

PMI-KPMG Study on Drivers for Success in Infrastructure Projects 2010

Managing for Change

KPMG IN INDIA



FOREWORD

The Infrastructure industry passes the test!

As the world emerges from the debilitating clutches of economic depression, it is time for the rules that govern growth to be re-written. A turnaround is mandated from conventional growth to a more sustainable pattern based on the strong foundation of inclusiveness. It is now time for project owners and contractors to consolidate their areas of strength while alleviating weaknesses, to enable successful project delivery.

The past year was a period of reckoning with key indicators establishing new lows. Declines notwithstanding, the Infrastructure industry enjoyed a whopping 22 percent growth¹ in 2008-09. While the corresponding figures for 2009-10 are awaited, projections follow a common vein – the economy is reviving and the Infrastructure industry is driving India's GDP growth. This is bolstered by the planned government spending of INR 46.4 trillion for the 12th five-year plan (2013-17)² and a staunch commitment for infrastructure investment proposed by the government.

Planned infrastructure spends and growth projections however paint only one half of the picture. Successful project delivery and spend efficiency, by the Government and Private sector alike, are imperative to realise the desired growth and consequent benefits. While modest strides have been made in enhancing project delivery, projects are still burdened by serious time and cost overruns, misconduct, wastage, all within an inflationary environment. Of the 1035 infrastructure sector projects completed during April 1992-March 2009, 41 percent faced cost overruns and 82 percent witnessed time overruns³.

As the economy revives, it is critical for owners and contractors, the Government, and the entire project stakeholder community, to mitigate delivery weaknesses while consolidating strengths, and collaborate in delivering projects successfully.

KPMG and Project Management Institute (PMI) have undertaken this survey 'PMI-KPMG Study on Drivers for Success in Infrastructure Projects 2010', to decode the issues inhibiting successful project delivery. We have sought the views of over 100 top management personnel representing leading Indian companies across multiple infrastructure sectors, namely Oil & Gas, Power, Roads & Bridges, Ports & Shipping, Civil Aviation, Urban Infrastructure, Railways, Steel, and Telecom. The interview findings augmented with specialist commentary by KPMG, offer a compelling insight into such regressive issues with a view to finding the most acceptable solutions as the way forward.

We would like to thank all participants for their valuable contributions.

1. Central Statistical Organisation report
2. Planning Commission, Government of India
3. As per MOSPI research

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EXECUTIVE SUMMARY

While infrastructure drives economic growth, time and cost overruns threaten to limit the sector's potential to achieve growth projections and help ensure efficiency of capital expenditure

Budget and schedule overruns:

Prolonged design finalisation phase and scope creeps are key contributors to budget overruns. Overruns have occurred due to material price escalations over the project lifecycle, with materials costs, amongst the input costs, having been identified as the sole contributor. The key lies in close monitoring and in setting effective deadlines

Progress reports and responsibility-accountability matrix most effective for project control and monitoring:

While progress reports and responsibility-accountability matrix are currently the primary tools for project monitoring, respondents feel that independent project reviews and oversight are effective measures for monitoring and control. The industry has started accepting the Project Management Office (PMO) concept for independent reporting and to ensure project management excellence. Project teams that have adopted a PMO reiterate that it ensures consistency and uniformity in project delivery. This helps project owners to achieve desired operational and performance levels

Contract decisions underpinned by budget and schedule commitment:

In an environment of delays and out-of-budget projects, contractual commitment to delivery timelines and budgets is identified as the most important criteria for contractor selection. Over half of the respondents feel that disputes between project owners and contractors arise from delays and damage claims

Need for independent risk management reviews and reporting:

While current risk management practices are identified as effective, a majority of the respondents echoed a common sentiment that significant improvements

can be made. Assessment of project risks and uncertainties upfront can significantly influence project success. Another common sentiment unveiled is the need for independent, internal or external agencies, to facilitate periodic risk reviews and reporting, which is a pre requisite for effective risk management

Adequate supply of quality personnel becomes critical:

Shortage of skilled project managers is identified as a cause for project overruns. While respondents adopt resource planning and monitoring strategies to improve utilisation and availability, they feel that the quality of project management training offered by institutions needs significant improvement. Structured external and internal programs are identified as the most effective strategy for over-coming concerns around resource quality

Environment, Health and Safety is yet to evolve:

Less than half of the respondents feel that EHS can be considered as a sound business investment. A vast majority invests up to three percent of the project cost on EHS

Influence of external agencies:

Respondents identified that regulatory authorities and land owners have the largest influence on project outcome. While initial planning was conducted to address these issues upfront, hindrances were still experienced for a majority of the cases. The respondents feel that the Public-Private Partnership model and increased transparency in planning infrastructure spending are required for maximising the potential of the Infrastructure industry.



THE DELIVERY DEBACLE BUDGET AND SCHEDULE OVERRUN

The survey has identified that the biggest reasons for overruns are inadequate design and planning coupled with scope creep and material cost escalations. Schedule deviations have further fuelled cost overruns. Regulatory hurdles and land acquisition are the primary reasons for schedule overrun.

Cost overruns are fuelled by frequent design changes and iterations

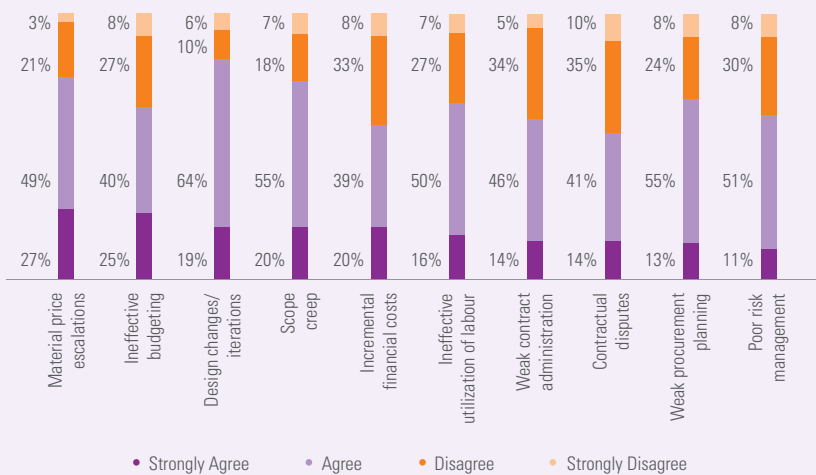
Eighty three percent of the respondents feel that the primary reason for cost overruns is frequent design changes and iterations. An ineffective project conceptualisation phase is often the identified cause for frequent design iterations. While market conditions may demand scope modifications, the proportion of such demand-driven scope changes is significantly lower. More often than not, project owners have generally failed to define the complete scope of work upfront, which tends to evolve over the execution phase. There are cases of capital intensive projects being delayed by three to four years, and budgetary deviations upto 110 percent, on account of change in scope of work and the resultant revisions in design.

The survey findings echo this analysis with scope creep, occurring due to design revisions during execution, being identified by 75 percent of the respondents, as another reason for cost overruns.

83 percent

of respondents feel that design changes lead to cost overruns

Reasons for project cost over-run



Source: PMI-KPMG Study on drivers for success in infrastructure projects 2010 - Managing for change

“ Changes in designs, first in the technology and then in the plant layout have caused us to lose precious time ”

– Managing Director of a INR 5600 crore steel manufacturer

However, mid sized companies (revenues within the range of INR 500 crores and 1000 crores), identified weak procurement planning as the primary reason of cost overruns. Other reasons identified by the respondents are ineffective labour utilisation, ineffective budgeting, and weak contract administration.

72 percent

of respondents feel that material input costs are highly susceptible to escalations

“Lack of resources, especially for manufactured equipment and timely supply of materials are major factors lacking in the power sector as a whole”

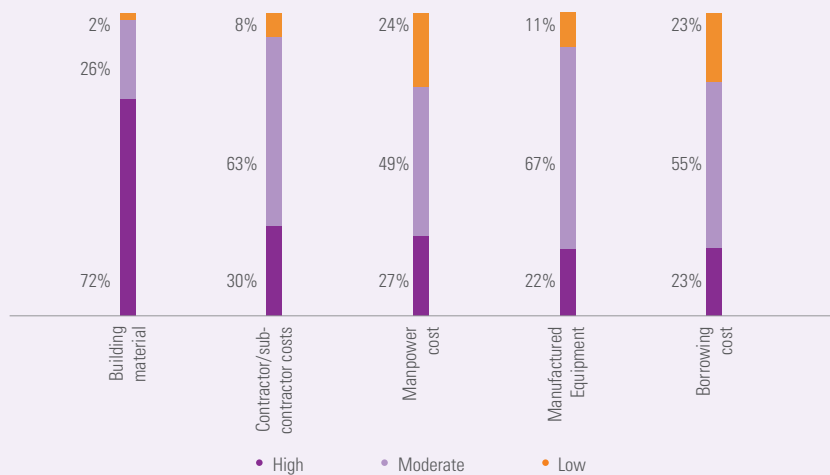
– Senior Vice President of one of the largest private sector power utility companies

Building materials costs are most susceptible to overruns

With prolonged project delays and changes to the scope of work, project teams often find it difficult to control material quantities that define the Bill of Quantity (BOQ). This has led to material price escalations being identified by 76 percent of the respondents as another key reason for cost escalation.

This is reflected in our survey finding with material costs being identified by a large margin of the respondents, as the primary element of input costs that lead to overall cost escalation. While 72 percent of the respondents feel that input material are the most susceptible to suffer an escalation, only 30 percent of the respondents feel that service provider costs and 27 percent of the respondents feel that manpower costs’ increase, have a high susceptibility for escalation.

Cost elements’ Susceptibility to increase



Source: PMI-KPMG Study on drivers for success in infrastructure projects 2010 - Managing for change

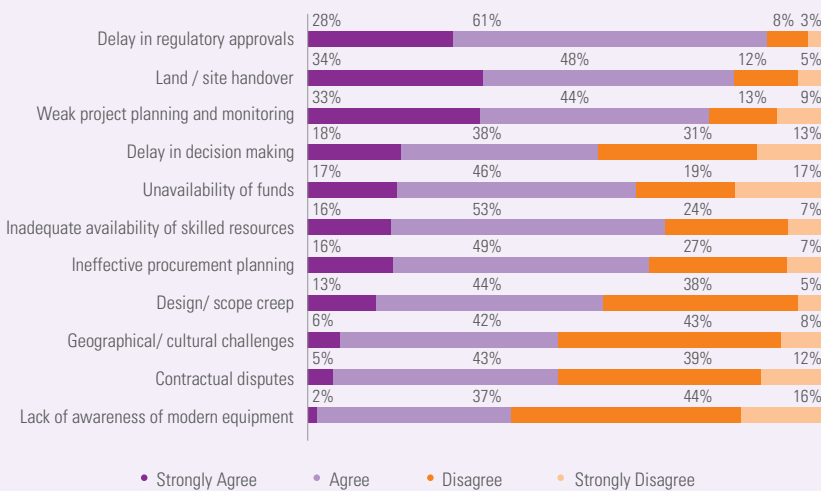
Time overruns occur due to regulatory and land acquisition delays, weak project planning and monitoring

The complexity and scale of infrastructure projects being undertaken in India have transformed significantly with the average project today being budgeted at approximately INR 600 crores, with a schedule of approximately eight to ten years⁴.

The regulatory framework that governs these projects is also evolving. Activities such as land acquisition, seeking forest clearances, relocation of project affected persons have become relatively more critical than erstwhile critical areas such as access to technology and project finance.

The survey respondents have overwhelmingly identified that delay in regulatory approvals is the primary cause of project delay. This is complemented by 82 percent of the respondents, who attribute delays in land acquisition / site handover as the other cause for delays in the overall project schedule.

Reasons for project delays



Source: PMI-KPMG Study on drivers for success in infrastructure projects 2010 - Managing for change

With increasing project complexity and interdependencies, planning and monitoring have become even more critical. Delays and shifts in activities have major impact on succeeding activities.

Access to technology, project finance, awareness of modern equipment, contracting and managing contractors, amongst others are relatively more predictable in the current environment, and hence relatively less likely to cause project delays.

75 percent

of respondents feel that delays in regulatory approvals and land acquisition cause overall project delays

77 percent

attribute project delays to weak project planning and monitoring

4. National Institute of Construction Management and Research, December 2009

80 percent

of the respondents highlighted the use of cost effective project designs as the most important strategy to control project costs.

Strategies to control overrun

Qualitative discussions have yielded that an effective control over the delivery timelines serves as the most important control over cost escalation and overall project overrun.

Taking control of costs

With frequent design iterations and material price escalations being identified as major reasons for cost overruns, project teams are encouraged to identify measures that can be in-built into sourcing strategies to mitigate exposures to increasing material rates. Moreover, with the frequent incidence of scope creep, measures to control cost escalations on account of increased quantities also need addressal.

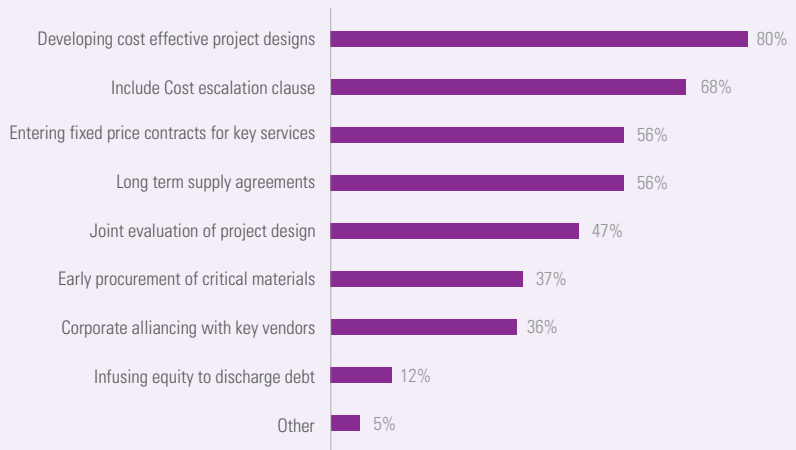
One such critical measure is to develop cost effective designs that limit the overall material and input cost upfront, while protecting against scope creep.

Another measure adopted frequently, albeit by Contractors, is to transfer the risk of cost escalations through insistence on inclusion of price escalation clauses in the terms of contract. This is seen clearly with 80 percent of the Contractor respondents indicating use of this strategy, while only 60 percent of the Project Owner respondents stated the inclusion of material price escalation terms in their contracts.

Fixed price contracts and long term supply agreements, are evenly identified by 56 percent of respondents, comprising Project Owner and Contractors, as strategies to control costs.

Respondents indicated that ongoing corporate alliances and long term supply agreements were also likely to allow the projects costs to be controlled within budget.

Strategies to arrest cost escalations



Source: PMI-KPMG Study on drivers for success in infrastructure projects 2010 - Managing for change

The KPMG Point-of-view

The infrastructure industry in India has enjoyed several positive indicators such as exponential demand for infrastructure, an unprecedented pace of growth, increasing levels of specialisation of the participants, increasing technological sophistication, success of the Public-Private Partnership model and infrastructure incentives amongst others. While these indicators are forecasted to continue unabated, certain hard facts such as the on-ground delivery and extent of success achieved in terms of timely and within-budget completion sound a cautionary signal to the industry and the stakeholders.

KPMG has identified that companies today have a high-level of awareness towards the need for project management as an organisation-wide process. However, effective implementation of project management as an organisational process is yet to be realised by the majority. Indicative leading practices that Project Owners and Contractors might consider across the project lifecycle are provided alongside.

Conceptualisation:

- A key area of focus in this phase is the devising of the project implementation plan. This also allows project risks and uncertainties to be identified upfront. This concept stems from the fact that the company's ability to respond to risk or uncertainty is the highest in the early phases of the project, at which time the commitments and extent of expended funds are the lowest, allowing for increased flexibility.
- The project implementation plan should also identify all stakeholders comprehensively and necessarily document their requirements clearly

Planning:

- Budgeting and scheduling exercises need to be conducted in parallel. Project budgets and schedules need to be integrated across the project and delivery functions
- It is beneficial to maintain a significant level of detailing in the individual budget and schedule line items. This allows the dual benefit of encouraging the delivery teams to plan in sufficient detail upfront, while allowing effective baselines for monitoring during execution
- Schedules need to be designed to allow interdependencies to be addressed, allowing for simulation of complex Gantt chart / PERT networks. Computer-based software tools are effective in managing complex schedules and interdependencies. Disciplined use of such tools accelerates the delivery team's maturity towards project planning and monitoring

Designing:

- Project design should ideally follow a phased approach. Fast-tracking across design phases may be adopted only when the outcome of the designs is predictable, to prevent avoidable iterations
- Design finalisation schedules need to be tracked very closely as

projects are most susceptible to design schedule delays. Such delays usually have an amplified adverse impact on the subsequent execution schedules

- Phased design finalisation and frequent design reviews at site can serve as effective measures to prevent scope creep

Procurement:

- A detailed analysis of the material cost components, logistics and storage, and economies of scale are to be considered. Based on this analysis long term alliances, a rate-based escalation formulae may be considered

Controls over physical delivery:

- Robust information systems can help ensure availability of updated and relevant information. This can enable informed decision making. Information protocols should comprise early warning and escalation components to help ensure timely decision-making
- Project baselines in the form of budgets, schedules, cashflows amongst others need to be updated as frequently as possible
- Change management control procedures must be implemented to assess the cost and time impact of the proposed changes. Decisions that lead to changes should thus be based on such budget and schedule assessments.

Leading practices such as those enlisted and others are important to help ensure adequacy of preparedness, systems and procedures. Improvements towards land reforms, labour laws, systematic and efficient regulatory approvals are critical external ingredients, to help ensure quicker project turn-around time and control overruns. Finally, an environmentally responsible, equitable and inclusive approach by all project stakeholders is necessary for achieving the desired project benefits.

PROJECT MONITORING AND REVIEWS GO THE INDEPENDENT WAY

Progress reports and responsibility-accountability matrix are most frequently used to monitor and control projects. There is a clear shift in preference for independent monitoring and reviews for oversight. The Project Management Office concept has gained acceptance.



Progress reports are the most frequently used tool for project monitoring

Well designed project progress reports are most effective in communicating project progress, or lack of it, and maintaining structured information flow. Such reports are prepared by the project manager and highlight progress achieved against baselines, risks to project, key concerns and decisions to be made, and way forward. Not surprisingly, project progress reports are the most preferred mode for project monitoring and control.

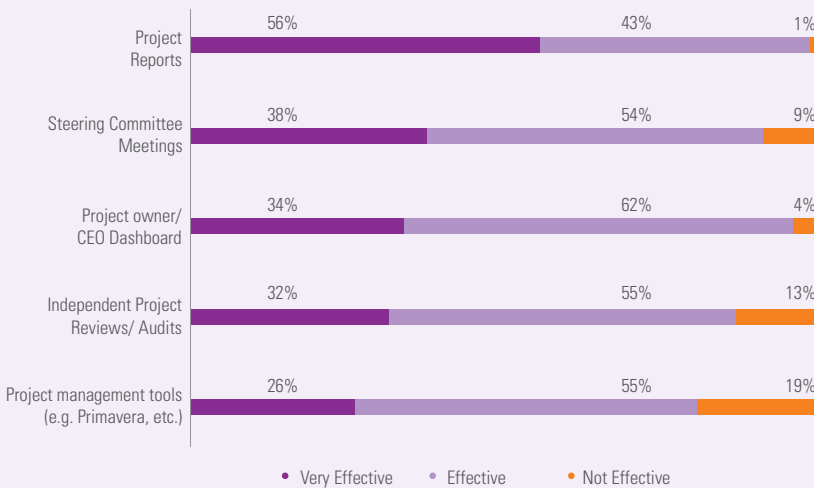
In parallel with project progress reports, 38 percent of the respondents feel that periodic oversight by the project stakeholders through Steering Committee Meetings is highly effective for advancement of the project. Project dashboards, and routine checks such as Internal Audit and controls assurance by independent bodies were identified as very effective measures by a third of the respondents.

Surprisingly, a lesser proportion of the respondents, approximately a quarter, have identified computer-based scheduling tools as very effective. Interestingly, a small but sizeable percentage of the respondents (19 percent), feel that computer-based scheduling software is ineffective as a project monitoring tool. The potential reason for this finding is the relatively lower value perceived by the project management teams in using systems for schedule management, as compared to routine project reports that include progress depicted on simplistic schedules generally provided as bar charts. Another potential reason is the cost of precious manpower required for preparing and updating complex system-based schedules. We see the preference towards usage of scheduling tools increasing with the advent of complex project schedules and reporting requirements.

99 percent

respondents find project progress reports at the most effective tools to monitor projects.

Tools & mechanisms for monitoring and reporting progress of Projects



Source: PMI-KPMG Study on drivers for success in infrastructure projects 2010 - Managing for change

61 percent

of respondents feel that responsibility-accountability matrix is a very effective control

“There is a lack of proper ownership by stakeholders”

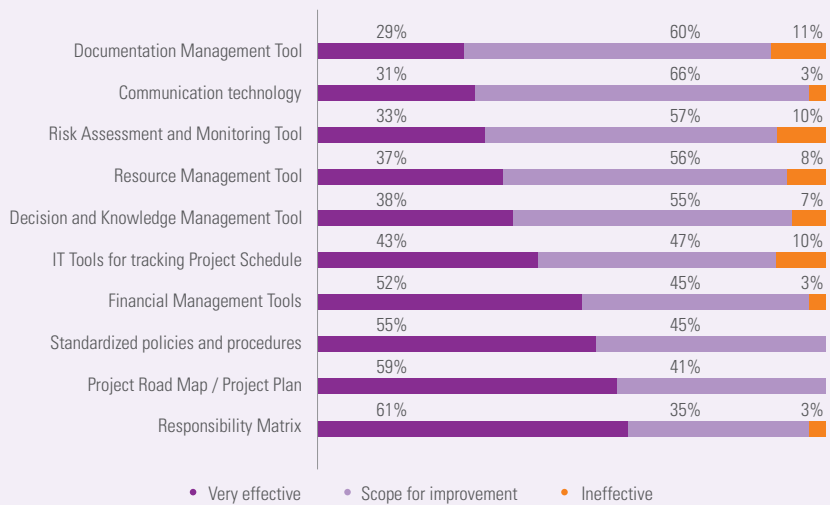
– Senior Vice President (Finance) of one of the major Indian telecom service providers

Responsibility-accountability matrix is the most effective control currently in use

Among the currently used tools to help ensure project control, respondents selected the responsibility-accountability matrix as the most effective of tools. The responsibility-accountability matrix was identified as most effective due to its ability to define ownerships and ensure accountabilities. This also highlights the subtle fact that project management is yet a highly people-driven process in India, as opposed to a system-driven process. Hence, the importance of tools that highlight individual responsibilities-accountabilities cannot be over-emphasised.

Project implementation plan is another critical area that addresses the strategy and approach to be adopted by the project team in executing the project. Standardised policies and procedures define the processes and operating framework in which the project is to be delivered. Project road map / project plan (59 percent) and standardised policies and procedures (55 percent) were also identified as critical tools in use by the respondents.

Tools to ensure efficient project delivery



Source: PMI-KPMG Study on drivers for success in infrastructure projects 2010 - Managing for change

Robust review mechanisms are most preferred to control overrun

With increasing project complexity and scale, projects have to contend with increased layers of scrutiny. This has led to management teams showing a marked preference for reviews, in a bid to control overrun. This is clearly reflected with survey respondents indicating that 'periodic and secondary reviews / oversight' are the most preferred measures (69 percent) to control project time and cost overruns.

46 percent of the respondents feel that independent monitoring of projects is a critical factor in controlling overruns. This is closely followed by 45 percent of the respondents identifying standardisation / formalization of processes through defined standard operating procedures and policies as a measure of cost and schedule control.

The relatively diminished preference towards contingency funds is an indicator of the drive towards increasing efficiency and control over project / capital expenditure, while leveraging on independent review and oversight to help ensure delivery.

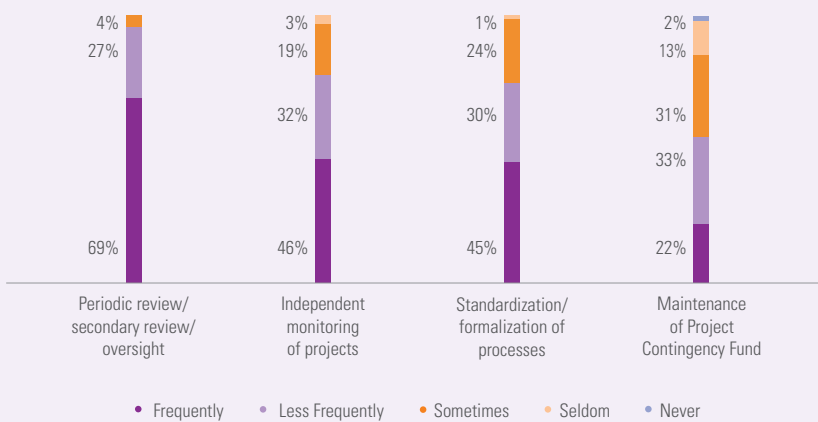
46 percent

of the respondents say that independent monitoring of projects is a critical factor in controlling overruns

22 percent

respondents identified contingency funds as effective in controlling time and cost overruns.

Strategies to improve project cost and schedule control



Source: PMI-KPMG Study on drivers for success in infrastructure projects 2010 - Managing for change

Off all the ongoing projects running within budget,

85 percent

have an established Project monitoring Office

“The PMO concept was successful only because of the trust created by us between the Project Managers and the PMO Managers”

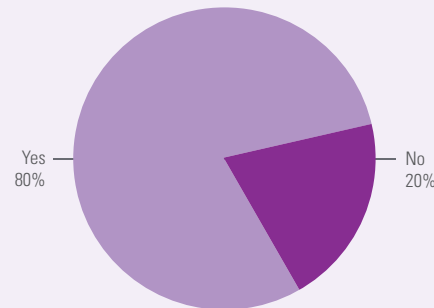
– Senior Vice President of a INR 30,000 crore engineering and construction company

Project management office is gaining acceptance as an independent monitoring agency

The provision of a project management office (PMO) as an independent monitoring agency is a relatively new concept in India. This concept has proved very effective in monitoring projects internationally, for organisation's undertaking a large number of projects each year. The PMO serves as a body with independent Board reporting responsibility and supports oversight on projects. The PMO also serves as a body of project management excellence and handholds project teams in implementing project management best practices, consistently through the project lifecycle.

Eighty percent of our respondents have reacted positively to the potential effectiveness of the Project Management Office as an independent monitoring agency and for its support in maintaining oversight on projects. A possible driving factor of this sentiment is the perceived need for independent project reviews and the desire to implement consistent high quality project management processes and systems across the organisation and projects underway.

Independent Project Management Office for monitoring projects



Source: PMI-KPMG Study on drivers for success in infrastructure projects 2010 - Managing for change

On similar lines, almost 80 percent of the projects that are running on schedule have adopted the PMO concept.

The KPMG Point-of-view

Embedding project controls in the delivery framework, independent project monitoring and reviews, and oversight are seen as three necessary ingredients for successful delivery. As projects become more complex and increase in size and scale, Boards and Management teams run the risk of depending solely on project teams for information on large value and crucial capital expenditure. This has given rise to project independent governance structures that have evolved from base levels such as site audits, to risk-based internal audits and capital expenditure reviews, and of late, to full-fledged project reviews at particular points-in-time and / or continuous reviews.

The more evolved forms of project governance structures today include Project Management Office (PMO) that

focus not only on reporting of the project's performance vis-à-vis the baselines, but also on the overall performance of the projects on several parameters, such as HR, capital equipment, look ahead plans, time and cost to completion, potential risks, success and relevance of existing mitigation measures amongst others. Superior variants of the PMO go beyond plain reporting to actually driving project teams for enhanced performance. Such activities can include reprioritising project plans to optimise resources across projects, transfer of knowledge and handholding implementation of leading practices, leverage modular design components to crash design schedules, measure project risk exposures at an organisation-wide level, amongst others.

The most critical of success factors for governance structures such as PMO to achieve greater acceptance is thus in its ability to create value beyond that created by the individual project teams. Such structures must serve as partnering concepts that create an environment for enhanced performance by the project teams and feed on continuous improvement.

CEMENT CONTRACTOR RELATIONSHIPS TO CONTROL PROJECTS

Contractual commitment to delivery timelines and budgets is the most important criteria for contractor / vendor selection. Not surprisingly, 'delays and damages claimed thereof' is identified as the single, most common reason for disputes. This finding has important ramifications for projects in an environment of chronic time and cost overruns.



Contractual commitment to delivery timelines and budgets is the most important criteria for contractor / vendor selection

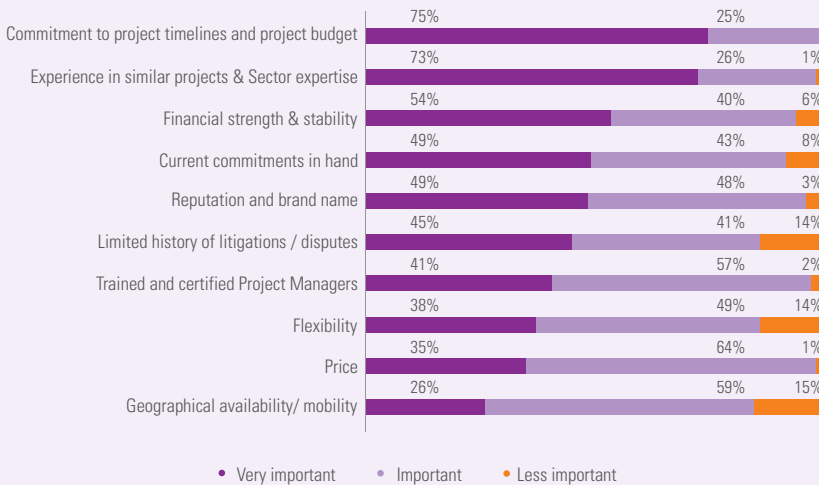
In an environment of budget and schedule overrun Project Owners are vary of their contractual relationships and feel the need to transfer risks to the Contractors. Contractors on the other hand tend to want to transfer material price risk back to the Project Owners.

This differing outlook on part of Project Owners and Contractors is echoed in the survey finding with 75 percent of our respondents feeling that the single most important criteria for contractor selection, is the contractor’s commitment to project timelines and budget.

With the increasing scale and complexity, Project Owners are also wary of the available experience of Contractors in executing their critical projects. The respondents (73 percent) have selected experience in similar projects / sector as the second most important criteria for contractor selection.

54 percent of the respondents identified financial strength and stability as another key criteria for being able be sustain long lead time projects.

Parameters for selecting a vendor/contractor



Source: PMI-KPMG Study on drivers for success in infrastructure projects 2010 - Managing for change

“ In Indian context, non-availability of quality vendors for material supply, a culture of not honouring the committed date of delivery and lack of infrastructure also plays a role in delaying the project ”

– Vice President of a INR 20,000 crore international joint venture company in the Oil and Gas Sector

60 percent

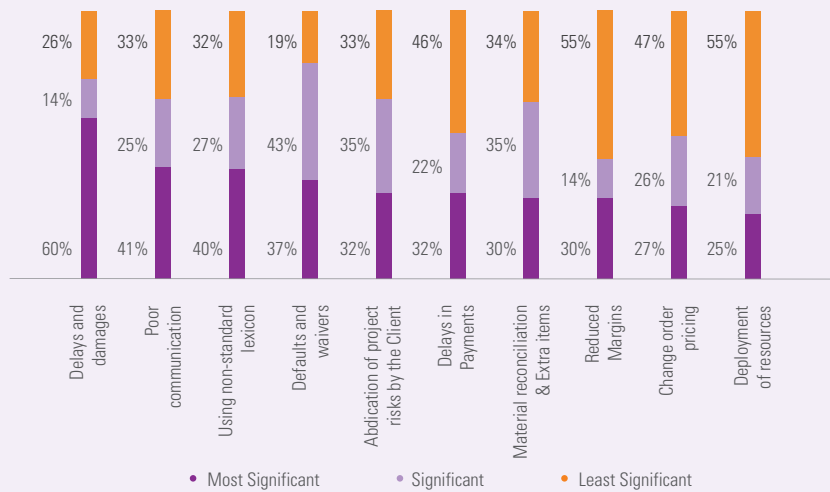
of the respondents feel that disputes arise from delays and damages claimed

Delays and damages claimed thereof’ is the single most common reason for disputes as identified by Contractors and Project Owners alike

Project Owner and Contractor disagreements can originate from a variety of reasons such as quantity variations, rates for incremental works, understanding on payment terms and payment timelines amongst others. In an environment of delays on part of Project Owners and Contractors, penal terms tend to intensify these disagreements to major disputes.

60 percent of our respondents comprising contractors feel that delays in completion of assigned tasks and damages claimed thereof is the main reason for disputes. 41 percent have identified poor communication as a cause for disputes. 37 percent feel that seeking waivers on defaults while 32 percent feel that delay in making payments are the other reasons for disputes.

Common causes of disputes between Project Owners and Contractors



Source: PMI-KPMG Study on drivers for success in infrastructure projects 2010 - Managing for change

56 percent of the entire respondent universe comprising Contractors and Project Owners has identified delays and damages claimed thereof as the most significant cause of disputes.

One interesting finding of the survey was the use of Alliancing as a commercial and legal framework used between the owner and one or more providers. This enables sharing of key project risks with an integrated project team taking collective responsibility for decision making, Here funding is usually provided by the the asset owner, with the non-owner participant typically providing construction and delivery expertise.

Such a technique would not have been considered a few years ago but with the decline of fixed price contracts, owners are finding ways to spread the risks of rising costs.

The KPMG Point-of-view

The importance of contractual commitment to project budgets and timelines by Contractors, as identified by the survey, stems from the fact that a majority of projects face overruns. The most common mitigation measure that follows currently is the transfer of the 'time-cost overruns' risk by the Project owner to the Contractors, and then by the primary Contractors to the sub-contractors.

However, with the rapidly growing demand for complex infrastructure and capital replacement projects, contractors are no longer willing to absorb the significant contracting risk. Contracts are moving from fixed-price to cost-plus contracts, often containing labor and material cost escalation clauses.

Recognizing that the pendulum has swung, there is a need for both the project owners and contractors to adopt a far more collaborative approach than in the past, with integrated project teams often housed in the same office, sharing reports that track project progress. Some are even going to the extent of making their costs transparent, creating an atmosphere of mutual trust and dependence.

Owners that respond positively to the new market conditions can manage risk more effectively by developing greater planning and project management expertise and monitoring contractor performance more closely. The use of cost and schedule risk modeling should also help reduce the risk of cost overruns. While it takes time to develop such capabilities internally, companies are seeking external assistance, especially while devising the project implementation strategy.

While the balance of power shifts dynamically between the owner and the contractor, there is a potential opportunity to tap into the power of partnerships to remediate contractual and dispute risks.



RISK MANAGEMENT EVOLVES

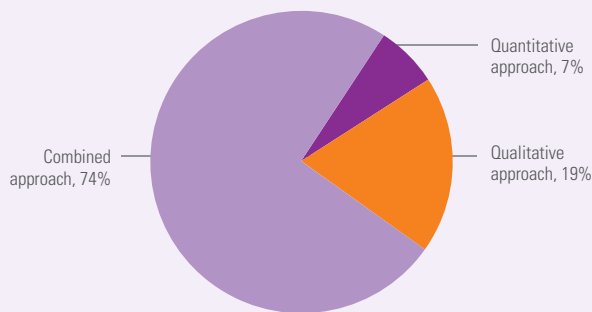
Risk Management practices are perceived as effective, although a majority feels that there is a clear scope for improvement. While risk management processes get sophisticated in assessing risks, concerns exist around the comprehensiveness of risk identification. Periodic risk reviews and reporting by independent teams are perceived as most effective in managing risks.

A combined approach comprising qualitative and quantitative techniques is used by a majority of the respondents for risk assessment

When respondents were asked about their current approach of identifying and assessing risks, approximately seven in ten stated that they used a combined approach, comprising both quantitative and qualitative techniques for assessing risks.

Three-by-three and five-by-five matrices, with perception based ratings are the most used qualitative techniques for risk assessment. Numerical models and simulations are the most commonly used quantitative techniques.

Current approach used for identifying risks



Source: PMI-KPMG Study on drivers for success in infrastructure projects 2010 - Managing for change

74 percent

of the respondents follow a combined approach for risk assessment

“ Risk assessment is one thing, but it is more important to first identify all possible risks ”

– Chief Risk Officer of a INR 900 crore construction contracting company

25 percent

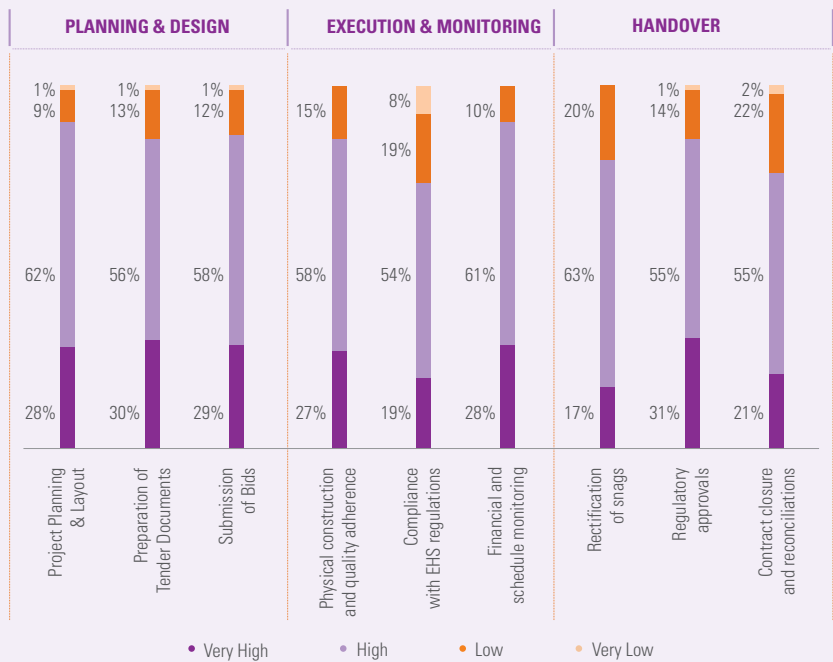
of the respondents claim to be good at identifying and assessing risk

Under one third of the respondents rated their specific risk management practices across the project lifecycle as highly effective

The survey suggests that respondents have considerable confidence in their risk management capability, with over two third claiming the effectiveness of their risk management practices to be “very high” or “high” at identifying and managing risks across the project lifecycle.

Interesting exceptions are identified in the feedback received on three critical aspects of project delivery – compliance with EHS regulations, rectification of snags and finally, contract closure and reconciliations. Given the limited supply of quality project manpower, contractors at times feel compelled to re-prioritise their workforce to more critical functions or new projects altogether. This not only leads to under-prioritisation of finer project aspects such as compliance with EHS regulations during execution, but also impacts the handover phase of the project as well.

Effectiveness of risk management practices across the project lifecycle



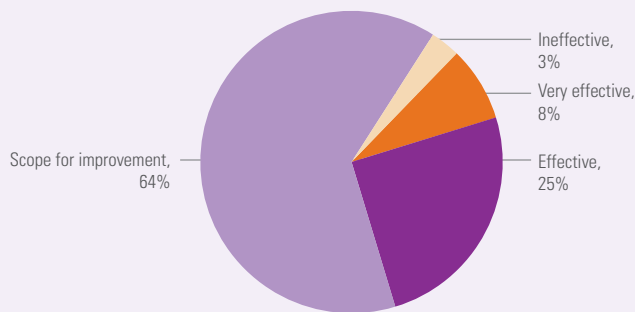
Source: PMI-KPMG Study on drivers for success in infrastructure projects 2010 - Managing for change

There is a clear scope for improvement in the risk management practices adopted

Although the majority of respondents claim to manage risk effectively, this does not appear to prevent delays and cost overruns. Consequently, many respondents seek greater consistency in risk management through the standardization and formalization of processes.

Irrespective of the risk management processes and systems implemented at a project, entity or group level, a majority of respondents feel that there is a clear scope for improvement in the risk management practices. 67 percent of the respondents rated risk management practices as ineffective or with a clear scope of improvement.

Effectiveness of current risk management practices



Source: PMI-KPMG Study on drivers for success in infrastructure projects 2010 - Managing for change

Based on respondent profiles, only 14 percent of the contractors consider their existing risk management practices to be very effective, while a very small proportion, 5 percent comprising owners feel the same.

75 percent

of the respondents feel that risk management measures are either ineffective or need to be improved

“Clearly identifying the risk owners, who shall be responsible for monitoring and reporting the risks”

– General Manager (Corporate Risk Management) of a INR 2,000 crore EPC contractor in the Oil and Gas Sector

Applying best practice in managing risk

Most respondents reiterate the importance of planning the project through completion and employing relevant mitigation measures upfront. This is believed to have the largest influence in reducing overall project risks and increasing the potential for project success.

An area of concern that emerged was the lack of comprehensiveness in risk identification, leading to high-impact and low-probability risks often causing the largest adversity to projects.

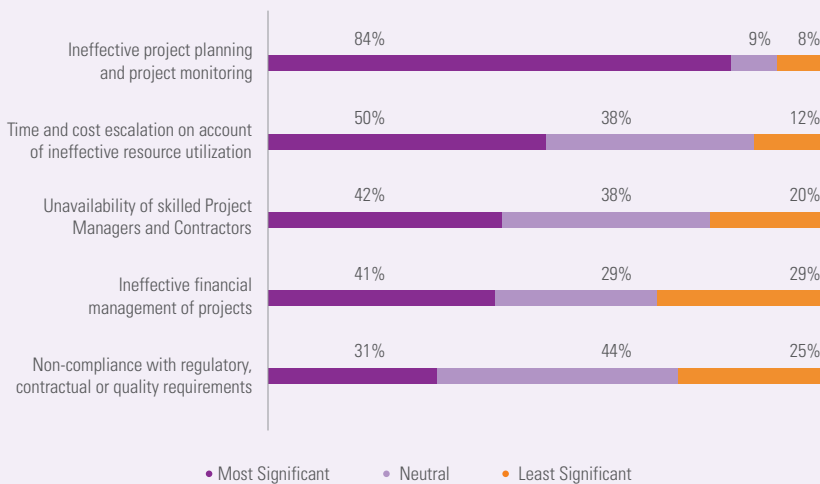
Assessment of project risks and uncertainties upfront can significantly influence project success

As infrastructure projects face multiple risks at each stage of its lifecycle, it is crucial to upfront identify and prioritise risks that pose the largest threat to project performance. Mitigation strategies devised to control such risks are then built into the project overall implementation plan itself.

Based on the implementation plan and the inherent risks therein, project requirements are drawn up and resources allocated. Specific skill sets and experience are drawn upon to manage the prioritised project risks and to devise and implement appropriate mitigation measures. Ineffective planning can thus easily lead to ineffective resource utilisation. This is exacerbated in an environment of chronic manpower shortage.

An overwhelming 84 percent respondent feel that ineffective project planning and monitoring has the most significant impact on project delivery followed by ineffective resource utilisation (50 percent) and scarcity of skilled project management talent (42 percent).

The impact of risks on projects



Source: PMI-KPMG Study on drivers for success in infrastructure projects 2010 - Managing for change

Non-compliance with regulatory, contractual or quality requirements and ineffective financial management are also identified as risks that could cause overruns.

85 percent

of the respondents feel that ineffective planning and monitoring can have the maximum impact on project objectives

“ Incentivize good RM of the project and position it correctly and capture knowledge. Move from PM to RM ”
 – Chief Risk Officer of a INR 32,000 crore construction company

62 percent

of the respondents use risk management reports to manage project risks

Periodic risk management reports, project level risk management framework and independent risk reviews can enhance project risk management

We queried owners and contractors on their preferences for measures to track and monitor risks. 62 percent of the respondents feel that periodic risk management reports can improve the potential of project risk management practices. Development of a project risk management framework with independent risk reviews and independent teams to assess and report on risks are seen as critical measures in enhancing the risk management practices.

Enhancing risk management in projects



Source: PMI-KPMG Study on drivers for success in infrastructure projects 2010 - Managing for change

Developing risk management reports for periodic discussion with project owners is identified as an area of prime importance for contractors, while Owners prefer nominating independent teams comprising in-house / external consultants, for effective risk management.

With increasing project complexity and stakeholder interdependencies, we see project risk management take on a larger role in improving the decision-making ability and guiding project teams towards successful delivery. Independent risk management reports and independent reviews can help enhance the predictability of the project outcome.

The KPMG Point-of-view

The infrastructure industry has a high level of awareness on risk management process as an effective means to tackle project uncertainties. A generic risk management process is a close-looped sequence of risk identification and assessment, risk mitigation, risk reporting and risk monitoring. With the advent of quantitative risk models and tools, the industry is clearly on the path of sophistication. However, this sophistication is limited to risk assessment only.

There are some concerns on the comprehensiveness of risk identification, given the high incidence of projects having suffered due to risks that were hitherto unidentified and hence not mitigated. Continuous risk identification and research procedures can ensure that the risk registers are comprehensive and relevant.

Critical improvements are also required to acquire a robust level of sophistication and maturity in risk mitigation. Routinely used mitigation strategies are either 'reduce', 'transfer' or 'avoid'. While 'accept'

strategies are used infrequently, 'exploit' strategies are rarely used. The industry thus, is yet to reach maturity levels at which mitigation strategies are leveraged to exploit project risks and are used as means to maximise project potential. 'Exploit' type of mitigation strategies can be devised to exploit project risks to the extent acceptable, by extending risk exposure to a point just within the risk appetite. Hence, while the project delivery team and oversight team might opt for avoidance, transference or reduction of risk levels, confident project delivery teams might want to choose to exploit certain risks thus maximising the project potential. While there are rare incidents of this having been done, the industry is far from seeing such benefits arising from systematic leveraging of such strategies.

Risk reporting and monitoring are the remaining links in the risk management loop that are critical for its effectiveness. Evolving information systems can make available timely and accurate project information for reporting purposes. The information reported should comprise early warning

indicators and provide content that facilitates decision making. On the monitoring front, the industry sees a clear benefit in independent teams, either internal or external, conducting risk reviews and feeding the oversight team with independent reports on the status of risk management. The role of the independent risk team goes beyond reporting and must include the responsibility to driving a risk-aware culture across the organisation.

With the required sophistication and, sustained investments in developing a risk-aware culture and a rigorous risk management discipline, the infrastructure industry is on track to realise the benefits of maximised project potential.



RESOURCE SHORTAGES A CAUSE OF CONCERN

Shortage of skilled project managers is a clear root cause for project overruns. While the industry plays a desperate game of catch-up, resource planning and monitoring are seen as important strategies in improving utilisation metrics.

There are significant strides to be made in the quality of project management training offered externally. Structured and improved training programs and career-building options are identified as the most effective long term strategy for overcoming the resource crunch. Over the short term, internal training is considered necessary to help ensure the quality of available talent.

Availability of skilled project managers has the largest influence on delivery of projects

Over the past two decades, the flow of talent into infrastructure has been gradually drying up as resources have sought alternative – and often more lucrative – career options. This is felt across various stages of project implementation.

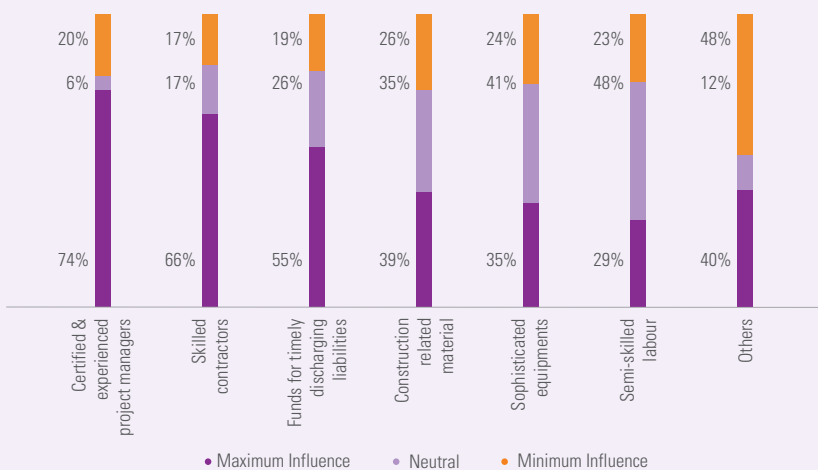
53 percent of the respondents agree that non-availability of skilled labour is a root cause for project delay while 16 percent strongly agree that this is an area of grave concern.

Of the respondents surveyed, seven in ten feel that the dearth of trained / certified and experienced project managers has the largest influence on timely delivery of projects.

74 percent

of the respondents feel that shortage of project managers has the largest influence on delivery

Ranking of resource constraints in terms of its influence on delivery of projects



Source: PMI-KPMG Study on drivers for success in infrastructure projects 2010 - Managing for change

This is reflected across a larger set of analysis with 82 percent of the respondents whose projects are delayed and 86 percent of the respondents whose projects are facing cost overruns cited the lack of trained / certified and experienced project managers as a reason for negative performance.

12 percent

of the respondents see the current educational courses as effective

“ Out of Eight Semesters of Engineering, the final & Pre-final Semesters should be devoted to Onsite Training ”

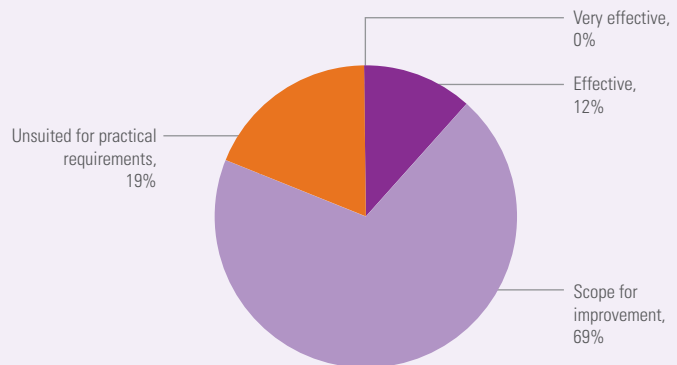
– Asset Manager of a leading private equity group with over INR 10,000 crore of assets under management

Clear scope for improvement in the quality of educational / professional project management training offered

Increasing demand for project management skills has spawned educational courses and professional training programs. A relatively larger range of institutes beyond the limited number of post graduate institutions endeavour to attract engineering talent for specialist training. Despite this, the availability of training program is limited and unfortunately still evolving.

88 percent of the respondents feel that the quality of educational / professional project management training offered to interested candidates is either ineffective or has a clear scope for improvement. This is a grave area of concern for India, given the huge demand for and criticality of skilled talent required for delivering infrastructure projects.

Existing educational/ professional courses



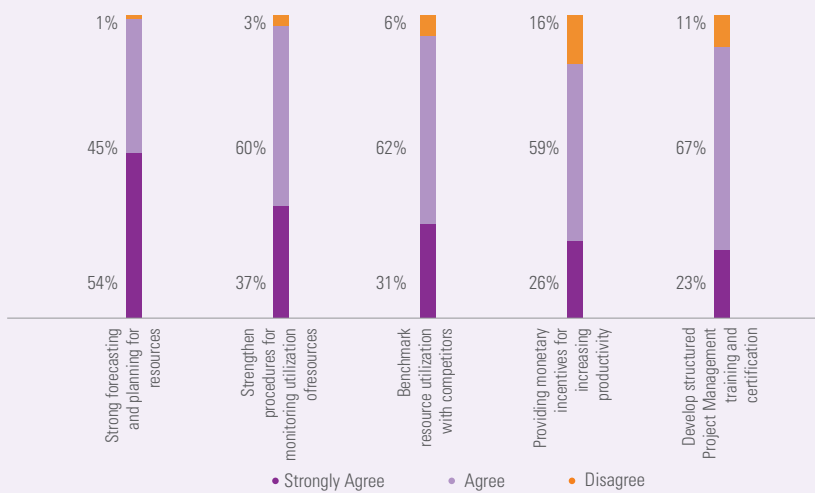
Source: PMI-KPMG Study on drivers for success in infrastructure projects 2010 - Managing for change

Resource planning and monitoring are key strategies in improving utilisation metrics

In wake of this skills shortage, respondents are developing strategies, albeit short term, to enhance utilization and efficiency of available resources. An overwhelming, 99 percent respondents feel that strong forecasting and planning for resources to eliminate last minute surprises is an effective measure to address shortages. This is followed by 97 percent of the respondents indicating that strengthening procedures for monitoring utilization of resources is an effective strategy.

Development of structured project management training and certifying project management skill sets is also seen as a strategy to help ensure relatively longer term and larger stock of project management skills supply. However a certain segment of our respondents (11 percent) disagreed on the effectiveness of training programs and ability of certification of project management skills in delivering higher utilisation of talent. This sentiment is potentially driven by the quality of training programs available currently.

Strategies to improve utilization of available resources



Source: PMI-KPMG Study on drivers for success in infrastructure projects 2010 - Managing for change

“ Incentives for project and group performance have reflected positively on the project performance ”

– Senior Executive Vice President of one of the top three EPC companies in the cement sector

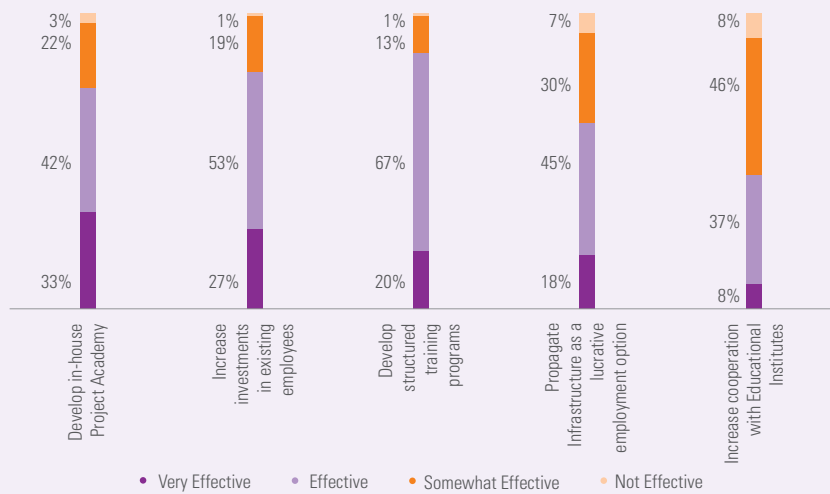
“ Hire & Train PM personnel even if there are no projects & bench if created ”
 – Chief Risk Officer of a leading contracting company specialising in Roads and Bridges Sector

Developing in-house academies is the most effective strategy to enhance resource quality

We surveyed respondents on measures that could be adopted to enhance the quality of the project management skills available and combat the skills deficiency faced by the industry. Given the poor quality and limited number of external courses, large companies have opted to establish captive technical training institutes. This is reflected in the survey with 33 percent of the respondents identifying in-house project academies as highly effective.

A common sentiment emerging is the perceived need for company-specific exposure and training required for project teams as opposed to the generic project management skills and training imparted externally or through certification. We see the skew in results changing over a period of time, with well-defined project management systems and processes gaining prominence and succeeding the people-dependent culture prevalent currently. This is also likely to lead to project management resources becoming more fungible across projects.

Strategies to overcome resource shortages and skill set deficiency



Source: PMI-KPMG Study on drivers for success in infrastructure projects 2010 - Managing for change

Hiring and training project management personnel even if this leads to creation of a project management bench, awarding loyalty bonus to maintain higher retention ratios and adopting ITI (Industrial Training Institutions) as a part of internal CSR measures in developing of skilled and quality resources are also cited by respondents as effective resource generation strategies.

Mandatory on-the-job training is the most effective in ensuring adequacy of skills

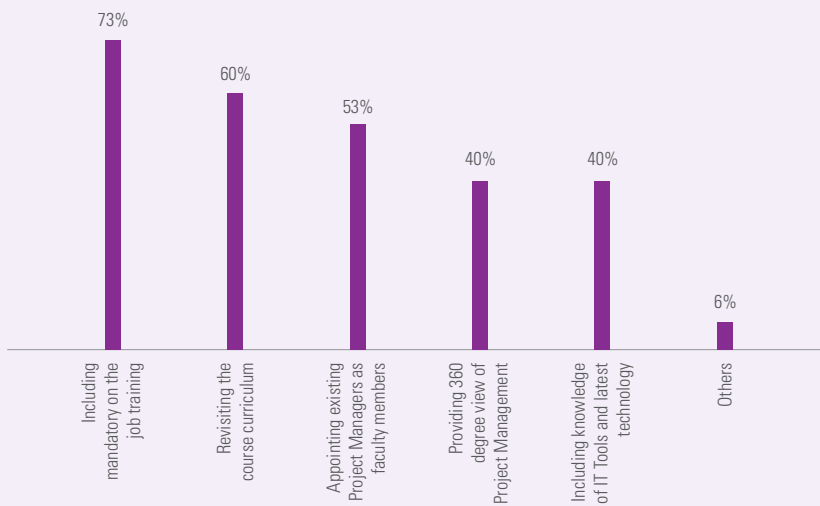
In the same vein, of the available strategies to leverage externally trained project professionals, mandatory on-the-job training is identified by 73 percent of the respondents as most effective.

Revisiting the course curriculum jointly with members of the industry (60 percent) and appointing existing project managers as faculty members to provide practical experience (53 percent), emerged as the other important strategies to enhance the quality of project management courses.

73 percent

of the respondents feel need for mandatory on the job training

Effective strategies to enhance professional courses



Source: PMI-KPMG Study on drivers for success in infrastructure projects 2010 - Managing for change

The KPMG Point-of-view

Over the past two decades, the flow of talent into construction has been gradually drying up as candidates have sought alternative – and often more lucrative – career options. Facing a desperate game of catch up, the industry needs a genuine collaboration between project owners, contractors and governments to ensure quality talent is developed and made available, in the numbers required to support growth projections.

The industry could do well to follow the lead of other sectors, which in similar circumstances have focussed on building stronger links with schools, universities and businesses as part of a sustained campaign.

Modest efforts have been initiated by the industry, which include sponsoring and setting up institutions that train young students in the required areas of project management. However, the companies often face difficulty in maintaining the interest levels and retention in an environment of intense competition with other lucrative job opportunities.

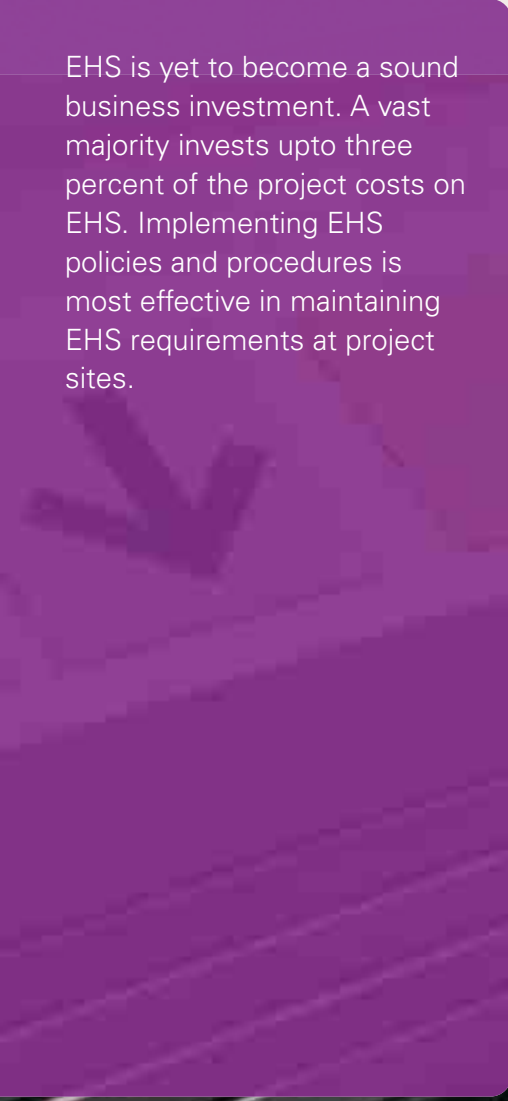
Job rotation, incentive-based pay, family friendly practices, hiring of specialists to fill short term gaps, and grooming of potential project managers are some of the techniques that have seen success in India. Career planning is a core area that can change the flow of talent back towards the industry. Creation of career destinations for experienced project managers, such as PMOs for example, can allow quality talent to be retained by offering a larger role for oversight. This also allows junior project managers to take on additional line responsibility for individual projects and enhance their project management skills through mentoring by senior project managers. Flexibility in hours and, encouraging inclusiveness and diversity amongst employees are also seen as potential measures in the long term.

Another obvious area of reform is in the inclusion of specific project management skills: estimation, quantity surveying, planning, contract engineering amongst others, into the available course content. Specific inclusions can help jump-start skills development, for the industry that currently depends on such talent to be developed in an otherwise unstructured manner. As a long term strategy, a complete overhaul of the project management course material is a must. For this, a collaborative approach between the industry and institutions will be required.





ENVIRONMENT, HEALTH AND SAFETY A SOUND BUSINESS INVESTMENT



EHS is yet to become a sound business investment. A vast majority invests up to three percent of the project costs on EHS. Implementing EHS policies and procedures is most effective in maintaining EHS requirements at project sites.



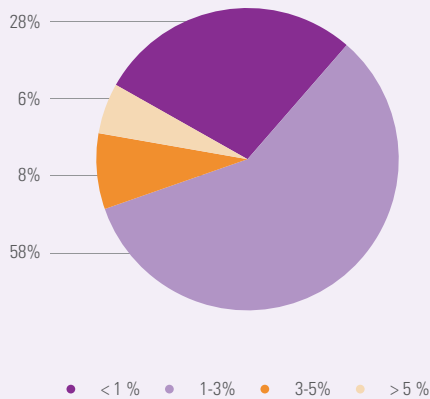
emergency

With increased international and domestic scrutiny, EHS investments are becoming strategic priorities for companies, both on and off project sites. Ensuring effective measures for maintaining environment, health and safety at projects is seen as imperative not only from compliance perspective but also from social and economic perspectives. 40 percent of the respondents surveyed are of the view that EHS is a sound business investment and only 5 percent are of the opinion that it is costlier than production, implying an unsound investment.

Investments in Environment Health and Safety (EHS)

58 percent of the respondents indicated that their companies invest 1-3 percent of their total project cost on EHS. However, a significantly low quantum (6 percent) of the total respondents, invest more than 5 percent of their total project cost towards enhancing EHS.

Percentage of project costs assigned for compliance with EHS



Source: PMI-KPMG Study on drivers for success in infrastructure projects 2010 - Managing for change

Majority of the respondents invest

1-3 percent

of the project costs for EHS

“ It is the moral obligation and responsibility of the individuals and the society at large ”

– General Manager of one of the largest power transmission companies

90 percent

of the respondents feel that EHS training, safety signs, policies and monitoring are effective for EHS compliance

“ Rewards for compliances and exemplary EHS behaviour is a great motivator ”

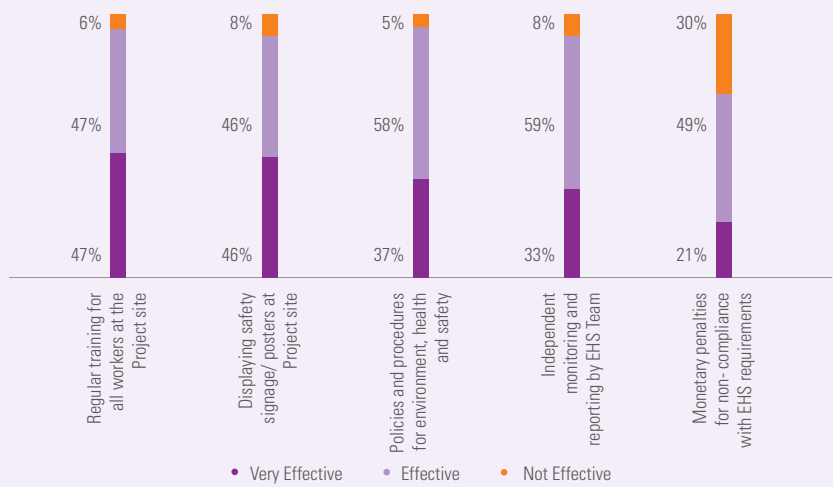
– Head of Finance of a major LNG infrastructure developing company

Developing policies and procedures is most effective in maintaining EHS requirements

To maintain the EHS requirements, 47 percent of the respondents opine that routine training for all project site personnel is of prime importance. Respondents feel that with on-the-job training, displaying safety signage and posters at project sites are also effective in maintaining EHS at desired levels.

A sizeable 30 percent of the respondents feel that monetary penalties for non-conformance to EHS requirements can prove ineffective.

Effective measures for ensuring EHS Compliance



Source: PMI-KPMG Study on drivers for success in infrastructure projects 2010 - Managing for change

The KPMG Point-of-view

An environmentally responsible, equitable and inclusive approach is necessary for achieving the desired project benefits. While sustainable infrastructure grows as a concept in India, limited regulations and varying levels implementation across projects limit the benefits of consistent sustainable development.

With only 40 percent of the respondents indicating EHS as a sound investment, the industry has to make significant strides in accepting and embedding EHS concepts into routine practice. EHS is often seen as merely site safety requirements by a majority of small and medium projects. Direct costs of safety officers are thus the often-used criteria for decision making on the levels of EHS investment. A wider and more aware EHS agenda and investment decision framework is required.

Currently available technology can create green buildings and infrastructure for as little as five percent of the project cost. The energy efficiency and limited waste generation are often underestimated, leading to companies opting for traditional designs and users accepting the consequent higher operating costs.

As EHS evolves, sustainable development is the unequivocal direction. Companies are realizing that a 'green' reputation is a competitive advantage.

EXTERNALITIES A MAJOR DETERRENT

External agencies such as the regulatory authorities and land owners have a significant influence on the project outcome. While planning upfront to address the influence of external factors is done in majority of the cases, hindrances were still experienced.

Public Private Partnership and transparency in infrastructure spending are best suited for maximising the infrastructure industry potential.

External factors adversely impacted project delivery

External factors such as land owners, regulatory authorities, local population, insurance agencies, financial institutions and environmentalists influence the completion date significantly. Around six in ten respondents feel that project execution is affected on account of external bodies.

Hindrances in smooth project execution on account of external bodies



Source: PMI-KPMG Study on drivers for success in infrastructure projects 2010 - Managing for change

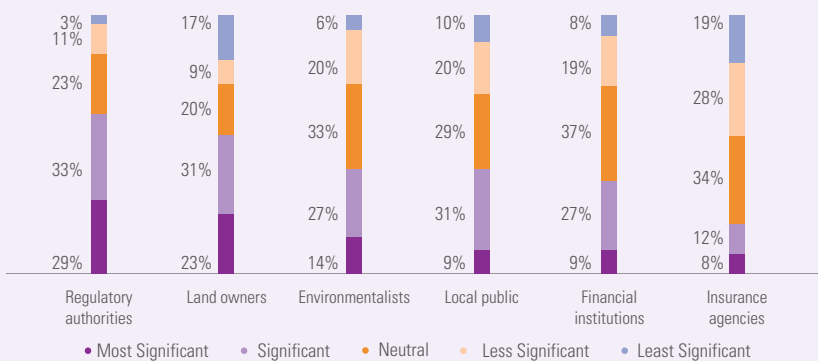
64 percent

of the respondents' projects are affected due to external hindrances

Regulatory authorities have the largest influence

Regulatory authorities are required to be consulted with and approvals sought, at each stage of the project, right from the initiation of the project till completion. Concurring with this 62 percent respondents believe that amongst external factors, regulatory authorities have the largest influence in adversely affecting project delivery. This response is closely followed by the influence land owners wield on the project outcome.

External factors affecting Project Delivery



Source: PMI-KPMG Study on drivers for success in infrastructure projects 2010 - Managing for change

Planning to address the influence of project externalities

Approximately 67 percent of the respondents indicate that exercises were conducted at the project initiation stage itself to identify external stakeholders that could impact the project. Project plans were made in as many cases, to address the influence that these external stakeholders could have on the project outcomes.

Evaluation of external bodies that could impact the project



Source: PMI-KPMG Study on drivers for success in infrastructure projects 2010 - Managing for change

Preparation of a project plan to engage with the external bodies at different stages of the project



Source: PMI-KPMG Study on drivers for success in infrastructure projects 2010 - Managing for change

“Incorporation of public services can create better quality and efficiency”

– Promoter of a
INR 3,000 crore urban
infrastructure company

Public Private Partnerships and transparency in project selection can yield best results

Around nine in ten respondents feel that greater use of PPP can improve effectiveness of government spending on infrastructure. PPP offers joint ownership and helps ensure the optimal mix of social and capitalistic influences to help ensure that the larger benefits of the project are delivered.

Transparency is still an issue in the infrastructure projects with 63 percent of respondents citing that transparency in infrastructure planning and project selection should be enhanced for better utilization of the scarce resources.

The KPMG Point-of-view

Project owners and contractors are the first in the line to be affected due to any project failures. The survey responses highlight the fact that identification of all stakeholders and fair assessment of their needs is vital to owners and contractors. A detailed exercise to identify stakeholders and their needs, integrate their requirements into the project plan and delivery is of interest to owners and contractors. Addressing the needs of all stakeholders and ensuring inclusiveness is the key for success of large projects with a high proportion of affected persons.

On the regulatory front, forward steps have been taken by the governmental authorities in relaxing regulatory procedures and making the approvals process more efficient. Some of the steps that can be taken include:

- Selection of contractors and consultants could also be based on intangible factors such as quality assessment and past experience along with measurable factors such as cost and time
- Changes in land availability norms by securing majority of the land before sending out RFP/ tenders could enhance project performance. Inability to secure it before the project is awarded could be penalized based on its impact on the project
- Introduce accountability in nodal and other government agencies to bring confidence and trust amongst private players. Engage such agencies in periodic performance measurement made strictly on the basis of quantitative metrics and past performance
- Special project monitoring cell comprising of experienced project management professionals could be established to supervise mega projects facing time delays and cost overruns. Various models such as Build-Transfer (BT), Buy-Develop-Operate (BDO) and Build-Own-Operate-Transfer (BOOT) should be evaluated based on the project requirements
- The nature of contracts could be changed from item rate to lump-sum contracts based on project necessities. This would ensure timely completion of the project and lesser number of disputes with contracts and EPC firms
- Project grievance teams can be established for each mega project to resolve issues arising between contractor and government agency. Quick arbitration mechanisms could be devised for reducing delays in project schedules
- Reforms on the educational front could be introduced along with private participation where skilled and semi skilled workers in the industry could obtain on the job training and obtain certification

While several more such steps are desired, the industry can play a larger role in creating the necessary awareness and working collaboratively to hasten this process of reform.

CONCLUSION

While the Indian infrastructure industry has made major strides, on-ground results sound caution. The industry needs to work collaboratively towards successful delivery, and enhance investments in resource development, to help ensure adequacy of quality talent.

Execution of projects within budget and schedule is critical to achieve project success and deliver on the Infrastructure industry's growth projections. On-time and within-budget delivery will require project owners and contractors alike, to embed project management as an organisation-wide process and to ensure that leading practices are implemented. While the implemented processes evolve, owners and contractors can benefit from independent monitoring through project management office reviews and oversight.

The industry can do well by implementing a collaborative approach. Some practices seen internationally are 'integrated project teams' housed in the same office, sharing reports that tracking project progress jointly. Each party's costs are effectively transparent, creating an atmosphere of mutual trust and dependence. The teams work as one towards project delivery. Practices that drive collaboration are seen as cornerstone enablers of project success.

Risk management evolution at a project level will see owners and contractors measuring their exposures against management-defined risk appetites. This could lead to traditional mitigation strategies transitioning to the systematic use of 'exploit' type of strategies. Such strategies are likely to support delivery

teams in demonstrating enhanced value creation through sustained investment in risk management.

Enhancing resource utilisation through better planning and monitoring is important. However this can suffice only as a short term measure. Affirmative steps need to be taken to help ensure quality education and professional project management training. Companies need to invest more in talent creation as opposed to the current investment focus on attraction and retention.

Environment, Health and Safety could become a differentiator and organisations embracing the sustainable development upfront could stand to benefit earlier. Companies may need to go beyond policies and procedures to embed EHS concepts in routine operations, be it strategy, design, planning, execution or operations.

India is well on its way towards regulatory reforms and efficient approvals although significant progress yet remains. The industry can play a larger role in creating awareness and working collaboratively with authorities to hasten this process of reform. Finally, an equitable and inclusive approach by all project stakeholders is necessary for achieving the desired project benefits.

APPENDIX

Sectoral break up of on-going infrastructure projects in India

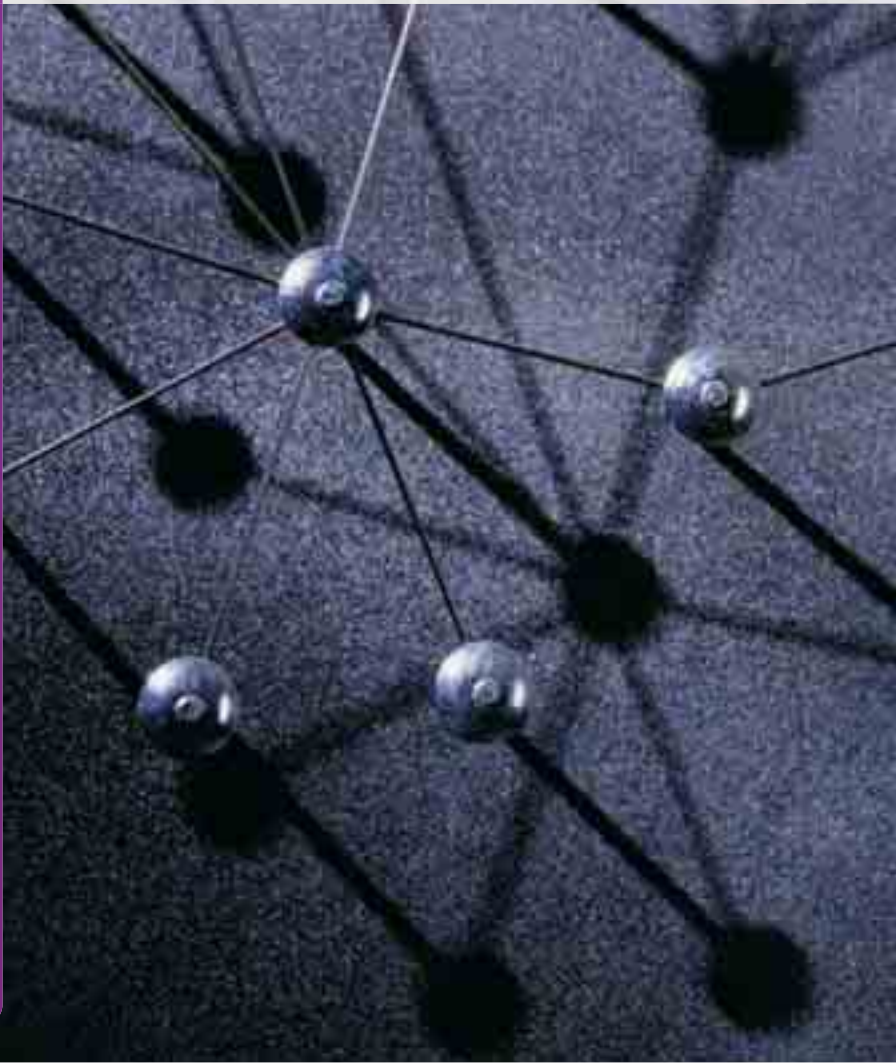
According to Ministry of Statistics and Programme Implementation (MOSPI), there were 951 on-going infrastructure projects with an anticipated cost of INR 6,07,188 crore. The mega projects constitute around 68 percent of the total investment. This reflects the huge scale and capital outlay for developing infrastructure in India.

SECTOR	Mega Projects (INR 1000 crore and above)		Major Projects (INR 100 crore - INR 1000 crore)		Medium Projects (INR 25 crore - INR 100 crore)	
	No. of Projects	Anticipated Cost	No. of Projects	Anticipated Cost	No. of Projects	Anticipated Cost
Atomic energy	5	24123	0	0	0	0
Civil aviation	2	3216	7	1617	22	1183
Coal	8	16757	32	10421	89	4949
Steel	6	42453	24	6921	24	1574
Petroleum	32	119807	27	10953	1	100
Power	36	144995	48	20261	4	312
Railways	11	29797	134	53544	112	6889
Road transport & highways	NIL	NIL	178	53641	18	1234
Shipping & ports	5	7452	14	6431	34	1421
Telecommunication	3	3983	33	10413	8	644
Urban development	2	15071	1	135	25	1050
Water resources	1	1187	0	0	0	0
Total	112	412931	499	174779	340	19477

Source: Ministry of Statistics and Programme Implementation



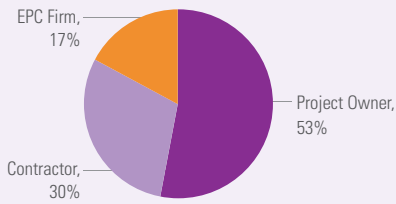
PARTICIPANTS AND METHODOLOGY



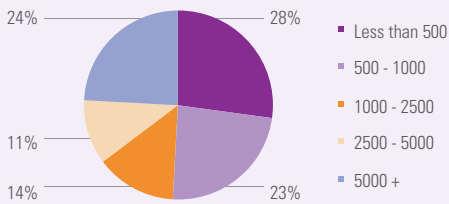
Survey responses were gathered through personal interviews and online responses from 109 senior leaders serving as CXO's and senior project management personnel in leading companies operating in the infrastructure industry, between November 2009 - February 2010

The interviews were conducted by senior representatives from the member firms of the KPMG International Cooperative specializing in the infrastructure industry, with the questions reflecting current and ongoing concerns expressed by the clients of the member firms.

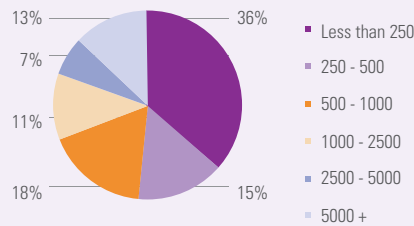
Participant's Profile



Participant's Company Turnover (INR Crores)



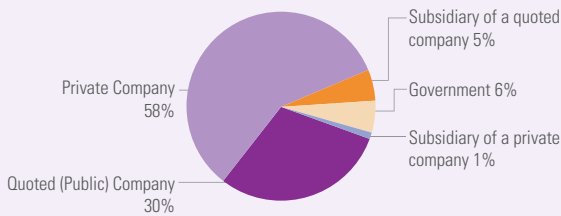
Participant's Annual Capital Project Budget (INR Crores)



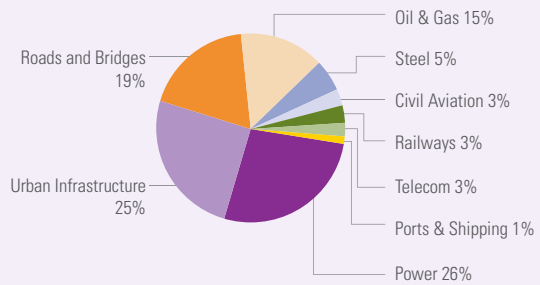
Source: PMI-KPMG Study on drivers for success in infrastructure projects 2010 - Managing for change

Distribution of organizations selected

Participant's Organization Status



Sectors covered



Source: PMI-KPMG Study on drivers for success in infrastructure projects 2010 - Managing for change

ABOUT KPMG IN INDIA

KPMG is a global network of professional firms providing Audit, Tax and Advisory services. We operate in 146 countries and have 140,000 people working in member firms around the world. The independent member firms of the KPMG network are affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity. Each KPMG firm is a legally distinct and separate entity and describes itself as such.

KPMG in India, the audit, tax and advisory firm, is the Indian member firm of KPMG International Cooperative ("KPMG International.") was established in September 1993. As members of a cohesive business unit they respond to a client service environment by leveraging the resources of a global network of firms, providing detailed knowledge of local laws, regulations, markets and competition. We provide services to over 2,000 international and national clients, in India. KPMG has offices in India in Mumbai, Delhi, Bangalore, Chennai, Hyderabad, Kolkata, Pune and Kochi. The firms in India have access to more than 2000 Indian and expatriate professionals, many of whom are internationally trained. We strive to provide rapid, performance-based, industry-focused and technology-enabled services, which reflect a shared knowledge of global and local industries and our experience of the Indian business environment.



ABOUT PROJECT MANAGEMENT INSTITUTE (PMI)

Founded in 1969 by working project managers, PMI's primary goal is to advance the practice, science and profession of project management throughout the world in a conscientious and proactive manner so that organizations everywhere will embrace, value and utilize project management and then attribute their successes to it. The PMI community has over 500,000 members and credential holders. With 250 chapters in over 70 countries, PMI Membership supports and encourages all project professionals to pursue a new balance of global and local best practices, relationship building and sharing resources.

Global standards are crucial to the project management profession and ensure a basic project management framework is applied consistently worldwide. PMI offers 12 global standards (including Program and Portfolio Management) and a circulation of nearly 3 million 'A Guide to the Project Management Body of Knowledge (PMBOK® Guide)'.

PMI's credentials and professional development opportunities can help business professionals start, build or advance their careers in project, program and portfolio management. Some of the key credentials offered are Certified Associates in Project Management (CAPM®), Project Management Professionals (PMP®), Program Management Professionals (PgMP)®, PMI Risk Management Professional (PMI-RMP), PMI Scheduling Professional (PMI-SPSM)

The PMI Registered Education Provider (R.E.P.) network consists of training organizations, executive development centers at universities and in companies that provide quality project management training services. Their educational offerings have been assessed by PMI. During this assessment, R.E.P. organizations have demonstrated

their capability to provide effective project management training. There are more than 1,200 organizations that belong to the Registered Education Provider Program (R.E.P.) in over 60 countries.

PMI is the only project management association with a dedicated research arm, responsible for initiating academic research taking place at institutions around the world, and guiding and coordinating PMI-funded research. To date, PMI has invested US \$16 million in project management research and has been directly involved in the release of more than 350 publications. PMI's Project Management Journal, published in partnership with John Wiley & Sons, is a leading academic journal devoted to advancing the discipline of project management.

The PMI Global Accreditation Center for Project Management (GAC) is the world's leading global accrediting body for project management degree programs. The GAC's mission is to advance excellence in project management education, worldwide, and to ensure that GAC accredited programs meet current and anticipated talent needs for qualified project professionals. There are over 50 degree programs at more than 20 academic institutions currently accredited by PMI GAC.

With 7 Chapters in India (Delhi, Mumbai, Bangalore, Chennai, Hyderabad, Pune & Trivandrum) the PMI community which includes members and credential holders exceed 27000 in India. The charter of PMI India office is to promote Project Management across Govt, Academia & Organization and grow the community of professional project management practitioners.

For more information about PMI, please visit the website at PMI.org.

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