

**PROJECT MANAGEMENT AND ITS ROLE IN
INFRASTRUCTURE DEVELOPMENT -AN INDIAN
PERSPECTIVE**

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Abstract

India occupied 60th position for the year 2013-14 in the global competitiveness report prepared by taking a sample of 148 economies in the world and in the infrastructure segment it has got 85th rank. Global competitiveness report is prepared considering 12 important pillars from the sample economies. The 12 pillars are institutions, infrastructure, macroeconomic environment, health and primary education, higher education and training; goods market efficiency, labour market efficiency, financial market development, technological readiness, market size, business sophistication and innovation. India is lagging much behind china in the global competitiveness ranking. For a developing country like India with a huge population it is the need of the hour to improve its overall ranking as well as the ranking in the infrastructure segment. Infrastructure development in any country leads to overall development of the country viz increase in the productivity or GDP of the economy, increases the employment opportunities in the economy, increases the standard of living of the people in the country. Also the central government is planning to fill the infrastructure deficit by allocating more funds in this sector and encouraging public-private partnerships from the 12th five year plan onwards. In this scenario, the author made an attempt to focus on the importance of project management and project managers in the development of infrastructure in the economy.

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Introduction

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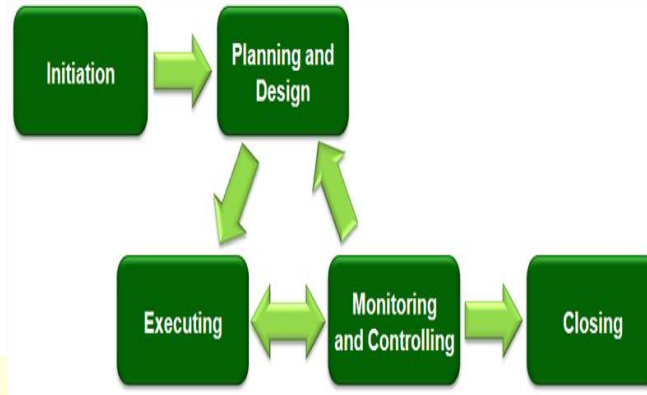
A project is a temporary endeavour. It has a defined beginning and end and is undertaken to meet particular goals and objectives which are designed to bring about beneficial change or added value. Projects are completed by teams of people who are specially chosen for their skills, knowledge and potential to contribute to the final result. The team is led by a project manager. He or she is responsible for keeping the project tasks on schedule, communicating with all stakeholders and managing resources – the people, money, tools and time needed to achieve the goal. The project manager is the centre of the project and the driving force behind the team. The discipline of project management is extremely versatile and can be adapted to any business or industry. Its strength is focused teams of experts who can quickly adapt, organise and troubleshoot, meaning that most problems can be resolved efficiently. Project management can also be described as the planning, scheduling, directing and controlling of company resources for a project which has been established for the completion of specific goals and objectives.

Project management activities

- Analysis and design of objectives and events
- Planning the work according to the objectives
- Assessing and controlling risk(Risk management)
- Estimating resources for the project
- Allocation of resources for the project
- Organizing the work
- Acquiring human and material resources
- Assigning tasks
- Directing activities
- Controlling project execution
- Tracking and reporting progress(MIS)
- Analyzing the results based on the facts achieved.
- Defining the products of the project
- Forecasting future trends in the project
- Quality management
- Issues management
- Issue solving
- Defect prevention
- Identifying, managing and controlling changes.
- Project closure(project debrief)
- Communicating to stakeholders.

Project management life cycle

The project management life cycle consists of five phases called project management process groups.



In essence the Infrastructure PM's role is the overall responsibility for the successful planning, execution, monitoring, control and closure of a project.

Project initiation- everything that is needed to set up the project before work can start.

Project planning-detailed plans of how the work will be carried out including time, cost and resource estimates.

Project execution-Doing the work to deliver the product, service or desired outcome.

Project monitoring and control- Ensuring that a project stays on track and taking corrective action to ensure it does.

Project closeout-Formal acceptance of the deliverables and disbanding of all the elements that were required to run the project.

Objectives of the study

The present conceptual paper is prepared based on the following objectives.

- 1) To understand the role of infrastructure in the development of economy.
- 2) To understand the importance and role of infrastructure project manager in the effective implementation of projects.
- 3) To present the recent findings of KPMG and PMI report.
- 4) To suggest for measures to overcome the dearth of qualified and competent professionals in the field of project management.

Infrastructure and its role in the development of the economy

Infrastructure is the network of power, telecom, ports, airports, roads, civil aviation, railways, and transportation in a country. Its importance in the development of a country cannot be over-emphasized. Infrastructure is the lifeline of the economy of a country. All developed countries have adequate infrastructure so that all the activities are executed efficiently, smoothly in time.

On the other hand, all poor countries have little infrastructure. The plans of these countries target the building of adequate infrastructure to put their economies on a high growth path.

Power is an essential input for economic development and improving the quality of life of people. Development of conventional forms of energy for meeting the growing needs of people is the responsibility of the government. In the pre-independence period, the power supply was mainly in the private sector and that too restricted to the urban areas. With the formation of State Electricity Boards during the Five-year plans, a significant step was taken in bringing about a systematic growth of power supply for industries all over the country. A number of multipurpose projects came into being with the setting up of hydro, thermal and nuclear power stations.

India at present is at the stage of becoming a developed country. With the increase in population the demand for goods and services is increasing every year. There is more demand for power to run home appliances in the increasing dwelling units as well as existing units. To meet this ever increasing demand we need to build a huge power infrastructure.

The transportation infrastructure includes roads, vehicles, railways, tracks, ports, airports, ships and vessels. Road transportation is perhaps the most important because the railway tracks cannot be laid everywhere. The roads are the means by which the movement of people and goods from one place to another is ensured. Roads and vehicles are a means through which millions of people move out of their houses everyday to reach their places of work, trade or business daily. They not only generate income from working but also fulfill the needs of others. Roads are a key to the success of Public Distribution System. If there is no road transportation, the supply of these goods will not be possible to different cities and towns. The whole economy will collapse. Railways are another important part of transportation infrastructure. India has a huge railway network with a route length of 63,221km, a fleet of over 7,800 locomotives, 5340 passenger service vehicles and nearly 5000 other coaching vehicles. There are 7031 stations across the length and breadth of the country. The total network is divided into 16 zones. Crores of passengers travel through railways for the job, work and personal needs every day. Thousands of tonnes of goods are taken from one place to another. The transportation of heavy goods like steel and raw material like coal cannot be transported by any other mode of transport than the railways. Apart from these activities, the railways are huge source of revenue for the

government. It has been playing a crucial role in generating employment to lakhs of employees directly or indirectly

Airports and civil aviation are also part of the transportation network in the country. Air travel is fast and highly comfortable. It caters to the needs of rich sections of people and the high executives and political delegates whose time is highly precious. It is also used for speedy transportation of goods, particularly the perishable goods which, if sent through road or railway transport will rot in the way.

India has a coastline of over 7500 km which is serviced by 12 major ports and 186 other ports. The major ports are under the purview of the central government while the minor ports come under the jurisdiction of the respective state governments. The major ports of India are: Mumbai, Nhavasheva, Kandla, Marmagao, Mangalore, Cochin, on the west coast; Kolkata, Haldia, Paradip, Visakhapatnam, Chennai, Ennore, and Tuticorin on the east coast.

These ports have a capacity of over 450 million tones. The number of cargo vessels handled at these ports is about 16500 per annum. The cargo handled is liquid cargo, dry cargo and container cargo. In order to improve the efficiency, productivity and quality of services and to bring competitiveness in port services, the government has encouraged private participation in it in the wake of liberalization and globalization of the economy.

Communication, mobile phone services etc have developed more than any other sector during the last one decade. The postal service is catering to the mailing services which have now been supplemented by courier services. India has a huge infrastructure for postal and telecommunication services whereby letters, parcels and messages are sent to various parts of the country and abroad. Mobile phone services plays key role in our society now. Several companies like Bharti Airtel, Reliance Communication, Vodafone are flourishing apart from the public sector MTNL.

All economic activities of the country depend on Infrastructure. Infrastructure plays a crucial role in achieving high percentage of GDP for any country. The government expenditure towards infrastructure has been increasing year by year to create this infrastructure where there is gap or where the infrastructure is not fully or properly functional. Government also focuses on establishing adequate systems for their maintenance and upkeep so that it remains efficient and durable.

Infrastructure Project Manager-Roles and Responsibilities

An infrastructure PM ensures quality delivery of the projects by managing time, cost (including resources) and deliverables. For management of these elements requires infrastructure PM's skills. The six main areas where the requirement for an infrastructure PM role becomes self evident are Business case development, Planning, Reporting (communication), Chairing project board, Work package assignment and Managing and reporting risk.

The Business case

It is the responsibility of the infrastructure PM to produce a business case that:

- Defines the objectives of the project
- Spells out the benefits of undertaking the project (will the project realise any benefits?)
- Indicates the impact of the project on other areas of the infrastructure/organization.
- Defines risk early on and offers mitigating actions to minimize the risk.
- Defines the project budget.

The business case underpins the entire project and the infrastructure PM needs to ensure that everyone has subscribed to and has the understanding of the project definition contained within the business case.

Project Planning

One of the infrastructure PM's main role is planning. Successful planning is the key for successful project delivery. An infrastructure PM should work with technical team leaders and line managers from project initiation and throughout the various project stages to ensure all outputs are defined and therefore resourced and executed correctly. Organizing and chairing planning sessions (workshops) are the responsibility of the infrastructure PM.

Reporting (and recording)

One of the infrastructure PM's prime responsibilities is reporting. The infrastructure PM needs to ensure that all stakeholders are communicated. This would normally take place via a project highlight report which is made available at predetermined intervals and reflects the current status of the project (both in terms of works completed and monies spent) as well as indicating any important future works. Any issues or risks can be communicated in this highlight report, although this would be supplementary to reporting those more effectively elsewhere. The infrastructure PM would also be responsible for ensuring technical teams produce highlight reports to reflect their progress in delivering agreed output.

The infrastructure PM would also report via the project board if this was in place, as well as an ad-hoc basis if required by senior management or stakeholders. Another responsibility of infrastructure PM is to ensure that the fundamentals of the project are recorded. Typically the infrastructure PM would be responsible for generating, maintaining and reporting on:

Risk and issues log

Project and stage plans

All reports (meeting minutes, highlight reports etc)

Communications

Effective reporting (communication) and recording are two of the most important responsibilities of an infrastructure Project manager.

Chairing project board

The potential role to be performed by an infrastructure PM is to chair any project board meetings. Not all infrastructure projects will require this project board meetings and they may be necessary depending on the complexities /status of the projects. If they are required the project manager should issue, in advance, a project board meeting agenda, he/she should record all actions agreed in the meeting and should produce project board meeting minutes for distribution to all PB members and agreed guests.

Work package assignment

Work packages define a collection of works that need to be executed to create a defined output. They are a subset of a project and multiple work packages go to create the project output. The assignment of work packages to technical teams is an important role for the infrastructure project manager. The production of quality work package is an example of where an infrastructure PM can bring real value to a project. The infrastructure PM would sit down with the technical team lead and relevant engineers in a short workshop and together they would produce a work package.

Managing and reporting risk

The projects should be delivered to the concerned parties within an agreed time frame and budget and it is a very difficult job. All projects have associated risks and it is the role of the infrastructure PM to act to manage risk and take measures to mitigate risk to the maximum extent possible throughout the project. The infrastructure PM works to create a strategy to manage the risk. The strategy includes transferring the risk, reducing the negative effect of the

risk or accepting the risk. Reporting risk is the responsibility of the PM and should be completed from project initiation and throughout the project life cycle as necessary. As well as reporting the risk, the PM should record all risks, issues and dependencies in the appropriate logs.

The KPMG & Project Management Institute Report

Recently, with the objective of finding out the reasons for schedule and cost overruns, Ministry of Statistics and programme implementation (MoSPI) recommended PMI to conduct a Study, in consultation with KPMG to highlight the major reasons for the time and cost overruns across major sectors in infrastructure projects. The projects surveyed in this report are from nine sectors in the Infrastructure space viz. Power, Petroleum, Coal, Steel, Railways, Roads & Highways, Civil Aviation, Ports & Shipping, and Telecom.

A report was presented by Auditing and consulting firm [KPMG](#) and the Project Management Institute (PMI) stating that ineffective planning and monitoring are the biggest threats to infrastructure project delivery.

Delays in land acquisition and site handover are the primary reasons for schedule overruns in the pre-execution phase, according to the report. Also, multiple regulatory approvals needed from several agencies leads to delays in construction, the report said.

Cost overruns are fuelled by frequent changes in design and weak procurement planning, which can be mitigated by adequate training and coaching of project managers, the report said.

The dearth of skilled project managers has the greatest influence on project delivery, the report said.

By 2022, the Indian infrastructure sector is likely to have a shortage of around 3 million project professionals including project managers, civil engineers, planners, surveyors and safety professionals, the report said. Increasing investment in training and mentoring to develop the requisite skillset among professionals deployed across various departments is an imperative, it added.

“It is a known fact that a large number of infrastructure projects in India have been delayed due to regulatory clearances, environmental issues and problems related to land acquisition,” said [Raj Kalady](#), managing director, Project Management Institute, India. “Given the critical role of infrastructure in ensuring a sustained growth trajectory in India, it is imperative to identify the

core issues affecting the timely and successful completion of infrastructure projects and chalk out initiatives that need to be acted upon in the short as well as the long term,” he said.

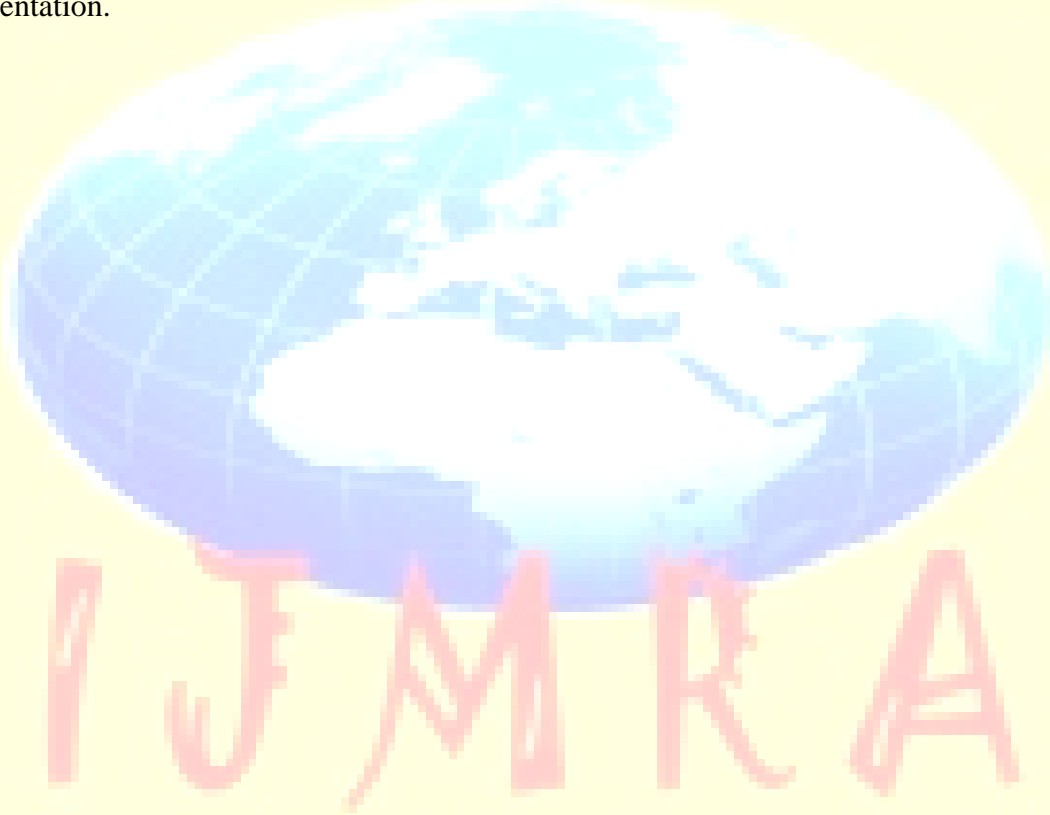
The report assumes significance as the 12th Five Year Plan (FY2012-17) has promised significant investment in the sector to bridge the infrastructure deficit. The plan is to double the spending to \$1 trillion through 2016-17 with 50% of the funding to be met by the private sector.

Suggestions

- The government and institutions should take necessary measures to address land acquisition problems, project implementation problems so as to minimize time and cost overruns across major sectors in the infrastructure projects.
- As there is a dearth of project managers and a developing country like India is focusing more on developing its infrastructure to compete with the global economies at a faster pace, it is very essential to incorporate project management as a compulsory subject in the course curriculum of professional courses like management and commerce.
- Management graduates and post graduates can seek opportunities in the field of project management and should equip themselves with necessary skill set.
- The government should also take initiative in setting up institutions which will offer courses with project management as one of the fields of specialization.
- As lakhs of graduates and postgraduates are coming out of educational institutions every year and being left as unemployed, in this scenario, there is a need to create awareness for the next generation students to take up project management as the field of study which has abundant opportunities in the years to come.
- It is the need of the hour to create awareness to the students right from the plus two levels so as to enable them to take up project management as their field of study in due course.
- During the 12th Plan (2012-17), the Government plans to focus on improving project management skills across the country. But at the same time, there is also a pressing need for industry and academia to introduce project management into their curriculum.
- The aspirants for project manager positions should develop soft skills along with other skills so as to meet the requirements of the role.

Conclusion

Project management is useful in planning, scheduling, directing and controlling of company resources for a project which has been established for the completion of specific goals and objectives. In a developing economy like India, where development of infrastructure at a faster pace is the need of the hour, it is very essential to develop project managers at a similar rate so as to enable successful implementation of infrastructure projects. It is also essential to improve project implementation at a faster pace so as to meet the demands of the growing population of the country. It is essential to minimize to cost and time overruns and enable faster project implementation.



References

Arun kumar, A.V and C.Upendranath (1993)-Infrastructure Development in India: an alternate approach to measurement, productivity, Vol.34, No.3, 1993.

Ghosh B and P.De (1998) - Role of infrastructure in Regional Development- A study over the plan period, Economic and Political weekly, Vol.33, No.47-48.

Expert Group on commercialization of Infrastructure projects, The India Infrastructure Report: Policy Imperative for Growth and Welfare, Vols I, II & III.

Facilitating infrastructure development in India: ADB's experience and best practices in project implementation.www.adb.org

Global competitiveness report 2013-14

Global competitiveness report 2012-13

Maajumder.R.(2005)-Infrastructure and Regional Development: Interlinkages in India, Indian Economic Review, Vol.40, No.2,2005.

Montek S.Ahluwalia (1997): 'Financing Private Infrastructure: Lessons from India', in choices for Efficient Private Provision of Infrastructure in East Asia, Harinder S.Kohli, Ashoka Mody and Michael Walton(cds), The World Bank, Washington, DC

Planning commission reports.

Tewari R.T (1984)-Economic Infrastructure and Regional Development in India, Man and Development Vol 6, No.4.

www.kpmg.com/in

www.PMI.org.in