the specific context of use. While typical e-government projects cater to specific categories of stakeholders (Rowley 2011), National identity (NI) projects are relevant to a wider range of contexts and stakeholders. NI projects leverage the latest technologies like smart cards and biometrics to enable identity management and impact large numbers of people in various economic, social and political activities. While the primary driving forces behind identity projects in developing countries are efficient delivery of government welfare services and developmental goals, in some of the developed countries, especially in Europe (Kubicek and Noack, 2010), the current focus is national security, travel document management, e-commerce and e-services. The evolving expectations, diverse stakeholders, large scale of implementation, untested technologies and the huge demands for financial and human resources make NI projects complex and risk prone. Countries like the UK and Australia had to abandon their identity projects as the public debate and opposition raised issues which turned these projects into technical, financial and even political liabilities.

NI projects are similar to other infrastructure projects taken up by the state, as they provide a basic service (i.e. identity management) to citizens, which can then be used by other government, private, social and economic actors. NI project creates a *new*

institutional field with its own set of norms, processes and practices through which government, commercial and other parties interact. The benefits of identity projects take a longer time to become visible as they depend on large scale usage across diverse applications and on network effects. Hence the success of NI project depends on it gaining legitimacy and achieving a taken-for-grantedness among the various stakeholders.

Legitimizing a novel idea is very critical, especially if it involves both technology and practice novelty (Boxenbaum 2008). The institutionalization of NI involves the acceptance of the new identity management processes in addition to the adoption and diffusion of the identity management technologies. The planned interventions and tactics adopted by the NI project managers to gain legitimacy are critical to creating the new institutional field. While gaining legitimacy is critical for e-government success, there exists a gap in literature related to the legitimation processes and strategies adopted by e-government projects. In this paper we examine the legitimation strategies adopted by NI projects and address a critical gap in e-government literature. We study the institutionalization of India's Unique Identification (UID) project and examine the strategies being adopted to gain legitimacy.

The Indian government has taken up Aadhaar[1], an ambitious biometric based identity for its billion plus residents in order to provide a clear identity to its citizens that would be primarily used as the basis for efficient delivery of welfare services (UIDAI, 2009). UID has many firsts to its credit as an e-government project with respect to technology, scale and application, even when compared to other public and private ICT implementations across the globe. The current discourse is slowing moving away from UID enrolments and technological debates related to data security, reliability of biometric technology and authentication to the UID based delivery of welfare services. Given the novelty of the UID initiative with its dependence on IT as a paradigm changer, we found the strategies for legitimation of the IT/IS process to be different from the legitimation of the identify management process in government departments (Avgerou, 2000). Though a repertoire of tactics is employed, UID is focusing on gaining cognitive legitimacy. It uses acquiescence or conformance strategies for the IT/IS dimension and proactive environment manipulation strategies for institutionalization of the identity management process. The main contribution of the paper is in identifying that the legitimation strategies adopted for supply side stakeholders differ from those adopted for demand side stakeholders. While context is critical in studying IS innovation diffusion, our findings can be applied to other large e-government projects which involve the creation of institutions where IT can be seen as an active change agent.

In the next section we discuss the theoretical background for legitimation of e-government projects. We then describe the research question and method used. We provide an overview of Aadhaar and its institutional field to help understand the context. The analysis section details out our findings related to the legitimation strategies being adopted by Aadhaar. We discuss our study with respect to existing studies on legitimation strategies and conclude by identifying the contributions made by this study and the future work.

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[1] Aadhaar means "foundation" in many Indian languages. UID and Aadhaar have been used interchangeably in this document.

2   Theoretical Background

Institutional theory "considers the processes by which structures, including schemas, rules, norms, and routines, become established as authoritative guidelines for social behavior" (Scott, 2005). Institutional theory recognizes that the environment places a variety of technical, economic, social and cultural demands on organizations. Institutionalization is the process by which social practices conform to environmental pressures and eventually become taken for granted (Scott, 2008). Institutional theorists describe three kinds of institutional pressures the environment exerts on organizations and organizational actors: coercive – formal and informal pressures due to the legal environment, standards and norms; normative – due to professionalism resulting from education and professional networks; and mimetic – as a response to uncertainty when organizations mimic or model themselves on other organizations that are perceived to be more legitimate or successful (DiMaggio and Powell, 1983).

The concept of agency is also gaining importance in institutional theory where interested actors work to influence their institutional contexts. Jepperson (1991) considers agentic action and defines institutions as the product of specific purposive actions taken to reproduce, alter and destroy mechanisms of control. Lawrence and Suddaby (2006) through a review of empirical work in institutional entrepreneurship, identify ten distinct sets of practices through which actors engaged in actions that resulted in the creation of new institutions. These include advocacy, defining, vesting, constructing identities, changing normative associations, constructing normative networks, mimicry etc. Advocacy, defining and vesting are actions which have political tones and define access to material resources. Constructing identities and changing normative associations focus on how actors' belief systems are reconfigured. Mimicry and educating are actions which focus on altering abstract categorizations. Oliver (1991) suggests an active approach of organizational actors in managing legitimacy. She suggests that organizational actors and managers do not always conform or comply with institutional pressures, but adopt other strategic responses which vary in active resistance. The five types of strategic responses which are each exerted through tactics are: acquiescence, compromise, avoidance, defiance, and manipulation. Boxenbaum (2008) suggests that there are varying degrees between the two extremes of institutional pressures and managerial response in gaining legitimacy. Rao (1994) classifies legitimacy into sociopolitical and cognitive. Cognitive legitimacy is the acceptance of new ideas as desirable and appropriate within a widely shared system of norms and values, while endorsements by legal authorities, governmental bodies, and other powerful organizations provides sociopolitical legitimacy.

Suchmann (1995) synthesizes the strategic and institutional groups of legitimation studies and proposes an inclusive, broad-based definition of legitimacy:

"*Legitimacy is a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions.*"

He proposes three primary forms of legitimacy: pragmatic, based on audience self-interest; moral, based on normative approval: and cognitive, based on comprehensibility and taken-for-grantedness. While the three forms co-exist, there are some underlying distinctions: pragmatic legitimacy rests on audience self-interest,

whereas moral and cognitive legitimation involves larger cultural rules; pragmatic and moral legitimacy rest on discursive evaluation and organizations can gain legitimation by participating in public discussions and dialogues. Suchmann proposes 30 legitimation strategies and classifies them under gaining, maintaining and repairing legitimation within the 'institutional field' which is the environment within which legitimacy must be gained. Further the mechanism for gaining legitimacy can be classified as conforming, selecting or manipulating the institutional field.

A cross-disciplinary literature review by Weerakkody et al. (2009) finds that the use of institutional theory is in its infancy within the IS discipline. King et al. (1994) recognizing the institutional factors in the diffusion of IT innovations propose six types of interventions which can be employed by the government to facilitate IT innovations. The six types of institutional interventions are mobilization, knowledge building, knowledge deployment, innovation directive, subsidy, and standard setting. While these interventions were proposed for guiding government's support for IT innovation, Henriksen and Damsgaard (2007) adapt the interventions proposed by King et al. to study and classify the initiatives used to stimulate e-government diffusion in Denmark. They find that the demand-pull based approach has not been successful and the Danish government is changing its strategy to imperatives and regulations. An examination of IS research publications by Mignerat and Rivard (2009) found that though the Institutional theory is being used by IS researchers; there are very few papers which adopted institutional theory to study e-government. Another finding was that 'acquiescence' or conformance was the only legitimation strategy studied by most of the IS papers reviewed. IS innovations may be initially adopted and diffused for its technical merits (Zucker 1983), and partly under the influence of powerful actors (Granovetter and McGuire 1998). Avgerou (2000) finds that IS development and organizational transformation are two different institutionalization processes, and ongoing sustenance of IS adoption is based on its legitimacy, irrespective of its contribution to the processes of organizational change.

According to Whitley and Hoisen (2010) most governments approach their NI projects as a technology implementation without considering the eventual social impact and economic opportunities possible through innovative applications of NI. Crosby (2008), by studying various NI usages across countries and private sector players, highlights the opportunities for new services and markets based on the NI infrastructure. He also brings out the need to involve various stakeholders and sectors in designing and implementing the NI project. The role of stakeholders and the importance of their participation in the e-government initiative for its long-term success are well-recognized in the literature (Flak and Rose, 2005). De' (2005) provides an appropriate framework for stakeholder groups in e-government considering their role as demand-side or supply-side and the impact felt by them as first order, second order or higher-order effects. These stakeholder groups exert institutional pressures on the e-government project.

Studies on technology acceptance and user satisfaction focus on individual's adoptions of ICT based on their perceptions of the technology (Venkatesh et al, 2003). E-government projects differ as the acceptance involves a social and political process with different adoption motivations across stakeholders. Current e-government approaches take a project management approach and do not address the facilitation process required across various stakeholders such as policymakers, public

officials, and business persons (Sarantis et al., 2010). Hence an institutional perspective considering the various institutional pressures, developmental goals, existing social norms and beliefs which forces e-government projects to seek legitimacy more than efficiency (DiMaggio and Powell, 1983) is more appropriate to study the diffusion of NI initiatives.

The literature review identifies the need for the legitimation process in e-government projects, especially NI projects, given the novelty, complexity and scale of the initiatives. There is a need to gain a positive cognitive personal response from salient stakeholders to gain support and access to resources. Existing studies of legitimation of IT-enabled changes focus on organizations (private or public). There exists a gap in literature related to studies on legitimation strategies adopted in e-government projects. We attempt to address this gap by examining the legitimation strategies adopted by India's UID project.

3   Research Question and Method

The research objective is to identify and analyze the interventions and legitimation strategies adopted by Aadhaar for success of the NI initiative. As NI initiatives involve creating a new institutional field with new actors, norms and procedures, the legitimation strategies are used to institutionalize NI. Legitimation of NI initiatives would involve two separate sets of strategies (Avgerou, 2000); one for the legitimation of the identity technologies and infrastructure and the other for the identity management processes used in e-government projects (enrolments, authentication and related applications). Hence

RQ1: *Are there different sets of strategies for gaining IS/IT infrastructure legitimation and e-government process legitimation in NI initiatives?*

The success of NI depends on large scale usage across diverse contexts and e-government applications. While pragmatic and moral legitimation strategies will be adopted, gaining cognitive legitimacy is important for long term success of NI initiatives. But government departments and agencies using NI to reengineer their process would evaluate the NI processes against their pragmatic expectations and benefits. The large numbers of people impacted and the novelty of technology and processes may force NI project managers to adopt manipulation strategies like co-opt, influence, or control the institutional pressures.

RQ2: *Are there specific clusters and legitimation strategies which are more suitable for gaining specific types of legitimacy in NI projects?*

The above research questions have been framed specific to NI projects, but can be generalized to other large e-government or IS implementation projects which involve the creation of a new institutional field.

The research methodology adopted in this paper is a case study approach using document analysis. Before beginning our study, we had an informal discussion with one of the senior members of the UIDAI technical team, who provided us with details on the events, choices and decisions made which lead to the current design and process for UID enrolments. The discussion also helped us identify relevant documents on the UIDAI website. We studied all the documents and articles related

to Aadhaar available at the website of UIDAI (http://uidai.gov.in/). These indicate the explicit legitimation strategies adopted. Several news articles related to UID which highlight the activities of UIDAI were accessed through popular search engines using the keywords "UID", "UIDAI" and "Aadhaar". Documents and reports related to UID available in the public domain like websites of various government departments and agencies (like Parliament debates, GoI circulars, welfare benefit department websites) and discussions on social media sites dedicated to UID discussions were also studied (like http://thinkuid.org/ and http://aadhararticles.blogspot.in/). The documents and news articles for the period of two years (2011 and 2012) were examined. Each document and source was examined by the author and the legitimation strategy identified. Each strategy was then coded using the categorization proposed by Suchmann (1995) for gaining legitimacy along two dimensions - pragmatic, moral and cognitive legitimacy; and conforming, selecting and manipulating the institutional field.   The legitimation strategies were further classified as IT/IS oriented strategies and NI process strategies.

4   Aadhaar – India's UID

Aadhaar, India's Unique Identity project (UID), which aims to provide a unique identity to 1.2 billion is the largest ICT roll-out using IT, biometrics and mobile technologies. In the last decade various national identity options have been evaluated by the Indian government. The current national identity project, initially proposed in 2003, was called the Multipurpose National Identity card and was initiated to address the national security issues. The current government which came to power in 2004 carried the project forward but renamed it as UID in January 2009 indicating a shift to a development goal for the project. The context in which Aadhaar project has been taken up is for efficient delivery of the socio-economic benefit services of the government. According to the strategy overview document developed by UIDAI, the statutory body set up to handle the Aadhaar project (UIDAI, 2010) –

The purpose of UIDAI is to issue a unique identification number (UID) to all Indian residents that is (a) robust enough to eliminate duplicate and fake identities, and (b) can be verified and authenticated in an easy, cost effective way"

The current focus of UID is the poor and underprivileged communities who lack any form of identity documentation. Therefore, UID enrolments are not being mandated though it is envisaged as the de facto identity for most applications in the future (GoI, 2008). UIDAI issues a 12-digit randomly generated number as the Aadhaar number after collecting the demographic (Name, address, gender, date of birth) and biometric (Iris scans, fingerprints and photographs) details of individuals. These details are subsequently verified against a central repository to check for duplicates before the UID is issued. Unlike most other countries UIDAI issues only a number and not a card. The residents' enrolment is done by partnering with central and state departments (Registrars) who process the UID applications and connect to a central repository for the de-duplication check and issue of Aadhaar. The Registrars that the UIDAI has partnered with are the government departments involved in

providing welfare services like employment guarantee, health insurance, food distribution; who will use the UID in providing subsidies and other benefits.

The usage of UID by the various government and private agencies has been planned as a federated set of databases with the central repository containing a minimal set of fields. Registrars can provide their own account number for each resident which is the derived ID, while the UID/Aadhaar number forms the base ID. The registrars' database will access individual resident's details using the UID or the derived ID. UIDAI offers online authentication services by checking the resident's data against that stored in the central repository, but provides only "Yes"/"No" responses in order to protect residents' privacy. The authentication services are implemented using service agencies that have the connectivity to the Aadhaar authentication module. User agencies that require Aadhaar authentication have to sign up with the authentication service agency.

While the technological and implementation challenge of enrolling and providing IDs to 1.2 billion is broadly acknowledged, the common opinion is that UID is otherwise a very simplistic problem of a unique 12-digit number. But the achievement of the development objective is dependent on a base infrastructure consisting of connectivity, financial inclusion and identity on which various government and private agencies would build their own applications and platforms. This requires Aadhaar to have a taken-for-grantedness for identity management. As the extensions of the Aadhaar infrastructure are context dependant, various stakeholders like government agencies (registrars), regulators, residents, etc. are involved. We provide two examples below to highlight the possible variations. The Madhya Pradesh state government has reengineered its food distribution processes based on Aadhaar and has built the MPePDS platform for its food distribution system (MPePDS, n.d.). Figure 1 shows the proposed MPePDS process where the identity verification is done offline.
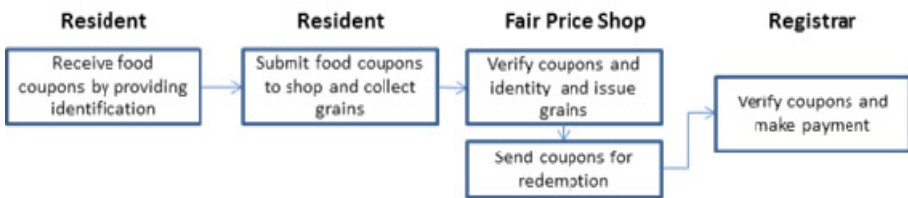
Fig. 1. A sample usage of Aadhaar in food distribution process

To ensure financial inclusion and electronic payments, the Indian Central Bank and the banking association are building a payment platform consisting of Aadhaar Payments Bridge System, Aadhaar enabled payment systems and microATMs. This platform forms the base on which benefits are transferred to residents and basic financial transactions can be carried out using microATMs. UIDAI has signed up several banks to open the "no-frills" account after the central bank made policy changes to allow such accounts. Banking correspondents (BC) (can be the local small retailers) using the microATMs are planned as providing this last mile banking

services in remote villages. Figure 2 provides an illustration of cash withdrawal using online authentication and electronic payments.

While the above examples illustrates only the first order effects of Aadhaar, the higher-order effects such as the residents' ability to participate in economic activity due to access to banking services, reduction of transaction costs due to the last mile banking is not directly visible. The ability to provide identity and access to financial services may further increase the trustworthiness of the individual and increase his abilities to participate in market transactions by providing services and products.
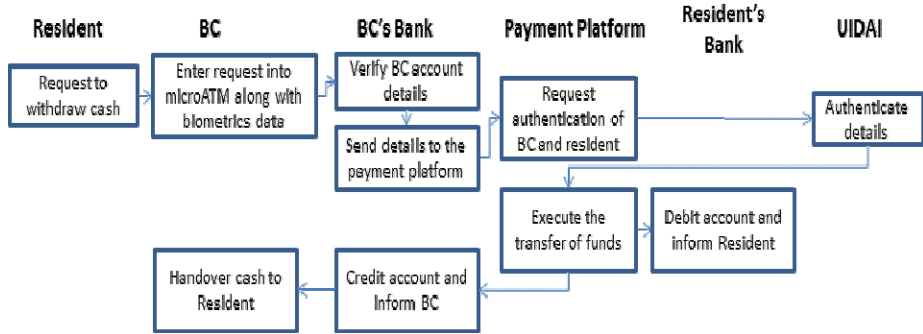
Fig. 2. Aadhaar enabled Payments Platform

The UIDAI has identified the various welfare schemes and relevant stakeholders who would be involved in adopting Aadhaar enabled services. Various regulatory bodies are also involved in establishing standards for different aspects of Aadhaar and its usage for e.g. UIDAI for biometrics, the Central Bank for microATM devices, etc. These standards are used by the suppliers involved in the UID enrolments, authentication and usage, who form the higher order stakeholders.

4.1   The Institutional Field of Aadhaar

With upcoming elections in 2014, the current ruling political party has reinforced its support for the UID project and announced new welfare schemes which are Aadhaar-based for e.g., direct cash transfers. The Planning Commission provides the administrative support for UIDAI and is actively pushing for Aadhaar as a basic requirement for inclusive development. But Aadhaar faces opposition from many other institutional actors and organizations at other levels in the government. The UIDAI bill has not yet been presented in the parliament as it has openly met resistance from various political parties and Parliamentary Standing Committee on Finance. Resistance has been seen from other government departments like the National Population Registry (NPR) which is collecting details of citizens with the objective of national security and views Aadhaar as intruding on its territory. While Aadhaar has been initiated by the central government, the welfare programs are state level responsibilities and hence Aadhaar-based applications have to be developed and supported by state governments in most cases. The implementation of the Aadhaar based welfare initiatives also depends on the

executive officers in the Indian Administrative system who are posted at various levels of district and local governments.

One of the initial objections raised against UID was that if such projects have failed in other developed countries, its success in India is highly improbable. There are many public debates by social activists speaking on behalf of the poor and marginalized raising questions on the importance and applications of Aadhaar based on the feasibility of technology and policy implementation. Differing perspectives of Aadhaar are available on social media sites where opinions and news items are posted related to Aadhaar. Some of the common discussions revolve around data privacy, data aggregation, reliability of the technology, legality of UID, errors and delays in UID allocation.
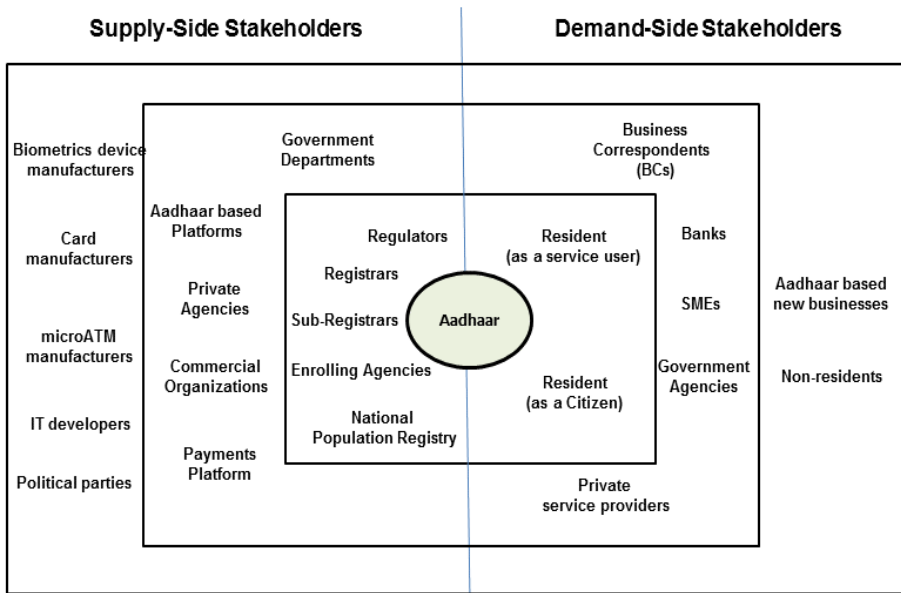

Fig. 3. Institutional field of Aadhaar (illustrative)

We provide an illustrative institutional field using the stakeholder diagram in Figure 3 which highlights the numerous and diverse stakeholders of the Aadhaar project. Each consecutive square represents higher-order stakeholders on the supply and demand side of Aadhaar (De' 2005).

5   Analysis of the Legitimation Strategies Adopted by Aadhaar

Organizations taking up activities or initiatives which have few precedents in the social order face the overwhelming task of acquiring acceptance either for the propriety of the activity or their own validity as practitioners (Suchmann 1995). In the case of Aadhaar overcoming this "liability of newness" is extremely formidable as

the technologies used are untested and the initiative still lacks legal support. The acceptance of Aadhaar as the national identity, when currently many other forms of identity documents exist, involves convincing existing entities to support Aadhaar and get involved in a risky and lengthy relationship for offering Aadhaar enabled services.

We analyze the legitimacy gaining activities adopted by Aadhaar using two dimensions. The first dimension is based on whether the tactics are used for legitimizing the IT/IS innovation or the NI processes and the second dimension is the stakeholders being addressed with these tactics – supply side or demand side. The 2x2 matrix in Table 1 summarizes the predominant legitimation strategies adopted by UID. For each legitimation tactic we also identify the mechanisms used (C-conform, S- select and M-manipulate environment) and the type of legitimation being sought (p-pragmatic, m-moral and c- cognitive).The letters in the brackets after each strategy indicates the mechanism and type of legitimation sought.

Legitimation of IS Innovation:
Conforming to the existing norms and standards is the dominant legitimation strategy for institutionalization of the IT/IS innovations used in UID. Most of the tactics adopted are towards gaining *cognitive legitimacy* with both the supply side and demand side stakeholders.

UIDAI relies on the strong reputation of the key people and partners from the Indian IT industry. UIDAI recruited Nandan Nilekeni, the ex-CEO of an Indian IT firm which is held in high regard for its business ethics, transparency and performance, as the Chairperson of UIDAI. Legitimacy of IT knowledge and execution capabilities is sought by recruiting people from the IT industry on a voluntary basis and forging partnerships with various IT industry players. UIDAI is partnering with the Banking system for building Aadhaar enabled systems and platforms which will form the basis of cash transfers and transactions for the welfare schemes. Being an e-government project conforming to existing standards or defining new standards is a mandatory requirement for UIDAI to gain cognitive legitimacy. UIDAI has adopted most of the e-government standards issued by the Department of electronics and IT. In some cases it had to define new standards like standards for biometrics and microATM. In response to the doubts and concerns raised by various institutional actors over the biometrics technology UID has invested in the creation of the Biometrics Centre of Competence. In some aspects of the technical architecture and choice of technologies, UIDAI has adopted externally accepted competencies like open source and a server farm architecture to avoid lock-in and be cost-efficient. Given the failure of several e-government initiatives which adopted a kiosk-based model (De' 2005); UIDAI is riding on the mobile penetration in India as a means to access the rural and remote regions.

Demonstration of success has been actively pursued by UIDAI as a means to gain moral legitimacy. Success is operationalized as the number of Aadhaar enrolments. Announcing the number of Aadhaar numbers issued and handing over of specific milestone numbers by prominent people like the Prime Minster or ruling party chairperson are some of the strategies adopted.

Table 1. Legitimation Strategies adopted by UID

	Supply-side stakeholders	Demand-side stakeholders
IS Innovation Institutionalization	• Rely on reputation of key personnel (C,p) • Co-optation with the Banking System (C,p) • Adopt existing e-government standards (C,c) • Define new hardware/device standards (C,c) • Adopt open source (C,c) • Mimic hardware architecture of large cloud infrastructure providers (C,c) • Undertake research and competency development in biometrics (C, c)	• Rely on reputation of IT industry, outsourcing partners (C,p) • Co-optation with the Banking System (C,p) • Adopt existing e-government standards (C,c) • Define new hardware/device standards (C,c) • Leverage the mobile penetration (C,c) • Demonstrate success through announcements of number of Aadhaar enrolment and specific milestones (M,m)
NI Processes Institutionalization	• Seek legislation of UID (M, c) • Co-opt salient and influential stakeholders (M, c) • Use task forces (C, p) • Engage with government departments and public agencies (C, p) • Identify receptive state governments and district level officers for pilots (S, p) • Communicate the 'efficiency' goal to registrars (M, p)	• Seek legislation of UID (M, c) • Co-opt salient and influential stakeholders (M, c) • Communicate the benefits of Identity (M, p) • Advertise an image of transparency and openness through actions like sharing data (M, p) • Form coalition of initial adopters and highlight success (M, m) • Persist with UID enrolments in spite of lack of regulatory support (M, c) • Popularize usage of UID authentication by through advocates of UID in the state government and administrative department (M, c) • Established Aadhaar as a de facto standard by mandating it for welfare schemes, retirement benefits and payroll of government employees (M,c).

Legitimation of NI Processes:

The dominant strategy adopted for legitimization of the NI processes is to *manipulate the environment*. This is more applicable to ensure participation from demand side stakeholders during the UID enrolments as they are the salient stakeholders for this stage of UID. Once the UID gains legal status, the manipulation mechanism may be

visible even on the supply-side stakeholders as government departments and agencies would have to adopt UID-based services.

Communicating the benefits of identity to the residents, and highlighting the goal of efficiency in distribution and monitoring of welfare schemes to government departments is a clear manipulation strategy. UIDAI is seeking cognitive legitimacy through the UIDAI bill which has yet to be enacted. In the meantime, it is using the support of salient and influential stakeholders like the Prime Minister and Finance minister to enable it to continue operating in its current set of welfare departments and locations and enter new application areas like direct cash transfers. The UIDAI uses task forces with members from relevant government departments as a means to offer them decision making access to the design on the technical solution and policy implications. UIDAI engages them as registrars allowing them to collect information in addition to the basic details required for Aadhaar. UIDAI has engaged with certain welfare departments like public distribution system and employment guarantee scheme in its search for friendly audiences for the initial Aadhaar based applications. Under these welfare schemes it has identified receptive state governments and district level administrative officers to partner for the initial pilots of these applications.

While UID enrolments are claimed to be voluntary, mandating it for availing welfare benefits and other services, send a very explicit message that without an Aadhaar number, welfare benefits cannot be availed. It has persisted in Aadhaar enrolments in spite of lack of legislative and regulatory support. In spite of many technical and process related setbacks which led to delays and temporary hold up of Aadhaar enrolments, UIDAI has continued to retain its enrolment partners like the state governments and other departments who are keen to resume the Aadhaar enrolments. Aadhaar is approaching a de facto standard for identity and people are enrolling for Aadhaar numbers to take advantage of the advertised welfare benefits or the fear of exclusion.

UIDAI communicates an image of transparency and openness in all its communications. In accordance with this image it has an Aadhaar portal with current status and a website where it makes available data of UID enrolments and authentication which can be used for various analyses and research by anyone.

Legitimation Strategies for Demand Side and Supply Side:
The strategies adopted for gaining acceptance from the supply side and the demand side for the NI process are different. UIDAI attempts to gain *pragmatic legitimacy* with the supply side stakeholders like the government departments and agencies for the NI processes. UIDAI uses *cognitive legitimation strategies* to popularize the UID technology and processes among the demand side stakeholders.

Linkages between strategies:
UIDAI has adopted a repertoire of the legitimation strategies for gaining legitimacy and has accumulated a group of supporters across various kinds of stakeholders. Many of the specific actions taken for a strategy may be due to the existing context or situation at the time of decision-making by the organizational actors. We found during our analysis that some of the legitimation strategies lead to a new situation (or failure) where another legitimation strategy may need to be applied

to gain or maintain legitimacy. For example, we found that UIDAI had initially planned to adopt the IT architecture as per the existing e-government project guidelines, but on obtaining a quote from the hardware vendors it was found that the cost effectiveness requirement of the initiative would be at risk. Hence it was decided to adopt a farm of servers similar to the cloud based architecture using low-end servers. This was a novelty in government projects, though it had been quite successfully adopted by commercial IT organizations. But this required gaining legitimacy for the new architecture by defining new standards, advertising the product and popularizing the new model. Another instance is related to the lack of confidence in the existing biometric standards due to which UIDAI had to invest in research and competence building biometrics. Hence many of the strategies have a linkage and an order which we have not described in our analysis.

6   Findings and Discussion

Our analysis of the strategies adopted by UIDAI for institutionalization of Aadhaar identified the following

- IS innovation legitimation involves gaining cognitive legitimacy and conforming to existing environmental norms.
- NI projects need to use manipulative mechanisms to gain legitimacy of the NI processes. This strategy is more dominant with the demand side stakeholders during the initial stages of the NI project.
- Pragmatic legitimacy strategies are adopted for gaining acceptance of the NI processes with the supply side stakeholders. These stakeholders evaluate the NI project based on the benefits and norms of interactions to deliver NI based services, hence gaining pragmatic legitimacy is important.
- Cognitive legitimation strategies are used to popularize both NI processes and technologies with the demand side stakeholders.

With respect to our research questions we found that the legitimation of the IS innovation requires different sets of strategies as compared to the strategies adopted for NI processes (RQ1). The legitimation strategies for gaining acceptance with demand side and supply side stakeholders differ. The mechanisms for gaining legitimation are either conforming to the environment or manipulating the environment using cognitive and pragmatic legitimation strategies (RQ2). The strategies related to environment selection have only limited usage for e-government projects as the initiatives are constrained by their objectives and goals.

Our findings support the argument by Avgerou (2000) that IT and organizational change undergo two different institutionalization processes and the legitimation of IT does not automatically lead to organizational change. Mignerat and Rivard (2009) found that acquiesce or conformance to environment was the most dominant response studied in IS literature. IS initiatives within an organization usually conform to the institutional field of the organization as the sponsors of the project are usually the senior management. We found this to be true even in the case of e-government projects as IS legitimation strategies use mechanisms whereby the IS innovation conforms to standards and norms

in the professional discipline, even if the technology is untested and new. Our study finds empirical support for Henriksen and Damsgaard (2007) conclusion that manipulative or regulations are needed to embed IS innovations in organizational processes. While the technology may be accepted, usage of the technology in processes needs manipulative strategies. We also found that the legitimation strategies needed to gain the support of the supply side stakeholders differs from that required to popularize the concept among the larger demand side stakeholders. Pragmatic legitimacy is sought by supply side partners while cognitive legitimacy is required to gain the demand side acceptance. Cousins and Robey (2005) found that the B2B metal exchanges which survived had established pragmatic legitimacy in their business relationship among their trading partners. As the UID initiative is still in the initial adoption phase, it is too early to decide whether these strategies would result in sustained success and legitimacy of UID. While there are not many studies which has studied the legitimation strategies adopted by e-government projects, some of the existing IS innovation literature supports these findings.

Though we used Suchmann (1995) classification for analyzing the legitimation tactics, we could map them to the strategic responses and tactics in response to institutional pressures identified by Oliver (1991). But we did not find examples for some of the tactics proposed by Oliver. For example, the strategic response and tactics related to "Defy" like 'Assaulting the sources of institutional pressure' is not addressed as part of the legitimation strategies. Is it because such a tactic does not help in gaining legitimacy? We approached this study of legitimation of NI projects assuming planned actions by organizational actors to institutionalize the new idea. But if we assume legitimation as a socially constructed concept Structuration theory by Giddens can be used as another lens to study legitimation of e-government projects.

We have identified the legitimation strategies adopted by UIDAI for gaining legitimacy using document analysis. Boxenbaum (2008) argues that this approach does not help identify the process of legitimation which involves the choices available to organizational actors and the context and trade-offs made while taking decisions. While we recognize the limitation of our method, we argue that the process of legitimation can be inferred from document analysis in the case of e-government initiatives. Being an e-government initiative UIDAI publishes all information through their website. Some of the details can be reconstructed using news articles, blogposts and other social media postings. But we realize that the sequence and linkages among strategies may not always be identifiable through methods like document analysis.

7   Conclusions

Aadhaar - the national identity project of India is unique and novel in many aspects and gaining legitimacy in its institutional field is critical for its long term survival. We used the lens of institutional theory to study the legitimation strategies adopted by this e-government initiative in India. One of the contributions of the paper is in identifying that NI projects adopt different strategies for institutionalizing the IS innovation and the NI processes. While conformance to environment is the dominant strategic mechanism for legitimizing IS innovation, manipulation of the environment is the

mechanism adopted for institutionalizing the NI processes. The main contribution of the paper is that IT-enabled changes seek cognitive legitimacy with demand side stakeholders and pragmatic legitimacy with their supply side stakeholders.

This paper contributes to the e-government research by filling the gap in studying legitimation strategies in e-government. It also contributes to the institutional theory literature by bringing in the e-government context to legitimation strategies. Some of the future research areas are identifying the linkages between legitimation strategies, and associating the strategies to specific stages of the innovation diffusion cycle.

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