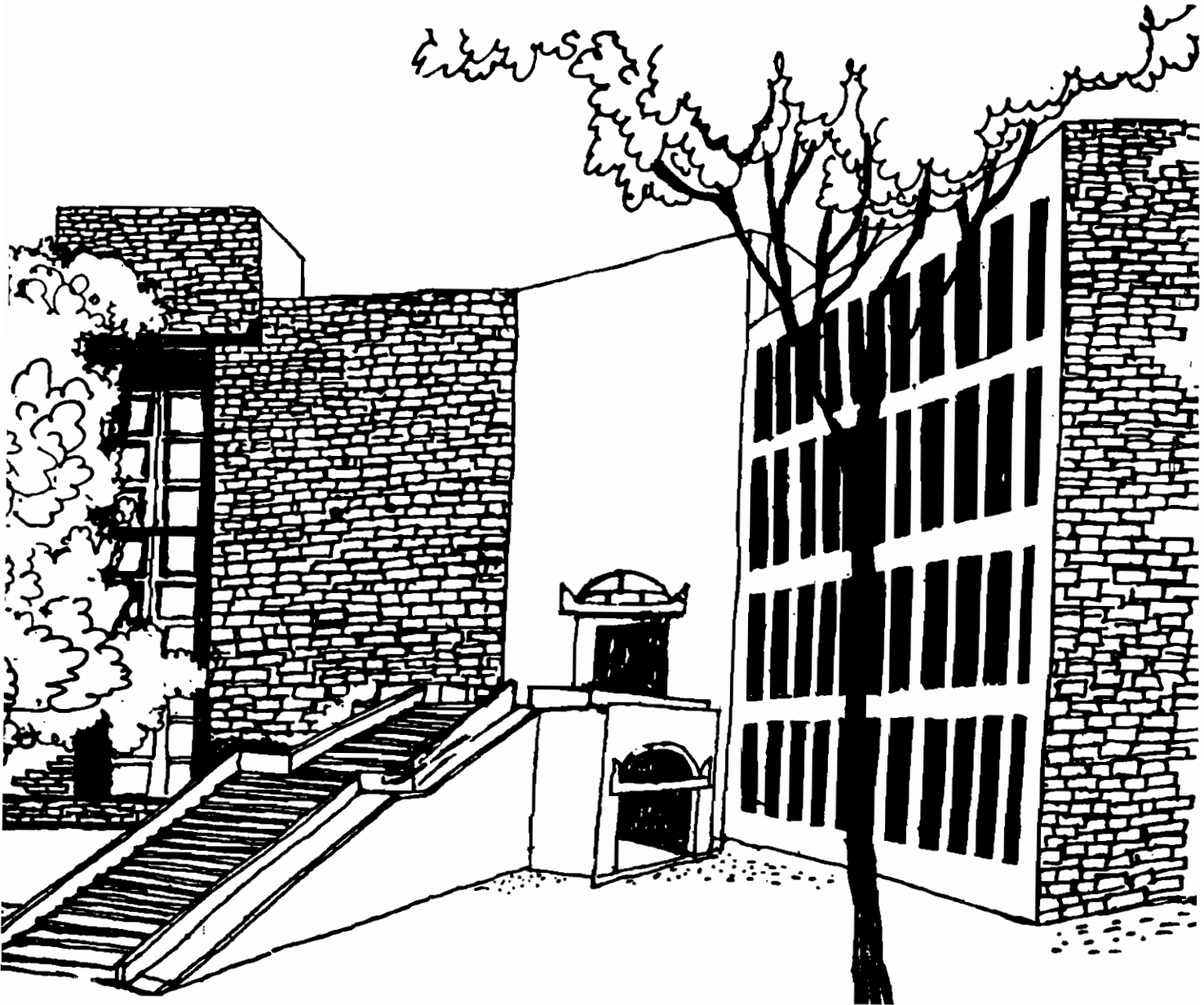




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# Working Paper



# **Project Management : Comparison of Practices in India and U.K.**

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# **Project Management : Comparison of Practices In India and U.K.**

## **1. Projects Relevance and Impact**

Resources are committed primarily for two purposes. In one case it is spent on meeting ongoing requirements and in other case for creating new facilities. The first category is classified as operational requirements and the second project. However, the definition of project as an one time endeavour, encompasses many areas other than creation of new facilities. It is possible to associate all types of projects to creation of facilities physical or otherwise and resulting in "benefits" to a set of beneficiaries.

In a developing country a significant portion of the national budget is allocated to creation of new facilities on projects whereas the investment in projects by developed nations as a proportion of the total expenditure is rather less. Though in terms of absolute amount the money spent on projects may be many times greater in developed nations compared to those in developing nations. In fact one can link the stage of development of a nation to the proportion of the total expenditure on projects or new facilities. The less the proportion the more developed the nations are. It can be seen in the case of planned economies of the developing nations, the proportion of allocation of the national expenditure on new facilities progressively coming down from one planning period to the next. All these new facilities constitute what are called major projects. The performance of these major projects has significant economic and developmental consequences. The economic consequences is not limited to lower profitability or longer gestation period but depending upon the extent of non-performance may result in substantial lengthening of the pay back period and in extreme case may result the endeavour being economically sick from the very beginning. In a developing country the cost incurred in major infrastructural facilities project being a significant portion of the national expenditure, the economic situation in terms of wealth generation and growth may be adversely affected as a result of non-realisation of revenue from investments in projects. Apart from the economic consequences, in the case of a developing country it has got undesirable effect on development process due to the multiplier effects of the projects. One can consider the case of an irrigation project. In case of delay and cost overrun in such a project, the immediate effect is increase in the cost of benefit in the form of higher water charges due to cost overrun and also delay in realising the benefits. This is likely to effect the cost benefit ratio of the project unfavourably and also longer payback period. However, that is not the end of it. The impact will be far greater. Timely non-availability of irrigation water will adversely affect the agricultural output resulting in lower revenue for the farmers and the whole chain of related activities. In a developing country this means slowing down of the development process. The expenditures on such irrigation projects constitute a significant portion of the national resources. The delay and cost overrun have impacts on subsequent investments on the other developmental projects. It is on this context, that the non performance of the projects have crucial implications for a developing nations though the impact on the project per se may be the same in both developing and developed countries. It has been estimated that the cost of delay of a super thermal power project by one day to the nation(developing) is approximately 5% of the cost of the project. This high cost of delay has been arrived at by taking into account the multiplier effect of electrical energy in a

developing nation. While it is important to manage the projects so as to complete within the planned cost and time in all cases, it is more relevant in the case of developing nation for the undesirable impact on the developmental process.

## **2. Performance of Projects and Related Issues**

A close look at the performance of projects in both developing and developed nations, one can find a high degree of similarity. The failure of projects are common rather than an exception in both cases. However, the severity of effect being different, as discussed earlier, these are being treated and dealt with differently. Here we are defining failure of projects as those which are not being completed within the planned time and cost. A project can be treated as a failure in spite of being completed on time and within cost budget, if the benefits of the project are not being realised or it fails to fulfil such other criteria of success. A case in point is an iron ore concentrate project in India. The hardware facilities of the project were completed within the planned time and cost. However, on completion the output from the project could not be diffused for deriving the benefits due to various externalities. As such the project may not necessarily can be considered as successful.

In developing countries like India, most major projects are in the public sector, partly due to government policy and partly due to inability of the private sector, at its present state of development, to finance major projects. As a result data on performance of major projects are readily available; which reveal overruns between 100 and 200 percent of budgeted cost and time in most major projects during 70's and early 80's. In developed nations like U.K. and western Europe large number of major projects are in the private sector. Summary data on the performance of all such projects are not readily available. However various studies have revealed substantial cost and time overrun in these projects. According to Morrisand and Hough<sup>1</sup> the track record of projects is fundamentally poor, particularly for the larger and more difficult ones. Overruns are common and projects are often completed late or over budget, do not perform in the way expected, involve overstrain on participating institutions or are cancelled prior to their completion after the expenditure of considerable sums of money<sup>1</sup>. Duffy and Thomas<sup>2</sup> also express similar views by saying projects continue to be completed late and over budget. Though precise data are difficult to come by, it is clear from some specific cases that the time and cost over runs are substantial. As a result in many cases project failures have drawn public criticisms.

There have been cases where the delays in projects have resulted in obsolescence of technology. In developing countries the industrial projects are often planned with transfer of imported technology from developed nations. The age of the technology transferred to developing nations in many cases is very high(old) and not the state of art technology. The delay of these types of projects results in high cost of technology transfer and age of the technology being high, it soon becomes obsolete. This coupled with the high cost of the project, associated delays, makes the whole venture non competitive both globally and nationally. As a result the unit becomes sick due to obsolete technology and non competitive operation.

Studies by financial institutions in India on the performance of a large number of projects have revealed a significant cost and time overrun in most of the projects. In addition it has also been observed that the performance of a project is also related to its size. The larger the size of the project the greater is the possibility of time and cost overrun. The extent of overrun is also proportional to the size of the project which can be defined in one or more of the following : cost, time and the number of activities. However, in general it can be said that larger the projects, more complex it is. In the network context, a project network is complex if it has large number of parallel paths. In the operational term it means large number of agencies being involved in the project and the inter-relationship between these agencies and relative dependence are very high. The project manager has to control all these complex relationship, in order to control the project.

In a project decisions are to be taken within a short period. In other words the response time or the reaction time of the project manager has to be very, very short. Often the project manager has to respond with a limited information and information not being of very high quality. As a result the quality of decision by the project manager depends on his ability to comprehend the project situation. The ability to comprehend or comprehensibility of a project decreases as the project becomes more complex or big. This in turn explains the poorer performance for larger projects and also a possible direction for strategic action in project management.

In developed countries also, it has been observed that performance of projects is dependent on the size of the project. This fact is kept in view while appointing project manager for various projects. Usually the smaller projects have lower margins for the construction firm and relatively higher margins for larger projects. On the other hand the probability and the extent of overruns are lower in smaller projects as opposed to larger projects. Considering these factors, many U.K. construction and other firms involved in project related tasks, depute junior and less experienced managers to smaller projects and experienced senior managers to large projects. This provides contingency against risk of non-performance.

### **3. Analysis of Project Performance**

The failure of projects are of concern to everyone involved in the project, viz. promoter, financiers, beneficiary and others. In addition it is of national concern of varying degree, being fairly high for developing nations. Worried by the significant overrun in projects and its impact on the national economy, a new ministry was formed by Govt. of India in 80's, the ministry of programme implementation. The major tasks of the ministry is to oversee the performance of major projects and to facilitate timely and within budget completion of projects. The concerns of project overruns have led to various studies to find out the causes for such overruns. In most cases the failures are related to organisational issues, external environment, funding, contractor's performance, people and such other areas<sup>3</sup>. Very rarely the failure of projects are related to technical parameters or technological issues, except when the project itself is in the high technology areas or in areas where technology has yet been proven. Many projects overrun<sup>1</sup> because of circumstances external to the project, price escalation, government or client induced changes, strike etc. Yet the performance of project has to be improved through actions by agencies internal to the project. It has also been observed in many cases

that these are not difficult to achieve. Further analysis also reveals that unrealistic budgets are not being set due to ignorance but to meet certain criteria of approval and funding. In such cases projects are designed for failures from the very beginning. Such cases are less frequent in developed nations like U.K. but are common in developing nation like India. In India, many projects have to compete for the limited available resource (money), which encourages under estimation of costs or over estimation of benefits or both. These are often done (manipulated) knowingly. There are other cases where the time and cost budgets are being continuously revised (upwards), once the project is underway. This practice of revising the budget is common in both developing and developed nations. However, in the case of major projects in developing nations such revisions are subjected to approval not only by the promoting agencies but also by Govt. departments. As a result the frequency of such revisions are rather less in India, though the extent of revision is quite high. The performance of a project is often measured in respect of the last revision. This leads to "cover-up" of non performance. As a result the available data on cost and time overruns of projects are not the "true" reflections of the actual extent of overruns. All the same one can definitely conclude that the extent of time and cost overruns in projects are generally very high.

Study on some of the public sector projects in India<sup>4</sup> indicated that the performance of the project is considerably influenced by the project manager (project leader) operating under the same external environment. Though it is very difficult to come up with qualities that a project manager should possess for leading a project successfully, it has established firmly that a good project manager is essential for good performance of a project. In India, rarely a conscious effort is made in identifying and deputing a good project manager for a project. In U.K. selection of a project manager is of concern to the authorities and as far as possible a person, who is thought to be able to manage the project successfully, is assigned the job. In some cases the promoters ask for particular person to be assigned by contractors as project manager.

Flow of fund is another area which has affected the performance of project, specially developing nations like India. There are many projects, where the pace of work had to be slowed down due to insufficient flow of funds. This affects the payments to the contractors and subsequently mobilisation of resources for the project. A general tendency by many project managers in India, is to ask for more funds in anticipation of cutback. However, the situation in U.K. is somewhat different. Very rarely the progress of any major project is slowed down significantly due to non availability of fund. But the effect of non availability of fund for project is well realised by the project authorities. As a result substantial effort is put in assessing the likely funds requirements for many future periods on a continuing basis. Arrangements for provisioning of funds to meet any anticipated shortfall in funds flow is made very much in advances, so as not to affect the pace of project implementation.

On the whole the key factors affecting the project performance in both developing and developed countries are same. The difference is in the way these are managed and the degree of severity with which they occur.

#### **4. Project Cycle and Management Team**

In order to analyse the approaches to management of projects, it is necessary to look at the various components of the project life cycle. Broadly, the project life cycle can be divided into three components(phases) :

Phase I	-	Project Feasibility
Phase II	-	Project Implementation
Phase III	-	Project Operation

Project feasibility primarily looks at the costs to be incurred in the project and benefits to be derived from its implementation. Basic objective of feasibility is to analyse the desirability of investments to be made in the project. Once the investment decisions are made, project implementation takes care of putting up the physical and other facilities to realise the scope of the project. Finally project operation concentrates on realising the benefits as contained in the project feasibility. The skills required in the three phases of the project life cycle are different and normally there are different group leaders (project leader or project managers). While this practice has the benefit of specialised personnel at different phases, it lacks the continuity and focus on the overall objective of the project. Instead the project is looked as three distinct components, often with differing(occasionally conflicting) objectives. Managing the projects successfully, under such a situation is difficult. Such situations are not very uncommon in India and also occasionally found in U.K. In order to overcome this situation it is suggested that the same team (at least the same project manager) be associated with all the phases of the project life cycle. Often this suggestion is difficult to implement due to long life cycle of major projects and difficulty in identifying such a team or project manager. However, in India this idea has received considerable attention and all efforts are made to achieve this. In many major projects in India a senior manager co-ordinates the activities associated with all the three phases of the project cycle. This helps in achieving continuity of the different phases in the project cycles and also focuses on the overall objective of the project.

#### **5. Project Feasibility**

Some amount of sensitivity analysis is carried out in respect of relevant parameters at the project feasibility stage for almost all projects in India. However the detail risk analysis, which is becoming increasingly a practice in U.K.<sup>5,7</sup> is very rarely carried out in India. Many project authorities in U.K. are inclined to get specific studies carried out by competent agencies to look at all aspects of the risk and risk management for the project. There are also specific project risk analysis softwares<sup>6</sup> which are used for the purpose.

#### **6. Tasks in Project Implementation**

Project Implementation phase encompasses the realisation of the scope of the project. This is the phase where the major part of the project objectives are realised. Studies into the causes of failures



of projects in India have revealed that majority of these are in the project implementation phase. It has also been realised that significant improvement can be made by proper management within the project itself. Accordingly major efforts in India are directed towards improvement in this phase. This is also confirmed by the formation of the ministry of programme implementation in India which co-ordinates and facilitates proper implementation of major projects in India. Factors identified by Morris and Hough<sup>1</sup> for project success arising from various case studies include a large number of factors associated with the project implementation phase; like in the areas of contracting, implementation, human factors etc. The important areas in the implementation phase of project consist of

- Project scope management
- Contracting strategy
- Quality and Delivery of supplies
- Communication
- Monitoring
- Project Organisation, etc.

## 7. Management of Project Scope

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Management of the project scope is of utmost importance for control on cost and time of project. As the project progresses fresh inputs are available and project authorities are tempted to incorporate changes in project scope to bring it current with the available information. These changes in scope are related to technology, size, capacity, type of equipment etc. On the one hand such changes are welcome on the ground of minimising obsolescence, upto date equipment and required capacity ; on the other hand such changes when incorporated at an inappropriate stage causes undesirable cost and time overruns. Improper scope management reflects inadequate risk analysis. Risk analysis, if properly done, would reflect the desirability for such scope changes and the effect of the changes on the project. Therefore such an analysis will generally result in less changes in project scopes. Since risk analysis at the feasibility stage are more common in U.K. than in India, the changes in scope of projects are rather less in U.K. The changes in the scope of project also reflects inadequate attention to certain aspects of the project at the feasibility stage. The changes in scope in some of the projects in India have been the major cause for overruns on time and cost. In many cases a firm decision on the scope of the project is taken at a much later stage of the project. Whereas in U.K., in most projects the scope of the project is firmed up at the beginning of the implementation phase. Apart from risk analysis an effective project organisation is essential to manage the scope of the project in the most desirable manner.

## 8. Contracting Strategy

Contracting Strategy and the management of contract play a crucial role in the success of a project. This is so as all projects are implemented through external contractors and it is a rarity when the entire scope of the project is implemented through inhouse or internal resources. Projects by definition encompasses a scope which is more than what can be normally handled and hence the need for external contractor. It is not the legal framework of the contract, but the aspects like owner-

contractor relationship, scope of contract packages, type of contract, selection of contractor, risk-contract analysis etc. are more relevant. The entire emphasis is on making the contract work.

Many large projects in India are financed through multi agency/country aid programmes in addition to financing from Indian Sources. The agencies and the countries have different norms, eligibility, procedures, evaluation of contracts and placement of order. Accordingly the packages are to be designed and the contract documents are to be prepared based on the source of finance. This necessitates substantial amount of planning in respect of pre-contracting activities. This aspect of the contracts management is almost irrelevant in the U.K. environment as multicurrency/multi-agency financing of projects is a rarity.

In U.K. projects almost all types of contracts are being practised. This includes, turn key contracts, lump sum, cost plus, contracts with escalation etc. In Indian projects contracts with escalation is the most common type of contract. This is largely due to relatively longer duration for the contracts and administered prices for various essential materials and services like railway freights etc., which is revised from time to time and on which the contracting agencies do not have any control. Cost plus and the lumpsum form of contracts are very rare in Indian projects. Turnkey contracts are found in some cases. Two stage bidding with the help of technical consultant is the common practice for the award of contracts in India; similar to that practised in U.K.

The technical performance of the contractors is satisfactory in most cases. However, there is tendency to have overrun on time and a continuous follow up with the contractor is essential in India. The contractors are expected to arrange for all resources for the fulfilment of the contract. However, due to remoteness of the site and uncertainty of availability of essential materials and services, the promoters of the project arrange for certain infrastructural facilities. This strategy is adopted to minimize the avoidable delays. The provision for infrastructural facilities include auxiliary power through diesel genset, service water, essential equipments like welding sets, compressors, cranes etc., essential materials like steel, cement, welding rods etc. and sometimes facilities like housing, medical and the like. These are arranged in order to avoid delays as in some cases the contractor may not be able to augment all these resources all the time due to remoteness of the site and limited period involvement of the contractors. Such infrastructural planning by the promoters/owners of the project in U.K. situation is non-existent.

## **9. Project Equipments - Quality and Delivery**

Apart from the time and cost, the technical performance of the project after completion forms the third dimension of the project. Good project management is expected to ensure planned technical performance during the project operation phase. The technical performance is greatly influenced by quality and delivery of equipment and supplies. A significant amount of capital equipments are procured within the country in India, in addition to overseas procurement. The proportion of imported and indigenous equipment depends on the sector of the industry and the quantum of requirements in relation to the ability of the indigenous suppliers. There is considerable amount of uncertainty with regard to delivery of equipments at site. Though there is certainty in respect of fulfilment of delivery

commitment of overseas supplies; there is lot of uncertainty in respect of transportation and logistic within India. In the case of indigenous supplies; in most cases the desired quality can be obtained with certain amount of follow up, but there is considerable delay in respect of delivery and uncertainty in transportation and logistic support. In view of the uncertainty mentioned above, most project managers pursue a policy of getting all the equipments and supplies at site as early as possible, irrespective of the timing of their actual demand or erection. This creates certain types of problem in storage of equipments in open yards and certain amount of damage due to non utilisation for a long time. Such a situation is non existent in U.K. Projects and the equipments and supplies usually arrive at site as per demand or as per erection schedule. Though it has been assessed and confirmed that the indigenous suppliers possess the capability to meet the quality requirements, considerable amount of follow up with the vendors is necessary. The project authorities prefer to have their own men for progress reporting and quality assurance rather than depending on communications from vendors. As a result most of the project authorities have their own personnel posted (or making regular visits) at vendor's premises for progress reporting and quality assurance. Sometimes these tasks are performed through a third party with the agreement of the vendor. In order to ensure timely delivery (mostly delivery with as little delay as possible) regular follow up with the vendor is essential. In many cases the follow up at the highest level in the vendor's organisation is necessary. In case of public enterprises follow up with the concerned government ministry or department is also done. There are instances, when a better performance from the vendor could be achieved by providing incentives. But threat of penalty has rarely improved the situation.

#### **10. Over Dimensioned Consignment (ODC)**

Another major area of sufficient attention is the movement of over dimension consignments. This problem dimension has gone up in recent times due to tendency to build large unit capacity plants resulting in heavy and higher dimensioned equipments. Due to technological complexity, many of these cannot be fabricated and tested at site and so these are to be moved as over dimensioned consignment. The problem is aggravated due to poor logistic and transport infrastructure coupled with interior location of projects (away from ports). There are severe limitations on movement by rails mostly on account of dimension and not so much on account of weight. The bottlenecks in road movements include low capacity of roads (in terms of axle load), limitations on bridge capacities, narrow bridges, sharp bends on roads, limited availability of vehicles to carry O.D.C. etc. There are some projects, whose time schedules got affected on account of movement of O.D.C.s. In many cases the project manager and the project team have to pay considerable attention to the movement of O.D.C.s. As opposed to this in U.K., none of the above issues in respect of quality and delivery of equipment and supplies are of a dimension calling for significant attention of the project manager. Use of incentive and penalty clauses coupled with normal follow up with the vendors, result in desirable outcome in most projects.

#### **11. Communication Facilities**

The communication facilities at many project sites in India, both in respect of goods and information are very bad. Road facilities to the project sites are in many cases the only reliable mode

for travel by personnel and communication of information. Telephone communications are inadequate and facilities like telex etc. are non-existent in many cases. Many project sites do not get timely information on various supplies, thereby affecting the progress of the project. One of the common approaches adopted by many project authorities to overcome the communications difficulties is to operate from two set-ups. One set-up is located at the project site, where the physical aspect of the project is managed. The second set-up is located in a nearby major city. The city set-up is used for all external communication with vendors and other agencies. The communications between the two set-ups is maintained through a dedicated courier service run by the project authorities themselves. Further, no public transport facilities are available to many project sites. Accordingly, dedicated transport facilities between the site and the nearby town are provided by the project authorities for all the persons associated with the project. Many project authorities also plan to get dedicated telecommunications lines for the project site. However, these facilities are not available during the initial period of the project. The situation in respect of communication facilities is somewhat unique in India and it does not exist in any developed countries and in many of the developing countries.

## 12. Project Monitoring

Monitoring has been identified as one of the major reasons for cost and time overruns of projects in India. Monitoring in the real sense, does not exist in many Indian projects. What is common, is a form of reporting to meet the requirements of the financial institutions and government agencies. In many cases these reports are bulky and consist of large volumes of data. They do not usually contain any effective action plan for proper management of the project. The use of responsibility charts, which is common in U.K., is practically not being used for proper performance of tasks. The monitoring meetings are more ritualistic than action-oriented. The frequency of the monitoring meetings do not reflect the stage or size of the project. A separate notice with agenda is issued for each of the meetings in many projects. The use of fixed timing and agenda for monitoring meetings, which are so very common in U.K., are yet to be used widely by the projects in India. The meetings are usually quite long and in certain cases conducted over the whole day. The way the meetings are conducted, it tends to be less effective in terms of improving the performance of the project and becomes more of a forum for recording non-performance by various agencies. The minutes of the meeting are also very long, running into several pages. As a result these minutes are distributed quite late and serve no useful purpose in terms of taking corrective action to improve the performance of projects. However, the scene is changing very rapidly. The process of monitoring is becoming more effective in terms of controlling project performance. Computerised monitoring of projects are also being employed in many projects. Hierarchical systems of project control have also been introduced into the project management in India. The concern for project monitoring has been expressed by all the agencies like government, financial institutions, promoters etc. As a result it has been suggested that monitoring of projects should form a part of the feasibility report/detail project report. The part on monitoring is expected to contain details of frequency of monitoring, type of reports, agency for monitoring and such other details. There are only a few consultancy organisations which are capable of providing project monitoring support to the project authorities. However, use of such agencies is very rare. In most cases internal people are assigned the task of project monitoring, who do not necessarily possess the expertise needed for the task. There are some cases, where monitoring tasks had been assigned to a properly constituted

team possessing the required expertise. In such cases the monitoring efforts have been very effective and better control on the project has been achieved. Some cases have been reported where personal computers have been used extensively for project control purposes. There are also projects with PCs installed at site, though the site conditions were not very good. In addition to use of standard softwares, some project specific one-off applications have also been developed and used by some of the project authorities. The quality of usage of computer for project control varies widely from one extreme of very detail exception reporting, what if analysis to merely standardised report generation for fulfilling statutory requirements. On the other hand, project monitoring in U.K. projects has resulted in providing useful support to the project manager for controlling projects. In many cases specialised agencies are being used for monitoring of projects. This include regular updating of project status, generation of exception report, what if analysis etc. Multi-level project monitoring meeting at regular intervals with fixed agenda are conducted and are found to be effective in controlling projects. Use of consultants for project control purposes is a common practice in U.K. projects, where as this a rarity for projects in India. Project monitoring is a specialised task needing specific skills, is yet to be realised by many project authorities in India. The project monitoring may not be very effective till it happens.

### **13. Project Manager and Project Team**

There have been many successful projects though the overall performance of projects in India is poor. Almost all the project managers of successful projects have indicated that in addition to other factors, the involvement of a good project team as one of the important factor for the success of the project. Study by Dhru<sup>4</sup> has revealed the impact of the project manager on project performance. Various studies into the causes of large time and cost overruns in Indian project is responsible for all aspects of the project. All the above findings reflect inadequate attention to project organisation and project team building in Indian projects. The use of the services of a project management consultant in projects is very common in U.K. The scope of the project management consultant, in many cases, includes dealing with issues related to project organisation. In India, it is very common to have a technical consultant for the project; but the use of project management consultant is rare. The emphasis on project organisational issues within the project promoter's organisation is very limited. There are few cases, where specific attentions have been paid to project organisational issues and these organisations have also realised benefits for such efforts. One such project has been described by Shukla and Tripathy<sup>8</sup>. In many projects the structure of the organisation is similar to that of an operations set up, which results in inadequate attention to organisational issues in projects. This also leads to the organisational processes to be similar to that of an operational organisation and is not "projectised". The project leaders are often identified on the basis of technical competence and status in the organisation. No effort is made in identifying a person possessing the qualities of a project manager. Of course the qualities of project leadership are difficult to be tested explicitly. The same procedure is followed for building the project team. The project team members are usually identified on the basis of the technical skill and the position they hold in the organisation; rather than the ability to work as a project team member. In most cases the project manager or the team leader has little or no say in the formation of the project team.

#### **14. Motivation of Project Team**

The challenges faced by the project managers in India in motivating the project team and also the participating contractors and other agencies is far greater than that in U.K. The large projects are usually at green field locations and lack the basic amenities and infrastructural facilities. Most of the green field project sites do not have adequate transport and telecommunication facilities. In addition there are inadequate drinking water, housing, medical, schooling of children and such other facilities. The compensation for skilled employees and managers in projects are same or marginally higher compared to operation jobs and for semi-skilled and unskilled employees, these are same or marginally lower. Whereas in U.K., the compensation in green field project sites are significantly higher compared to operations jobs. Further the infrastructural problems are either non-existent or exist to a limited extent in U.K. project sites. These unfavourable circumstances make the task of project managers in India more difficult in respect of keeping the morale high of everyone at the project site.

The contractors engaged in the project find it difficult to augment resources and look for support from the project authorities. The project manager must also keep the contractors motivated for achieving better performance from them. On the whole, the ability of the project manager in dealing with organisational and behavioural issues plays a significant role in the management of project. However, as of now, little effort is being put in this area for the management of projects in India.

#### **15. Project Auditing**

The practices in some of the key areas of project management in India indicate opportunity for substantial improvement. In addition certain practices are yet to find an acceptance in project management in India. One of these is project auditing. Project Auditing has already covered lot of ground in U.K. Project auditing during the implementation stage of the project as well as on completion of the project are now being carried out by more and more projects in U.K. Project audit<sup>2</sup> helps diagnose the problems associated with project implementation and come up with recommendations for improving the project performance. Post-project audits aims to define and record the lessons learnt following the completion of the project and to improve performance on subsequent projects. Project auditing is objective in its approach with the emphasis on the improvement of project performance. It is expected that such an approach will go a long way in improving the performance of projects in India. At the moment no such practice exists in Indian projects. Statutory auditing (as for an ongoing organisation) is carried out both in-project and on completion of the project. These auditing concentrate on finding out whether various formalities and procedures have been observed. In many cases these auditing ends up being a fault finding mission. Very rarely improvements in project performance have been achieved as a result of such auditing. Further in many cases these audits result in demotivating the project manager and the project team. These expertise are yet to be developed in India. Incorporating project audits will play a positive role in improving the performance of projects in India and will also help in motivating the project team due to its objectivity.



## **16. Education and Training in Project Management**

The above discussion on management practices in major projects puts in perspective the gaps in project management practices in India. The project managers and the project team possess the requisite technical knowledge. This is also being supplemented by the services of a technical consultant in most projects. However, there are substantial gaps in respect of management practices in projects. This is reflected in the project organisation, authority/responsibility of project managers and project monitoring practices. The cultural environment and the infrastructural constraints, within which the project authorities in India have to perform, are unique. The familiarity with the local situation and practices is essential for management of project. So the projects in India are to be primarily managed by personnel familiar with the prevailing situations there and managing the project with expatriates in key positions may not be very successful. The ability of project managers and other project personnel in India, to manage projects has to be improved for better performance of projects. Presently many academic and professional bodies are conducting short duration programmes on project management in India. In addition, seminars and workshops on specific topics are being organised from time to time. Most of these courses are well subscribed, reflecting the demand and need for such programmes. Barring a few, most of the programmes are having emphasis on network techniques for project management and computer based project management. Studies and discussions with a number of project personnel indicated that most of the managers engaged in projects are familiar with network techniques and the softwares for project management. However, they are not competent enough to use these tools effectively for improving project performance. A limited number of programmes on project management concentrate on these aspects. These programmes have many case studies and live project situations for discussions by the participants. In addition these programmes also deal with the organisational and behavioural issues in project management.

In U.K., a number of management schools and professional bodies conduct programmes on project management. Some of these programmes are on specialised topics like managing technology projects etc. The emphasis on network techniques and computerised project management is not heavy in these programmes. On the other hand topics like managing uncertainty, risk analysis, project organisation, role of project manager etc. are covered in great detail. Project management has not remained limited to elective course in post-graduate management programmes, but has become a subject for exclusive post graduate programmes in U.K. There are many management schools in U.K., which are now offering one or two years post graduate programme on project management. Some of them are also offering the programme by distance learning.

In India, project management programmes are mainly offered as short duration executive development programmes. A few management schools have introduced project management as elective course in post graduate management programmes. Only one school is offering an exclusive post graduate programme on the related field of construction management. Adequate training in project management has to be undertaken in order to improve the performance of projects in India. The training has to concentrate more in terms of providing inputs on various concepts of project management, project organisation, project organisation and other related issues.

## 17. Conclusion

The overruns in cost and time for projects in India are very high. Poor infrastructural facilities and limited basic amenities at most of the sites of major project pose a special challenge to project authorities. The project personnel have adequate technical knowledge but limited competence in project management. Training of project personnel will go a long way in improving the abilities in managing projects. The training programmes need to concentrate more on conceptual inputs on project management, projectisation, project organisation and other related issues.

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