Project Management and Control Assignment in PDF

Module Code: ENGM91

INTRODUCTION

Project management has been an important practice in organizations since the inception of an organised system of completing tasks. Project managers need to make sure that employees are able to work efficiently and effectively on projects; they need to guide employees, direct them and assess their activities. With the advancement in technology, there have been a lot of tools available to manage projects in organisations. Communication, which is vital for project managers, has become very easy with the use of the latest technology. This has also increased the work pressure as managers and other team members have to be connected via mobile technology all the time. This paper discusses various ways in which the use of technology has impacted project management.

CONSTRUCTION PROJECTS AND THE USE OF MOBILE AND INTERNET TECH

As of late, construction project information management has enormously profited from advances in information and communications technology by expanding the speed of the information stream, upgrading the proficiency and viability of information communication and diminishing the cost of information exchange (Chen, Y., and Kamar, J.M. 2011).

The advances in moderate mobile devices and the expansion in wireless network system transfer speed, imply that mobile technology has an incredible potential to enhance construction project information management.

PROBLEMS IN PROJECT INFORMATION MANAGEMENT

According to (Chen, Y., and Kamar, J.M. 2011), there are numerous research endeavours that emphasis on the design, development and practices of construction project information management, for example, Electronic Document Management; Knowledge Management Systems, Web-based project management systems and collaborative systems.

Information technology has been generally connected at distinctive information management levels in project management. Nevertheless, some project activity happens on locations where workforce experience issues in accessing routine computers. Project managers and project engineers move much of the time from the project site to site and from office to sites. It is regularly not convenient to convey massive drawings and records to project sites. The timing, the amount and quality of the project information could hinder the success of the project. However, transferring and exchanging information on project progress were basically in paper-based files and tasks which slow down the processes of delivering just in time information and sometimes gets clogged and constitute information deficit.

PROJECT PLANNING AND SCHEDULING

Project scheduling is a useful tool for managing projects. Construction projects rarely proceed as planned, and as well expect some deviation from the baseline schedule, so to know where, how much, and why, to take appropriate action whenever and wherever is needed, the project manager needs to understand what tools is relevant to this project phase.

There are many construction project management tools available in the market these days. Wrike is one of the construction project management tools that helps in building teams within the system and connect people from various areas to work on Wrike. A project manager can assign various subtasks to team members and team members may be from remote areas but they work together on a project (Wrike: Getting Started, 2015). In a globalising world, project management tools like Wrike helps in building and managing teams from various areas. Wrike is one of the basic tools for individuals and majorly helps in scheduling, collaborating, tracking and managing the projects on a cloud system. It is a cost effective, and typically for startup, small, medium and large businesses, and also supports mobile technology with great user experience.

With advancement in construction projects, priority can be increased or decreased. Security is a major concern in project management, especially when the work is carried out on a system like cloud computing where resources are shared among several stakeholders.

In such a way, there is a wide range of project management tools available in the market. Project managers can choose the tools according to their requirements and manage projects. Managers with a different number of team members opt for different kinds of tools. Each project is one of a

kind regarding the issues that emerge, the needs and resources assigns its environment in which it operates, and the project manager's state of mind and approach used to direct and control the project activities (Maserang, 2012). Therefore, the availability of a large range of tools helps managers to choose the right kind of tool that suits their project and style of working. The project management tools like Wrike are very flexible; they provide different kinds of functionalities according to the requirements of users.

With a lot of options available to project managers to carry out various projects, with the help of technology, project managers have to consider and analyse all the options critically to stay competitive and efficient. For example, with advancement in technology, it is now possible for companies to outsource products and services. There are times when cheap labour or services are available in different areas of the world. Project managers have to establish a system to in-source and outsource the services and work to stay competitive as many companies are indulging in outsourcing these days. Communication tools have made it easy for project managers to go out of boundaries and carry out projects in an effective and efficient manner (Marvin, 2013). With these facilities, it becomes important for project managers to ensure that legal and ethical issues are considered while going global. Different areas of the world have different rules regarding labour, all the rules and regulations should be fulfilled. Ethical policies of the company should be practiced in all the areas of working.

PROJECT EXECUTION

When the project moves into the execution phase, the project team and relevant resources to execute the task ought to be set up and prepared to perform the project activities. At this point, the project manager is responsible for putting in place an appropriate channel to communicate the project progress to the stakeholders and the project team, because these groups of participants will expect to see and discuss the project progress at any given time.

TASK MANAGEMENT FRAMEWORK

The project on location management framework plays a vital part in continuous task management for the project teams (Kim et al. 2013).

The task management technology enables the project manager to allocate tasks to project engineers utilising a mobile technology; for example Toodledo, this standalone application synchronises with Toodledo.com sharing lists across devices. It does track the priority of the project; project start date; project due date; project time; project length and status of the task; organising tasks; view task on a map and get proximity alerts when you are near a location where you have tasks to carry out. This project task management application is compatible with Android, IOS and Windows devices, showing how mobile and internet technology has changed the way project managers work and manage projects today.

PROJECT MONITORING

Understanding the present status of the project's progress is entirely fundamental for project managers to accomplish a successful project management. Previously, project progresses were normally obtained through going by the project site, putting pressure on the project managers and engineers. And now, mobile and internet technology gives enhanced accessibility of project progress and information by connecting mobile to a data server via the internet (Kim et al. 2013).

The mobile technology for project monitoring and information obtains data from two distinct sources. For example, the primary source is information from the head office where data are being stored in the database server and the server is connected to mobile devices through the wireless local area network; along these lines, project managers and engineers can without much of a stretch recover and examine the project progress and information when needed.

PROJECT MATERIALS TRACKING

Decision-making in real-time is an essential part of most construction projects, and requires effective supply network visibility, estimate accurate progress, and dependable material tracking (Shahi et al. 2012).

As a result of the extensive volume of materials and the quantity of workforce in construction projects, real-time decision making gets to be an essential aspect for a successful on-site management. Precise, reliable and regular information about the location of workers, materials and equipment can help the project manager to make decisions based on the project condition. Generally, the project progress in construction is tracked utilising broad manual information

collection, and these processes are work escalated, costly, and potentially contain inadequate and wrong data because of their traditional reporting approach. The Frequency Identification Devices, Global Positioning Systems, and Ultra Wide Band System highlights the usefulness of real-time location and project materials tracking mobile technologies which enable project managers to effectively plan and control complex construction projects that require material tracking for effective visibility of supply and accurate project progress estimation.

QUALITY INSPECTION

An effective and efficient quality management is required at the point when endeavouring to finish projects with project deadlines and budget (Wang, L. 2007). With the coming of the internet, mobile technology information management have encouraged information conveyance and sharing among project teams. Project managers and engineers require access to project record-based quality test reports to enable them to test for quality and conditions of the projects in laboratories. The current practices for tracking and managing the quality inspection in laboratories uses paper-based documents, in which sometimes is unreliable for managing quality inspection results. In this case, mobile technology and internet plays a noteworthy role in effectively controlling and managing quality inspection in construction projects, most especially by enhancing communication and coordination among the project team (Leung at al. 2008).

The Radio Frequency Identification (Scanning and data entry mechanisms) and Personal Digital Assistants (PDA) can enhance the viability and convenience of information stream in quality inspection management. It is a simple and user-friendly framework for managing and assessing quality data for construction projects.

EFFECTIVE COMMUNICATION

Communication is one of the most important activities for project managers. It is important for project managers to communicate with team members regularly to ensure that the projects at hand are progressing according to the plan. There are times when team members need assistance from managers regarding completion of a particular task, at such times, managers need to communicate with employees and resolve any kind of issues. The research paper by Project Management Institute (2013), mentions that the most important achievement factor in managing projects is effective communication between the project team and the stakeholders. In a

complicated and competitive business atmosphere, organisations can't afford to ignore this key component of project achievement and long-term benefit (The High Cost of Low Performance, 2013).

Modern technology has revolutionized the communication in today's world. It is possible for project managers to communicate through video conferencing, conduct virtual meetings, stay connected via social media and get reports about projects very easily. The world is globalizing at a fast rate and managers need to communicate with employees working in different nations (Sheoran, 2012). In such a scenario, utilisation of technology is the only way to communicate effectively and ensure that projects are commencing according to the plan.

AVAILABILITY OF APPLICATIONS

Applications such as Google Drive/Dropbox help in providing documents to all the team members in one place, as it was recommended for our Sodor group project. All the members of the team have to work together on projects and they need to share documents regarding the progress of projects and guidelines of the project. Cloud computing has come up as an important technology to help project managers share resources with all the team members. A high quality cloud based system successfully delivers a required project within scope, time and budget. It is the project manager's responsibility to creatively adjust to the challenges demanding for project quality, time and cost of resources, keeping in mind the end goal to have the capacity to deliver the project as planned and within the budget (Pocatilu, 2010).

Cloud computing can be used in organisations for several benefits such as reducing costs, increasing efficiency by sharing resources and improving accessibility. With the use of cloud computing, limited sources of an organisation can be utilised efficiently because the system is centralised. The software and applications residing on cloud can be used by all the teams which saves the cost of licensing. Shared storage is used in cloud computing, the storage is dynamically allocated to users so as to increase efficiency and avoid wastage of memory. In a similar manner, all other resources are allocated dynamically which avoids unnecessary blockage of resources and increases accessibility.

AVAILABILITY OF INFORMATION

With the availability of Web 2.0 technology, which allows the project team to interact and collaborate through social media platforms in a virtual environment, project managers are able to access and share information within the project team. The technology is changing at a fast pace and it is changing the ways of working, project managers need to be updated all the time and ease of accessing information helps them in staying updated and adopt new ways to develop projects.

Project managers are able to access information about how their competitors are performing and what practices are being followed by competing companies through the mobile and internet technology which gives an idea about the trending market activities and ways to improve management at the workplace. Therefore, ease of accessing information play an important role in project management and staying updated about market trends.

POTENTIAL ISSUES OF USING MOBILE AND INTERNET TECHNOLOGY

Mobile and internet technology have surfaced as the most attracting tools to enhance information accessibility, increase operational efficiency, and improve management efficiency (Son et al 2012). In spite of the growing enthusiasm for mobile and internet technology in the construction industry, there are securities, technicalities, compatibilities and ethical issues that must be considered to ensure a successful implementation of the mobile and internet technology in the construction projects.

SECURITY

Security is a huge matter of concern in technology-oriented world. Cloud computing has played a major role in making projects efficient by sharing of resources. However, it comes with the risk of security. Cloud computing shows an included level of danger since fundamental projects are frequently outsourced to the third party, which makes it harder to keep up information security and protection, support information and project accessibility, and exhibit consistence. Cloud Computing influences many technologies like Service-Oriented Architecture (SOA), Virtualization Technology, and Web 2.0, and also obtain their security problems (Hashizume, Rosado, Medina, & Fernandez, 2013). It is not always a good idea to blindly trust all third parties with private documents and resources of the company. Privacy breach may lead to lose of

business, credibility or result in legal issues. Therefore, technologies like cloud computing lead to lack of control of managers over resources, which poses serious security threats.

TECHNICAL ISSUES

Technological tools are highly dependent on the uninterrupted functioning of hardware and software. There are times when equipments fail to work properly and projects cannot be executed as per schedule, and also considering the additional cost of fixing technical issues. For example, a meeting of team members residing in different parts of the world may halt because of breakdown of hardware at one or more places. DNS failure is another common issue faced by companies working with teams at diverse places. A DNS failure could be the direct result of both hardware and software vulnerabilities and may be impacted by man-made deliberate, man-made unintentional, and natural threats (Information Technology Sector, 2011).

COMPATIBILITY ISSUES

Different software, applications and management tools require particular type of hardware to be installed by host, in order to function properly. The equipment may not be installed by one or more stakeholders (Vasistha, 2008). Also, too much dependence on information technology mandates that all the stakeholders should be proficient to utilize the technological tools. Therefore, there are many compatibility issues associated with technology.

ETHICAL ISSUES

With diversification of team members, project managers lose control over activities. There are times when organizations consult third parties to get involved in projects and complete several subtasks. The subtasks may not be completed ethically. Companies are able to apply their ethical policies in particular regions but technology has made the projects to go beyond boundaries and it has resulted in major ethical issues. Paradigmatic changes in technology and the application of ICT, creating new opportunities, but also new dilemmas over communication, surveillance and privacy. (Rose, 2007).

FUTURE PERSPECTIVE

The future certainly belongs to technology. Project management is going to be including a lot more technological tools as compared to the level of technology utilization in today's scenario. Companies are facing the issue of technology compatibility. There are several training programs being carried out at organizations to ensure that employees are able to utilize the technology efficiently (Vermaat, Sebok, & Freund, 2015). Project managers are made responsible to ensure that all the employees are technology competent. The issue of incompatibility of hardware and software is being resolved by major organizations in technology field. Organizations are trying to come up with standardized system of hardware and software.

Privacy is a great matter of concern for organizations as resources are to be shared very frequently. Many organizations in technology field are working towards increasing privacy and security to ensure safety of private documents and resources of various organizations. There is a new concept in recent time i.e. private cloud which enables companies to restrict the availability of resources to handful of individuals. The private cloud-based system is expected to address worries on information security and offer more noteworthy control, which is normally lacking in an open source cloud-based system (Sen, 2013). The technology is being developed further and many more such technologies are expected to be introduced in recent future. Therefore, project management is going to be much more technology oriented and project managers need to be more proficient in technology. Existing drawbacks of technology are being addressed by service providers and it is expected that more effective tools are going to be developed.

CONCLUSION

The advancement in mobile and internet technology has remarkably changed the way project managers work and manage projects, benefiting from advances in information and communications technology. The technology has revolutionised the project management activities such as; easy communication with the project teams, collaboration within the team, make plans, assess progress and check efficiency. There are a lot of tools available for project management. Different kinds of tools are available for small to large organizations and managers are able to choose from a list of available options. Technology has come up with some negative aspects such as security, and it is a major concern for organisations when their work is too much dependent on technology. There are compatibility issues and breakdown of the system which sometimes result in delays and as well require additional cost. Project managers need to be

careful while using technology to high extent. Organisations working in technology field are trying to resolve all the bugs/issues and it is expected to see more effective project management systems in near future.

References

Chen, Y., and Kamar, J.M. (2011). 'A framework for using mobile computing for information management on construction sites', *Automation in Construction*, 20, pp. 776-788.

Hashizume, K., Rosado, D. G., Medina, E. F., and Fernandez, E. B. (2013). 'An analysis of security issues for cloud computing', *Journal of Internet Services and Applications*, 4, pp. 4-5.

Information Technology Sector Risk Management Strategy. (2011). *IT sector risk management strategy domain name resolution services.* [ONLINE] Available at: http://www.dhs.gov/xlibrary/assets/it-sector-risk-management-strategy-domain-name-resolution-services-june2011.pdf. [Assessed 27 December 2015].

Kim, C., Park, T., Lim, H., and Kim, H. (2013). 'On-site construction management using mobile computing technology', *Automation in Construction*, 35, pp. 415-423.

Leung, S., Mak, S., and Lee, B.L.P. (2008). 'Using a real-time integrated communication system to monitor the progress and quality of construction works', *Automation in Construction*, 17, pp. 749-757.

Marvin, K. T. (2013). *Global Trends in Outsourcing and their Impact.* [ONLINE] Available at: https://www.wpi.edu/Pubs/E-project/Available/E-project-042711-161931/unrestricted/MarvinIQP.pdf. [Assessed 27 December 2015].

Maserang, S. (2012). *Project Management: Tools & Techniques.* [ONLINE] Available at: http://www.umsl.edu/~sauterv/analysis/488_f02_papers/ProjMgmt.html. [Assessed 27 December 2015].

Pocatilu, P. (2010). *Project management for cloud computing.* [ONLINE] Available at: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.473.2785&rep=rep1&type=pdf. [Assessed 26 December 2015].

Rose, A. (2007). 'Ethics and Human Resource Management', mheducation.

Shahi, A., Aryan, A., West, J.S., Haas, C.T., and Haas, R.C.G. (2012). 'Deterioration of UWB positioning during construction', *Automation in Construction*, 24, pp. 72-80.

Sheoran, J. (2012). 'Technological Advancement and Changing Paradigm of Organizational Communication', *International Journal of Scientific and Research Publications*, 2(12), pp. 2250-3153.

Son, H., Park, Y., Kim, C., and Chou, J. (2012). 'Towards an understanding of construction professionals' acceptance of mobile computing devices in South Korea: An extension of the technology acceptance model', *Automation in Construction*, 28, pp. 82-90.

The High Cost of Low Performance. (2013). 'The Essential Role of Communication', Project Management Institute.

Vasistha, S. (2008). 'A Framework and Evaluation of Virtual Project Management Tools', University of Nebraska.

Vermaat, M., Sebok, S., & Freund, S. (2016). 'Discovering Computers, Essentials-Tools, Apps, Devices, and the impact of Technology', Cengage Learning.

Wang, L. (2007). 'Enhancing construction quality inspection and management using RFID technology', *Automation in Construction*, 17, pp. 467-479.

Wrike (2015). *Getting Started.* [ONLINE] Available at: https://www.wrike.com/tour/. [Assessed 27 December 2015].