Strategic Conceptualization & Planning Transformation for e-Governance Implementation

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Abstract— ICT implementation in public sector is undergoing a colossal transformation with the advent of sophisticated & reliable technology solutions, ably complimented by briskly maturing service delivery process models. The e-Governance (& Digital India) roadmap framed by respective State & Central Governments in the last decade bears testimony to the fact that citizens can expect a radical shift in Government functioning: resulting in noteworthy upliftment of Policy Framework mechanisms. A robust implementation strategy encasing the best practices and lessons learnt is therefore essential during the Conceptualization & Planning phase of any e-Governance initiative to ensure the efficacy and attainment of the overall vision. The key benchmarks of such a strategy would encompass a redefined procurement charter, customized implementation model, reformed Financial/payment framework & efficient Governance/monitoring mechanism.

In this paper, we would discuss these essential Planning phase parameters and possible solution to the bottlenecks & deadlock circumstances.

Index Terms—e-governance, Deadlock, Digitization, Integration, Planning, Procurement, Strategy, Subcontracting, Transition

1 INTRODUCTION

The implementation of e-Governance project is an extremely intricate process demanding provisioning of hardware & software, networking, data digitization, process re-engineering, change management and several other complex procedures in a very regulated Government environment (Dr. Bhatnagar, 2002). Therefore the efficacy, dependability and consistency of the Planning phase are important evaluating criterion while monitoring the success of any e-Governance initiative. “Strategic planning for project management is the development of a standard methodology for project management, a methodology that can be used over and over again, and that will produce a high likelihood of achieving the project’s objectives”(Kerzner 2001:16).

The learnings attained via implementation of 33 Mission mode projects (Central & State level) under NEGP (refer Deity website, Ministry of Communications & IT, GOI) in recent years need to be translated and incorporated in upcoming deployment models. This would ensure the readiness of the Government units to tackle the risks and issues encountered in the past and avoid any ‘deadlock’ situations during implementation. According to Heeks (2003), nearly 50% of e-Governance projects are partial failures and 35% total failure. While the list of challenges and bottlenecks is immense and might be of distinct nature due to the environmental dependencies; still a structured analysis of the same would elucidate four broad categories of pain areas that beckon substantial diligence during the Planning phase.

These four categories are-
1. Procurement -Infrastructure & Services
2. Implementation & Technical Solution Deployment
3. Legal Financial/Payment Model
4. Governance & Monitoring

In this paper, a quantitative based approach elucidating several e-Governance implementations (MMPs) across Central & State level has been utilized to investigate the potential threats and their possible solutions across aforementioned categories during the Planning stage. These broad categories are a function of several subcomponents, each of which is an important activity/factor during the deployment stage. A study of these subcomponents highlights the underlying issues; further leading to a diagnostic solution (facilitated by best practices) to address these concerns (Rabaiah and Vandijck, 2009). Thus directly ensuing better fund utilization, on time delivery and superior quality of solution implementation. Guidelines have been drafted in accordance with the roles and responsibilities of major stakeholders in a typical e-Governance initiative viz. State/Department, SI/vendors & Consulting partners.

In the subsequent sections, each of the above planning phase modules have been explained in detail.
2 PROCUREMENT-INFRASTRUCTURE & SERVICES

2.1 SubContracting

The geographical scope of e-Governance project demands deployment of resources-human and infrastructure at remote locations; quite distant from the regional offices/headquarters of Industrial stalwarts. Since most of the IT organizations do not have the desired level of regional penetration; hence they resort to subcontracting of project components viz. Data Digitization, Site Preparation of Network & IT infrastructure, Training etc. These subcontractors are local/regional vendors who deploy compromised quality resources to maximize their share that they leverage from large IT houses. Many e-Governance projects have witnessed unwar- ranted delays due to performance issues of the sub- contractors (Song, 2004 and Reddick, 2010). In many cases, these subcontractors delay the compensation to their employees; thus resulting in the stoppage of services. In scenarios, where there is no such hindrance the quality of the deliverable is always under scrutiny. In extreme cases, these subcontractors further delegate (subcontract) the services to some other vendor; creating a chain or ‘multiple tier subcontracting architecture’. It is to be understood that with each delegated level of subcontracting the value and quality of the services depreciates exponentially. Let us take an example: Consider a scenario where the primary System Integrator say ‘X Technologies’ is charging Rs. 100 to the State for digitization of 1 government record. Now X technologies have subcontracted this service to Y at Rs 50; thus X is still able to leverage Rs 50 from the transaction. Further, Y has subcontracted to Z at Rs.30. Assuming that there is no further

Subcontracting involved, we observe that a service which was

Valued at Rs 100 by the State has been delivered in equivalence to an Rs 30 service due to multiple levels of subcontracting. Evidently the State experiences an inferior quality product delivered in spite of paying a premium amount for the same.

The project champions need to envisage this scenario proactively in the Planning phase and draft reasonable guidelines/norms in the RFP/contract. In accordance with the scope of e-Governance implementation; the State/Department need to perform due diligence as to how many layers of subcontracting can be permitted. Unless deemed necessary, the State can choose to avoid any subcontracting at all depending upon the Geographical scope, project anatomy, and environmental characteristics. In cases where subcontracting cannot be avoided; the Primary System Integrator should be the Single Point of Contact for the State. Under no circumstances; SIs should engage the State/Departments to deal with the subcontractors. The State would hold the primary SI responsible for any deviation committed by the subcontractors and may penalize accordingly. The SIs should be mandated to guarantee uninterrupted and consistent service quality benchmarks and seek approval from the Department in lieu of appointment of any subcontracting agency. The State /Department would not be dependent or liable to honor any financial transactions committed by the primary SI to the sub-
contractors. All such commitments between the SI and third party contractors would be deemed as their internal affairs where State/Department has no concern/jurisdiction.

2.2 RFP/Contract- Interpretation & Adherence

A Request for Proposal (RFP) is an invitation for suppliers, often through a bidding process, to submit a proposal on a specific commodity or service. (Blake & Bly, 1993)

This document contains:
1) Project requirements including Service levels, Implementation plan, Functional & Technical and Hardware requirements
2) Terms and conditions
3) Legal terms governing the contract between procurement entity and the selected vendor

It has become a standard industry practice by System Integrators and Consulting firms to propose superior resources (human & infrastructure) in the Technical bid but deploy mediocre supplements during the implementation stage for e-Governance projects. The RFP/Contract are considered as a single source of truth but it has been observed that SIs/Consulting firms/vendors typically interpret the clauses in their favour to realize unreasonable advantage (Ujaley, 2016). The final resources that are deployed are no way close to the proposed list. Resources are replaced without taking necessary approval from the Department. The client facing team can somehow be deemed acceptable but these Services firm maximize their profits by deploying below par less experienced resources in the backend group. Due to scarcity of Domain consultants, the deliverables submitted by System Integrator are of extremely low quality. When challenged by Department, SIs tends to suspend work and demand additional compensation for augmentation of resources (Khan & Srivastava, 2014). Further, physical infrastructure at end locations viz network equipment, desktops, printers etc. are also of an altered make and model vis-a-vis agreed in the Contract resulting in huge opex cost during Operations & Maintenance stage.

It is there very important to ensure clarity of RFP/Contract clauses to avoid future litigations. Multiple checkpoints and monitoring unit should be activated that spans from the Central to bottom of the pyramid i.e district level. These monitoring units operating at ground level need to be educated and empowered with basic project management skills so that issues are reported & escalated in a timely frequency. The State/Department also needs to be sensible during the procurement stage by quoting requirements in line with their business necessity; so that vendors/SIs is also benefitted in the process. If the demands are unreasonable then the SIs (in pursuit of winning the Bid) might promise something that cannot be fulfilled; resulting in a ‘deadlock situation’ during later phases. Hence the State/Department need to be extremely cautious during the technical and financial bid evaluation stage in order to ensure that bidders are neither ‘under quoting’ nor ‘over quoting’ for any service or product.

2.3 Original Equipment Manufacturer (OEM)

OEMs (Original Equipment Manufacturer) have an obligation to ensure uninterrupted supply of committed physical infrastructure at project sites. Depending upon the sanctity and assurance of this agreement between the OEMs and SIs; contract is awarded to respective party during the Bidding process. However OEMs do not shy away from dishonouring this agreement in cases where they are threatened by external environmental factors having a direct impact on their margins. A very common example of the same is observed during the exchange rate fluctuation in global economic scenario (Kandil and Mirzaie, 2003). During the Procurement stage, the hardware & software is priced in accordance with the current/on-going currency (dollar) valuation. Further at the time of delivery if Global market undergoes appreciation in currency values then the OEMs try to pass on this loss to the SIs; who in turn transfers the same to their respective Government clients. It may be noted here that the SIs/OEMs will never transfer the profits to their clients in case of currency fluctuations in their favour; however they expect the clients to bear the brunt in unfavourable situations. In other cases, it is also observed that SIs request Departments for a change in make and model of original OEM product; because the products of make & model that was agreed in the contract have reached ‘End of Life’ and an upgraded/substitute version is only available in market. (Khan & Srivastava, 2014).

Rational observation of the above situations says that global macro-economic situation is unpredictable and most of the clients have a responsibility to support the vendor partners/OEMs from excessive burden. At the same time; Departments need to ensure that they are seeking undertakings from the OEMs and SIs during the award of contract to ensure these deviations are minimal. In cases where the products need to be substituted, a superior version should be offered with null/negligible price difference. The guaranty/warranty clauses need to be appropriately reviewed to avoid any litigation during the Operations and Maintenance phase.
3 IMPLEMENTATION & SOLUTION DEPLOYMENT

3.1 INTEGRATION & INTEROPERABILITY

Integration of Government Departments/functions is gaining traction due to the focus on reducing data duplication and simplification of public service delivery gateways. Depending upon the feasibility and business need, Department need to choose between COTS and bespoke technology alternatives to facilitate such complex business processes integration. The respective Departments need to collaborate and reach to an agreement regarding the Data, Infrastructure & Human resource etc. sharing models (Goldkuhl, 2008). If the project chooses to avail COTS product; then a detailed study needs to be conducted to understand the feasibility of the offered functionalities vis-à-vis Government Business process under consideration. Some of the Government units also apt to reengineer their business process to align with the product functionalities and transform their public service delivery mechanisms. In most of the e-Governance projects, the COTS product has to undergo significant level of customization to meet the Business need. This would encompass not only technological handshake but a cultural integration as well (refer chapter 3 on Integration and Interoperability – Standardisation is the Key). State Data Centres, reusable software components, NSDG, SWAN, e-Mission teams are steps in the right direction to build a congenial platform for promotion of integration initiatives.

3.2 Requirements Overspill

The State/Department need to be careful while outlining the scope of any e-Governance implementation (refer Project management in e-Governance. report by Grant Thornton). Integrating a myriad of Business functions within a single implementation is a magnificient vision but can be a trap if not planned meticulously. It is commonly observed that Departments go for a big bang full-fledged e-Governance implementation and fail to achieve even the basic outputs and outcomes in the process. The requirement gathering phase should be structured meticulously in order to capture the priority objectives and avoid too much customization. Each of the requirements should be clearly documented and signed off periodically to avoid any scope creep and subsequent delays. In case of mammoth scope, the project should be phased accordingly without congesting all the project requirements in one single release. It has also been observed that Departments sometimes prolong the signoff process of technical documents like Business Requirement Specifications, Functional Requirement Specification, Technical Requirement Specifi-

3.3 Network Connectivity Infrastructure

Network connectivity at end locations is the backbone for supporting e-Governance projects. In a developing country, most of the network service providers do not have the desired level of regional coverage. Further, both leased line and wireless networks come with own set of prominent challenges; especially in remote regions. Service providers like BSNL who have penetration and coverage in remote locations are flooded with service requests. Some of remote locations experience service availability once in a day or week. Maintenance of routers, switches, LAN cables etc. is another major challenge. Many projects like ‘Crime & Criminal Tracking & Networks System’ have resorted to offline mode of the application as an alternative solution to maintain service continuity. With the implementation of SWAN and other initiatives; these primary networking issues need to resolved (Rao, 2004). A backup network aided with streamlined maintenance cycle is needed at all Government bodies to avoid any service disruption. Considering the impact of network failure, strict adherence of the SLAs is expected from the Service providers.

3.4 Digitization & Migration Framework

In the first phase of e-Governance adoption, most of the Government units aspire to start the journey by digitization of their respective department’s records. Considering the scale of services delivered to the masses on a daily basis; it as an extremely lengthy procedure to convert the existing records into its digital equivalent (Dilmegani, Korkmaz & Lundqvist: 2014). Further, the physical condition of the paper records makes it even more challenging to decipher the content. In states, where government records have already been digitized in the past; a new e-Governance implementation would impart that the old records need to be migrated from the legacy applications to the more recent ones. It is very important to ensure that the exact paper content is being replicated into the system without any error. Since most of the digitization personnel are external parties having a very limited understanding of Government functioning; hence a domain expert from Department must be present at Digitization centres to help decipher the terminologies and content. Multiple levels of data verification must be performed to minimize the possibility of errors .The Department might choose to digitize records spanning between a particular time frame. Due measures need to be taken to ensure data security because in most cases third party vendors are hired by Department/SIs and the technical infrastructure viz. desktops, storage etc is deployed by these...
third party agencies/subcontractors. Department must ensure that these agencies are not allowed to store any data permanently as it would violate the data protection commitment of the Government towards the citizens. The entire digitization activity should be performed under the supervision on Department’s ‘Digitization In charge’ for that particular center. The Digitization In charge should also be responsible for resolving issues at site and report daily progress of the activity. During the verification activity, systematic approach should be adopted for data analysis and the SI should not be burdened by rejecting the entire data set in case of minor errors which can be easily corrected; SI should be given due opportunity to cleanse the data wherever possible. The roles and responsibilities of Government vis-à-vis System Integrator in case of sub-contracting as already been explained in the earlier sections.

3.5 PMU - SI – Department: Internal Dissention
Consulting firms are hired by the Department to lend technical expertise & facilitate/streamline the Project Management activities (refer spicemen for CCTNS project by NCRB, GOI). They are expected to manage/monitor the project progress and report to Department in case of any deviations. The hired consultants who constitute/represent the ‘Project Management Unit’ are responsible and answerable to department if they fail to track/report any existing lacuna in the project. Subsequently, these Project Management Units deviate from their primary responsibility of facilitation and transform into ‘Fault Finding Investigation Units’. There is always a tussle between Consulting Firms and SIs during the lifespan of the project. The Department personnel who are in charge are under constant ambit of financial audits by duly appointed Government bodies; hence they choose to abide by the consultants advice in most cases. Therefore the focus shifts from the original intent of ‘implementing the project’ to ‘scrutinizing the performance of the SI/vendor ’. In order to avoid this situation, Department should ensure to link the payments of the Consulting firms with the project milestones (as in the case of SI); however due precaution should be observed to ensure that there is no unethical handshake between the SI and Consulting firm for their menial benefits. Further, Department need to appreciate and respect the SIs as their vendor partners and should refrain from choking them in difficult circumstances. In a PPP model, Government bodies are expected to relax its bureaucratic culture and leverage upon the best practices (service delivery models) offered by the private industry partners.

4 LEGAL FINANCIAL/PAYMENT MODEL

4.1 Fund Utilization & Payment to System Integrator
Although, substantial funds are pumped into e-Governance & modernization initiatives by respective Ministries; yet the low fund utilization status in most of the states signify that the funds have not been disbursed into pre-allocated heads due to stringent payment terms imposed by the Government units on the vendor partners. In the last 10 years, most vendor partners have undergone substantial pressure and some of them have even distanced themselves from Government line of Business. As a result, many e-Governance projects go for retendering due to the less number of bidders. The payment process is a cumbersome which takes months and sometimes years to seek the necessary approval in the bureaucratic chain. In the absence of ‘liquid cash’, some vendor partners/SIs is even forced to quit the project implementation and thus undergo huge losses in the process (Ujalej, 2016). Some of the vendors are further blacklisted on grounds of non-performance by respective State/Departments which imply that they will succumb to unfavourable risk of ‘negative market reputation’ in their other line of businesses too. On the other hand, a glimpse of corruption can also be noticed as each signoff authority expects some favours before they provide their consent/approval. It is also observed that centrally driven project witness more success as compared to the State implementations.

4.2 Legal Payment & Penalty Clause
Most e-Governance projects prefer fixed bid concept vis-à-vis Time & material model. The stringent financial clauses imply that payment could be initiated only after successful completion of a major milestone (refer Response to prebid queries in E-Office project, Rajasthan Govt). Consider a case where the SI is expected to deliver desktops at 1500 Police stations of the state; going by the clause if SI fails to deliver even one desktop in any single police station then the entire payment could be stalled. Further, too many ‘Show Cause’ notices and penalty clauses does not help the cause either. The need of the hour is a ‘pro rata mode’ of payment which means that the SI is paid immediately for the quantum of work accomplished. The existing projects can switch to this model if they find that their SIs is reeling under the stringent payment clauses specified in the contract.

5 GOVERNANCE & MONITORING

5.1 Project Management Framework
The knowledge of project management concepts is ex-
tremely low among officials constituting the e-Government Project team (Shah, Khan & Khalil :2011). Barring a few departments/projects such as Engineering and Irrigation -Government projects cease to follow standardized project management implementation frameworks. Project progress is monitored between one meeting to another and the tasks listed between the projects ‘Steering meetings’ are only undertaken on priority. A structured ‘Governance mechanism ‘& ‘Escalation Matrix’ need to be established for immediate resolution of issues. Monitoring teams need to be established at Central, State, District levels; these teams should be leveraged with modern project management technology suites and required technical expertise. These teams should be further accountable to any quality deficit or deadline failure. The monitoring team at different level should meet frequently to monitor the progress and report risk/ issues pertinent to the project.

5.2 Technical & Financial Evaluation

Technical and financial evaluation is an important gateway that determines the success/failure criteria of e-Governance projects. Most of the time there is negligible difference in the technical and financial proposal of the bidders; hence they resort to ‘street smart’ ways of fine-tuning/interpreting the RFP criteria to gain edge over the competitors. It may be noted that these measures might not be deemed unethical as they fall (abide) within the RFP clause/requirements without violating any terms and conditions. Let us see an example- It is becoming a common practice of the SIs to quote the hardware with an escalated cost in comparison with other enabling factors such as software customization, data digitization, Training, Change Management etc. Now according to the Contract clause, SI will receive bulk of the payment on the basis of hardware delivery & commissioning only and other associated activities mentioned might languish. Thus the SIs tries to minimize the risk by allocating high prices for less risk items such as hardware delivery and commissioning; and quote less price for complicated activities viz software customization, data digitization, Training, Change Management etc. Such an agreement might increase the risk of SI leaving the work incomplete in the middle of project execution after receiving bulk of the payments.

5.3 Intra Department Project Awareness & Change Management

Injazz J. Chen, Karen Popovich, 2003 mentioned about the three pillars of Business Transformation viz. people, Process & technology. We have to understand the fact that technology is just an enabler and the primary duty/purpose of the Government departments is to deliver public service. A survey conducted by IBM (Making Change Work Study: Continuing the enterprise of the future conversation from IBM Global CEO study, 2008) highlights the fact that changing organizational culture, mindsets & attitudes is the biggest challenge during the course of the projects. The task becomes even more challenging if we add factors such as shortage of manpower, lack of skilled resources, bureaucratic and complex governance culture. In some cases, the officials pose huge resistance as they have apprehensions about the change; in other cases they are threatened by the refined, transparent and non-bureaucratic ways of working. Top leadership commitment, employee engagement, honest & timely communication are the key factors to instill positive culture of change within the Department. These need to be complimented by efficient training programs/workshops and adjustment of performance measure for successful delivery; monetary and non-monetary benefits also show positive results in some cases. Handholding support is provided at few places (E-District, Passport Seva & CCTNS Projects) in order to acquaint the officials with transformed mechanisms/channels of public service delivery. The identified personnel’s for training also know as ‘Change Agents’ need to be taken into complete confidence as the Department’s adoption of the change largely depends upon the word of mouth imparted by these change agents. Appropriate infrastructure arrangements need to be facilitated for such training programs as these are the initial forum where Department officials get a first-hand view of the things to come.

5.4 Measurable & Quantifiable Milestones/KPIs

KPI determination is the basis of setting milestones in a project. The November 1981 issue of Management Review journal contained a paper by George T. Doran which coined a term called S.M.A.R.T. way to write management's goals and objectives. The milestones & KPIs are interlinked to the payment schedule so each parameter should be clearly elaborated to avoid any misinterpretation. The performance criteria & SLA need to be specifically outlined to set benchmarks accordingly. All the project stakeholders need to be duly educated about the relevant KPIs; further they should be communicated about the progress of each parameters in due course of time. Departments should refrain from constraining the SIs for non-achievable KPIs.

5.5 Implementation Closure & Transition management

Typically the SIs is obligated to execute the operations & maintenance for 2-3 years before complete handover to Department. Cases where in depth level of technical expertise is deemed necessary, Department may choose the same or different vendor to continue the operations.
State/Department not only needs to ensure a safe technical transition but also smooth legal & financial closure with the existing vendors. The State needs to prepare a transition plan wherein they focus on the stability of the systems in the first phase; service improvement in the second and resource optimization in the last phase. A comprehensive checklist encompassing staffing requirements, knowledge transfer, risk assessment, quality management, etc. need to be adhered and accomplished for a successful closure. The guaranty/warranty clause should be relooked and special provisions need to be made regarding data transfer/protection. Finally, questionnaire and surveys may also be initiated among the target audience to determine the impact of project and identify the areas of improvements.

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