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E-Tools in Construction Management: Dissemination of the Report

{Minutes of Workshop held on March 06, 2014}

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INTRODUCTION OF E-TOOLS IN MANAGEMENT OF CONSTRUCTION PROJECTS – Dissemination Workshop

06 MARCH 2014, THE WORLD BANK

Background

The infrastructure sector has seen unprecedented changes in India with exponential growth due to changing economic landscape and development in the country. Massive investments are required to be made across a range of sectors like power, ports, roads, railways, health, education and aviation. The complexity and scale of these infrastructure projects has increased significantly and a typical project now takes anywhere from six to ten years to complete.

Against this backdrop, there is a renewed focus and attention on project management of construction/ infrastructure projects. The World Bank commissioned a study in early 2013 on introducing and enhancing the use of IT based interventions/solutions in the management of construction projects and programs to enhance efficiency, transparency and governance in delivery, thereby increasing their success and impact potential. The study concluded with a guidance note which targets implementing agencies and project managers with practical steps on adopting e-tools and how e-tools can contribute to improve construction project management and delivery. Building on the study, it is acknowledged that implementation of e-tools in infrastructure project can be promoted through address knowledge and information gaps.

Objective

The World Bank and Department of Economic Affairs (DEA) organized a workshop in order to disseminate the guidance note information among implementing agencies and to promote use of e-tools in the management of public sector infrastructure projects in India.

About 70 senior management staff of implementing agencies from across India and sectors including transport, urban development, housing, energy, rural development and water supply department attended the workshop.

Key Messages

The first session involved a presentation on the background and context to the initiative. The presentation was led by Rajesh Rohatgi from The World Bank. The presentation covered the rationale for improved project management capacity in public sector infrastructure projects and the need for readily available and consistent data and information given the changing nature of the construction industry which is now seeing larger, complex projects with longer durations. The industry faces major cost and time overruns and the reasons include poor quality supervision and manual record keeping. This was followed by a presentation by Mr. Sanjay Saxena, Consultant to The World Bank on the e-tools guidance note and the benefits of adopting ICT solutions in construction project management and how one should go about implementing these reforms in an implementing agency. The main messages from the keynote addresses are as follows;

Address by Nilaya Mitash, Joint Secretary, DEA

- Important to consider direct and indirect costs of projects. The latter is the opportunity cost of not implementing, the project in time. Such costs are huge
- Skill gap; There is a need to enhance skill base in the Indian construction industry. Even big contractors are not able to deliver on time and do not follow international project management standards. This is an opportunity to promote such standards and if this is implemented locally, there is a long term benefit where Indian Construction companies can become internationally competitive
- Project management issues are particularly pertinent in transport and energy sectors
- There is also a need to enhance transparency and openness with a view to bringing public systems into good light. Many public sector initiatives carry negative image due to lack of openness in sharing information and data.

- Message to the participants – adopt a proactive approach. It is important to diagnose the problems facing projects, engage with partners and adopt a proactive path to addressing them
- **Address by Onno Ruhl, The World Bank Country Director**
 - World Bank and DEA has work closely to adopt E-Procurement and there is still a need to move beyond to adopt e-project management
 - E-Tools are beneficial for project management. However it is important not to create parallel systems by adopting ICT path. Secondly it is important to start simple, pilot e-tools before scaling up and abolishing existing systems
- **Address by Rajesh Bhushan, Joint Secretary, Ministry of Rural Development**
 - Rural Connectivity in India project to develop 600,000kms
 - Dynamic systems – To recognize that projects and systems are dynamic and to allow flexibility to evolve over time
 - Disproportionate focus on data availability and not sufficient emphasis on data visualization and analysis
 - Integration; It is important that systems integrate with overall structures and not continue to serve as standalone modules
 - Eg. POMAS submodules – quality monitoring /smart phone based application from the site however, state quality coordinator not in a position of visualize what the monitors are doing
 - Important to engage field supervisors and get buy in at the junior level - ability of field supervisions eg assistant engineers to utilize system will require added attention

Main Discussion Points

Following a presentation of case studies and live demonstration of e-tools systems operational in the construction project management field, the following key discussion points were covered among participants;

- **Gaining acceptability within the organization.** Gaining acceptability at all levels is critical including from top management to junior level. Accessibility is challenging given the resistance to change and the failure of failure among staff. One of the success factors for the web-based project management system of Karnataka Police Housing Corporation was the acceptability of the system. One option to achieve this is to secure funding. When financial aspects are taken care of acceptability increases. To gain contractor acceptability, the RFI Application in Odisha Works Department showed that they were able to gauge contractor interest by demonstrating that the system was designed to benefit the contractors. Demonstration of success is also important. Lot of activities has become e-tool based but in construction, there is not sufficient evidence that e-tools benefit.
- **Risk of information overload** from new systems has to be managed in e-tools implementation.
- **Legality of online information** – in most places where online systems are in place, there is no conflict of online information and their acceptability by AG. For example in Orissa, online information from the RFI application is accepted. Furthermore IT Act 2000 ensures that all electronic documents are deemed legal in a court of law.
- **Connectivity and server capacity** – for most systems depending on scale, location of server is not important.
- **Scalability** – it is important to look at scalability of systems for the long term
- **Capacity Constraints** – turn over or transfer of staff affects capacity building initiatives. Training is critical for engineers as well as contractors if external engagement is necessary. Karnataka Police Housing Corporation emphasized the importance of training and retraining engineers given their lack of familiarity with ICT. Similarly to engage contractors time for training and use of the system, these terms have to be incorporated to their contracts.

Lessons and Recommendations

- **E-Tools can transform construction management and operations.** For example, following the web-based project management system, the Karnataka Police Housing Corporation increased its operations to INR 60 million to 2200 million. Similarly in BBMP, revenue doubled once the ICST system was in place. Similarly efficiency gains are evident from the RFI Application in Odisha Works Department where 18 steps were reduced to 4-5 steps such as that in motion, transportation, waiting etc.
- **Pilot first and then scale up;** for example in the system was developed part by part based on requirements and fitting modules in as the process developed. A gradual process helped to gauge the unfamiliarity of developers working in the construction industry and engineers adopting IT systems. Similarly, the RFI Application in Odisha Works Department relates to Works only, it can be upgraded in the future to include other aspects such as disputes. At the same time it is important to keep in mind integration from day one.
- While acceptability important at all levels including at the level of junior engineers, the agenda of reform or **change has to be driven and prioritized at the top management level.** Unless this is established, the project management and supervision teams will not have time or the interest to devote to reforms as day to day routine work will keep them occupied. It is also critical that strong planning is done for an initiative of this nature and to get organized as much as possible. One lesson from Kerala Water Supply Projects is that e-tool integration is prioritized from the very early stage when project proposals are developed these aspects are incorporated.
- **COTS vs Bespoke** – no finality in selection of COTS or bespoke tools but it is important first look for COTS and if available adopt COTS. Depending on the context, the most common path could be a hybrid solution.
- **Build In House vs Outsource** – it is better to outsource especially if in-house capacity is not there. In-house capacity can be mobilized to maintain and upgrade.
- **Procurement** is a key success factor for e-tools implementation. If the terms of reference and specifications are solid, the procurement process can be smooth and the room for disputes or conflict with contractors is small. Procurement capacity can be strengthened by taking the following steps
 - i. Identify taskforce – young engineer can be engaged to identify the gaps and to work with IT and procurement teams to develop a strong scope of work
 - ii. Hire IT consultants and or use existing procurement information and standards followed such as that on The World Bank website
 - iii. Contact the agencies demonstrating the systems at the workshop today
- **Participants endorsed the draft guidance note and there were no comments**

- Participants suggested that a continued Technical Assistance from the World Bank in terms of availability of a IT consultants would be very helpful to implementing agencies who would like to pilot e-Tools in their projects/organization.
- Participants suggested DEA to make use of IT based supervision system mandatory while posing new projects to multilateral organizations.

All presentations of the workshop and the guidance note can be accessed at http://tscpl.com/?page_id=3901