

PGDM 2018-2020

Project Management (DM-544 /IB-517)

Trimester – V End-Term Examination: December 2019

Time allowed: 2.5 Hours

Max Marks: 50

Roll No: _____

Section A:

Max. Marks: 30

Answer all questions. Each question carries 5 marks.

A-1 Explain in brief as to How the following technologies can be used for effective execution and reduction of time and cost over runs of projects. (Any two of the following) (CILO1)

a. Drone Monitoring and visualization

OR

b. Mobile Technology for Real Time Monitoring

A-2 What is meant by the following (CILO2)

a. Pre Project Planning Stage

OR

b. Project Life Cycle

A-3 Explain with example, (CILO3)

a. Delays in Project due to Land Acquisition

OR

b. Inadequacy of skilled manpower and technology

A-4 Define and Explain, with at least two examples (CILO1)

a. What is meant by “Cost Overruns”

OR

b. What is meant by “Time overruns”

A-5 Explain with an example the criticality of the following in Project Financing? (CILO2)

a. Nexus of contracts with commitments

OR

b. Process of managing the risks of project

A-6 Write short notes, with examples, on; (CILO3)

- a. Three conventional ways of working methods on projects v/s use of current technologies for construction projects.

OR

- b. Explain (in about 100 words each) as to How and Why is the economic growth of India is dependent upon the four major infrastructure projects viz. 1- Road and Rail transport, 2- Power generation, 3- Irrigation and 4- Communication.

Section B:

Case Study (Compulsory)

Max. Marks: 20

(CILO4)

The economic growth of any country is primarily dependent on the development of its infrastructure and India is no exception. In the immediate past, India was identified as the fastest growing economies amongst the world and is poised to grow again at 7.5 percent in 2019 and 7.7 percent in 2020, after the current low growth rate. With investments envisaged amounting to INR 50 Lakh crore, there has been a considerable impetus to effectively deliver projects and programs in the country.

The business of building infrastructure is one that involves long gestation periods, and often closely intertwined with public opinions impacting the project outcomes. Given this backdrop, it is important to focus on the core industry issues, and the opportunity that lies therein, because the road to growth cannot happen without putting in place the infrastructure backbone, which then has a multiplier effect on which way the economy, and we, go as a nation.

The global infrastructure industry is grappling with few pervasive issues that impact capital project outcomes, and Indian infrastructure projects are not insulated. Yet, our country continues to witness an unprecedented infrastructure development fuelling the economic growth.

According to the Ministry of Statistics and Programme Implementation (MoSPI) project database as on January 2018, 345 projects have incurred a cost overrun of **INR 2.19 lakh crore** and 354 projects have an average delay of **45 months**.

While project discipline is country agnostic, that is, structured project management practices of project delivery are crucial regardless of geographic location. However, challenges remain in terms of maturity in adoption of these global best practices, complexity of projects and skilled work force. As per the 2018 edition of PMI's annual Pulse of the Profession survey, it was found that nearly 10 percent of every dollar is wasted due to poor project performance, which translates to USD 99 million forevery USD1billion invested.

The Government of India has launched various critical infrastructure projects like Power for All, Smart Cities Mission, Swachh Bharat mission, and many more with an objective to build world

class infrastructure in the country. However, as per Ministry of Statistics and Programme Implementation's (MoSPI) Flash report of January 2018, it is observed that around 20 percent of the central sector projects are delayed beyond their scheduled date of completion.

Managing these complex projects has always been a challenge, especially since these projects are long-term, involve multiple stake holders, bring-in new technologies, and constrained resources. According to a recently (2018-19) study "Revamping Project Management-Assessment of infrastructure projects and corrective recommendations for performance improvement", it has been brought out that as a standard practice world over, most of the infrastructure projects are delayed primarily due to regulatory approvals, issues on land acquisition, shortage of skilled resources, ineffective dispute resolution mechanism, and geological challenges. However, if one comprehends these issues proactively, the project leader can plan more effectively and ensure that the project is efficiently managed.

The report underlines the need for heavy investment in project pre-planning, to strengthen processes and capabilities in terms of reforming procurement and strengthening contract management, bringing in lean construction methodologies for improving productivity, incorporating a culture of risk management, bolstering people management processes, augmenting organizational skill-sets, and deepening stake holder management for land acquisition and regulatory approvals related challenges.

The implementation status of most projects points out the gaps in the application of project management practices. A trained project manager is capable of making a holistic assessment of all the risks embedded in a project which not only help in forecasting problems that may cause delays beforehand but also offer ample opportunities to mitigate the risks. Therefore, systematic adoption of this discipline and implementation of project management techniques are crucial for a country like India, especially to continue on its high-growth trajectory in the coming years. It is now universally recognized that project management plays a vital and decisive role in effective and transparent program implementation. It also significantly contributes towards creating a culture of performance governance. Almost all the major world economies are now increasingly relying on project and program management skills to improve the impact of government programs through a focused, result-oriented approach. This trend is equally, if not more, relevant for India, more so in the current context of raised expectations from the present Government.

It is strongly believed that project management helps to bridge the chasm between high-level strategic vision and successful outcomes. Implementation of project, program and portfolio management framework, tools and techniques can thus be the enablers for successful execution of crucial public projects and programs.

Additionally, the infrastructure development in India is prone to dependency on external factors (land, environment, socio-economic, community, regulatory, market forces etc.) and has its fair set of challenges. Added to that are the sectorial nuances –with project types that are geographically spread / linear and those that are area based. While there may have been a few success stories, but as a whole, our performance falls short significantly, and on a consistent basis.

The report's recommendations section identify specific actions such as

- 1) The importance of pre-planning and site readiness before you mobilize construction on your project,
- 2) Collaborative and agile planning,
- 3) Reforming public procurement and contract management,
- 4) Strengthening stakeholder management for land and regulatory issues,
- 5) Improving governance, processes and people capabilities,
- 6) Introducing and enabling lean construction principles and
- 7) Gearing up to fully leverage technology.

As a nation, we need to overcome what has slowed us down in the past. There are a number of fundamental positives. We are a nation that has no dearth of engineering talent with decades of project delivery experience residing in pockets that needs to be tapped into to help improve the overall average performance levels. Deep techno-commercial expertise, robust contractual and legal systems, a passionate and driven workforce, with a strong entrepreneurial culture, leading technology advancements and disruptions– these are some of the favourable factors that should be leveraged.

The study recommendations would require various stakeholders including key ministries, nodal GoI think tanks including but not limited to NITI Aayog, Department of Public Enterprises, some recently created units like the India Investment Grid under Ministry of Commerce and Industry and key central as well as state PSUs that are implementing these programs and projects, engineering and contracting firms in the country, to address and adequately respond to the suggested measures, and organize themselves potentially using this platform as a call to action.

Recently, few projects have reported to set new benchmarks in timely completion such as the Delhi-Meerut expressway (Phase-1), the Statue of Unity and Delhi Metro (multiple phases). Additionally, infrastructure focused initiatives launched by the Central Government such as **PRAGATI** and **eSuidha** have facilitated in debottlenecking critical projects, especially in the roads, power, and aviation sectors. However, improvement opportunities exist on a macro scale, and key stakeholders such as the Implementation Agencies, state governments, and contractors need to optimize their

project management processes. Multiple factors contribute to the reported overruns, mainly; lack of comprehensive upfront planning and risk management, non-collaboration across stakeholders, uncertainties in land acquisition process and regulatory approvals, scarcity of skilled labour, and above all, lower maturity of project management processes to adequately plan for such factors. Furthermore, ahead of us is a strong pipeline of large programmes such as Bharatmala, Sagarmala, Green Energy Corridor and multiple oil and gas projects. In order to stay on course, it is essential to re-evaluate the core issues and address them adequately.

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Q1: List and explain five important steps needed to ensure an effective project execution. (7 Marks)

Q2: List and explain five major causes of time and cost over runs in mega projects. (7 Marks)

Q3: Write short notes (Not more than ten sentences each) on three important recommendations made in the case.¹ (6 Marks)

¹ Acknowledgement: The write up is extracted from the joint report of the PMI and KPMG (2019) titled "Revamping Project Management: Assessment of infrastructure projects and corrective recommendations for performance improvement"