A PROFILE OF CONSTRUCTION INDUSTRY IN INDIA

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ABSTRACT

The present study reports profile of construction industry in India. It points that construction industry is one of the oldest industries providing ample employment to the people from village level to metropolitan cities. The size of construction industry ranges from small company owned by one or two individuals to a large industry employing thousands of people.

In the present work inherent nature of construction industry have been discussed and concluded that it is infrastructure or capital formation industry, which directly and indirectly uses capital goods and all other types of resources.

It has been also highlighted that government agencies has direct interference in construction activity right from acquisition of land to commissioning of the project.

To face the temporal variation of feast and famine state of construction industry emphasis on systematized management has been suggested.

Like any other business, failure of construction companies is also very common. This issue has also been overviewed. Incompetence, lack of experience, newness, smallness and financial handicap are the few reasons cited for such failures.

It has been concluded that lessons should be learnt from failures as success is never final and failure is never fatal. It is the courage of management that counts. At last it is not failure but low aim is a crime.

Keywords: Construction industry, management, project, cost, infrastructure.

INTRODUCTION:

Historically construction industry is one of the oldest and largest industry in unorganised sector providing ample employment to the people. Before the independence, the construction activity in India was confined to building of dwellings, religious places like mosques and temples etc. at individual and community level, with the use of traditional techniques, which are still being used in developing countries like India.

The Taj Mahal and Lal Quila are the legandry example of competence of Indian talent in the field of construction .However very authentic record of the construction operation of these buildings are not available today. The history of systematised or organised construction practice in India can be traced back to around 1847 AD when Lord Dalhouise established the Public Works Department, called PWD, today, to construct civil engineering structure which included road, small dams, canals etc. The department worked successfully for 100 years. In 1947, the independent India decided to launch a mammoth multipurpose river valley project, called Bhakhra Nangal Project on the river Sutlej in the North West India for irrigation and power generation at a cost of Rs.7750 *lakhs* in 1952 which amounts today approximately more than Rs.100,000 crore in first five year plan in which 50% of capital outlay was allotted to construction of civil works.[5] The construction of *Bhakhra* Dam was taken by irrigation wing of PWD of Punjab with the help of technical knowhow from foreign help on cost plus basis. This can be considered as a major breakthrough in the field of construction by India as there were no big construction companies available at that time to take up such stupendous job and more over network analysis like Construction Planning Method / also known as Critical Path Method (CPM) and Programme Evaluation & Review Technique (PERT) had not taken formal shape.

The evolution of Indian construction industry has followed the same general pattern as happened in other countries, initially founded by the government and slowly taken over by small and big enterprises. During execution of Bhakra Nangal dam Indian government realised need of professional competence in the field of construction and the first professional consultancy company National Industrial Development Corporation (N I D C) was established in the public sector in 1954 .Subsequently a number of speciality companies in design and Construction came into existence like Indian Railways Construction Limited (IRCON),National Building Construction Corporation (N B C C),Rail India Transport and Engineering Services (R I T E S),Engineers India Limited(E I L) and in private M N Dastur & Co.Hindustan Construction Company are the name worth to be mentioned. In late sixties government allowed foreign collaborations in these services .The guidelines for such collaboration were prepared and issued in 1968 with binding that local consultant would be the principal contractor in such collaborations .The objective behind such binding was to develop indigenous design capabilities comparable to in flown foreign technology and skills. The outcome of this strategy was establishment of joint ventures in India.

CONSTRUCTION AND NATIONAL ECONOMY:

By just using common sense it can be inferred that economic plans of any country is prepared to improve any particular sector of economy. Improvement or emphasis on any particular sector may or may not need help of other sectors like construction. A microscopic study of economy, irrespective of its state i.e. primary, secondary or tertiary, reveals that development of most of the sectors need help of construction. In nutshell, a gap between demand and supply is necessary for the development of a particular sector.

Role of construction and its impact on other area can be seen from Figure 1.1

Thus it can be said that any attention to optimise construction activity will lead to reduction in waste of material, saving of energy and saving of time. This will certainly lead to reduction in cost over runs of other projects. Thus, construction sector is directly or indirectly influences the overall economy of the country.

The pattern of Indian economy of last fifty years shows that construction work amounts to around 40% of development investment .Approximately 16% of Indian working population depends on construction for its living .The construction industry creates immobile assets worth over Rs.20000 crore by employing more than 3 crore people .It enhances nation's GDP by 5% and gross capital formation of 78%.It is expected that total capital expenditure of state and centre will be approaching Rs.802087 crores during the period 2011-12. This amount indicates an enhancement of Rs.658500 crore from the figure of Rs. 143587 in 1999-2000.In the 21st century there has been an increase in the share of the construction sector in GDP and capital formation .The GDP from construction at factore cost or at current prices increased to Rs. 174571 crores

(12.02 % of the total GDP)in 2004 -05 from Rs.16238 crores (10.39% of the total GDP in period 2000-01.The increasing involvement of the private sector in infrastructure development through public private partnership and the strategy like Build Own Transfer (BOT) can be cited as the main factor for such increase in GDP. However there is always scope for more active participation from private sector in this direction through investment. There are around 200 firms from corporate sector, working in Indian construction industry .The number of registered class A contractors is around 120000 working for local development authority, state departments and central government bodies like CPWD. The number of small contractors and petty contractors working as sub contractors for principal contractors are enormous. So there is ample scope for expansion of construction industry at micro as well as at macro level in form of infrastructure development.

NATIONAL ECONOMY:

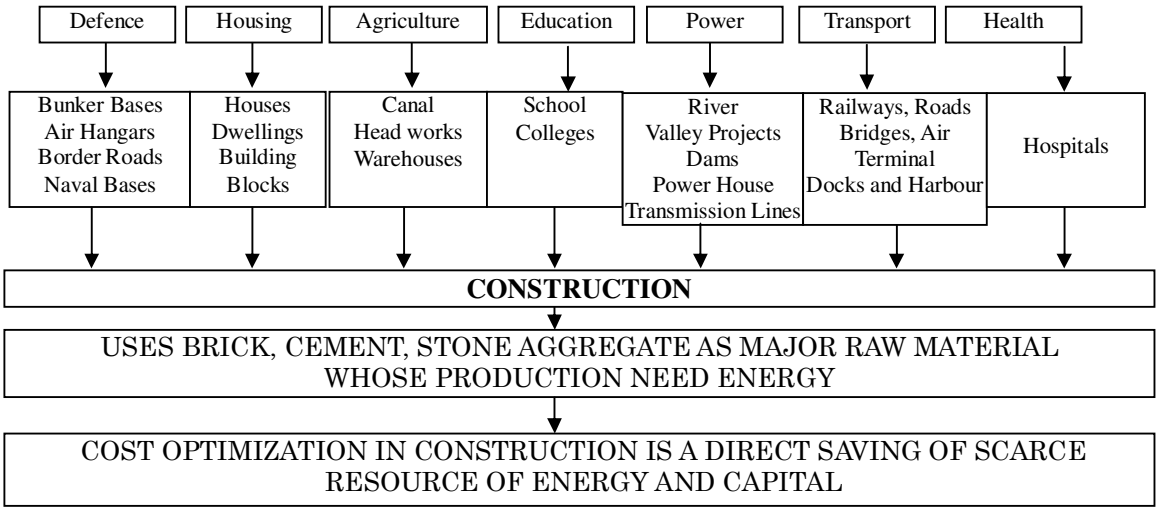

Fig. 1.1 : Role of Construction in Various Sectors of Economy

Construction industry has some peculiar characteristics like any other industry. Firstly, it is a capital-intensive industry involving current and future outlays of funds with the expectation of a stream of benefits extending far into the future.

Secondly, construction project takes a long duration to complete e.g. the Bhakra Dam took fifteen years for its completion (1950-1965) and they also have a long gestation period.

Thirdly, the useful life of construction project of national importance is very long usually more than 60 years for most of the major constructions.

Fourthly, in construction project, products and services are combined together. In construction, product is fixed and machine and men move, contrary to assembly line production in which product moves.

Fifthly, a large construction needs a large land area. Acquisition of such land leads to payment of compensation to the owners of the land, which has legal and political over tones. In some cases like construction of dam, it needs rehabilitation of nearby villages. Such problems usually do not occur with the other industries.

Sixthly, cost benefit analysis of public infrastructure created by construction activity such as roads, bridges and dams cannot be done with traditional concept of profit maximisation alone. Special economic tools like Social Cost Benefit Analysis (SCBA) and principles of welfare economics are essential for the valuation of such assets.

Seventhly, two construction projects are not identical in every respect. Thus, construction project can be considered as a job work of a large magnitude contrary to any other manufacturing unit producing products at mass scale by a single machine.

Eighthly, the human resource working in construction forms a temporary organisation for the project at the site and disperses in different directions as soon as the project is over.

Ninthly, experience of generations plays a vital role as most of the construction material directly used after quarrying are the natural material and performance or relative merit of such material takes a long time for its pronouncement, the time may be in decades.
Tenthly, death of workers during the execution phase of project is very common, so safety and precaution are primary concerns.
Such peculiar characteristics of construction project opened the portals for the development of special managerial tools, like materials management, CPM and PERT to handle the project in a professional manner.
In India, construction industry is fragmented and a sizeable construction work is performed by the unorganised sector.
Such peculiar characteristic creates favourable conditions for the establishment of a new company. If Construction Company is weighed on the basis of men; material and money following facts come up.

(1) As most of the construction is done either on site or precast members, are fabricated and assembled on the site and most of the construction equipment are available on rental basis, thus a little capital is invested in fixed assets and machinery.
(2) Construction companies require relatively low working capital as after award of contract, company realises mobilisation advance from owner before starting the work.
(3) In India, companies, usually employ labour contractor for the supply of labour force. So very few employees are on the permanent pay roll of the company.

These factors are responsible for the birth of small to very big construction companies. This introduces competition in the market. There are pitfalls but a professionally managed construction company is able to pay rich dividend to its owners/shareholders.

CONSTRUCTIONS AND NATIONAL DEVELOPMENT:

For any developing country like India, development of infrastructure is the prerequisite for the economic progress of the country. To achieve this objective optimised construction is the need of the hour as capital is a scarce resource

TYPES OF CONSTRUCTION:

Total construction work can be divided into two broad categories viz. public and private.
The public projects i.e. whose direct beneficiary will be the public, is usually handled by the government, of course govt. get it done by any contractor or by construction company by awarding the work through bids and tenders. It is public money or any financial aid or loan from agencies like World Bank, that is spent. Dams, Bridges, Canals, Metro Rail, Power Projects, DUDA,SUDA are typical examples of public projects.
Private projects like house of an individual or construction of a factory, a nursing home, hotel or project in which taxpayer's money is not involved can be categorised as a private project. Frankly speaking profit motive is always there in most of the private projects.
In private projects, capital outlays are less as compared to public projects.
Secondly in Indian working environment one cannot afford delay in private projects but cost over runs and delays in public projects are an everyday phenomenon in India.

CONSUMERS OF CONSTRUCTION INDUSTRY:

Following are the consumers of construction industry:

(1) An Individual
(2) Group Housing Societies
(3) Centre, State, Local Government and Development Authorities.
(4) Corporate Sector
(5) Other countries at International level.

Every consumer has own peculiar requirements, which are being described in following paragraphs.

INDIVIDUALS:

An individual needs the services of a construction company for the construction of individual house, which is ordinarily his dream house. In such construction, company cannot ignore individual taste and preferences. Persons who are executing the project have to help and arrive at a decision in advance on the item of choice and colour e.g. colour and size of tile of bathroom, colour, size and quarry of marble stone etc. if construction has to proceed smoothly.

GROUP HOUSING SOCIETIES:

The housing demand will be around 31 million by 2015(MPRA 2008)In planning and designing of an apartment or building blocks for group housing society, the requirement can be classified into two broad categories. [13]
First requirement is of an individual in his house. In a group housing most of the finishing items are left for the individual occupant so he could finish the house as per his choice, taste and preferences.
Second requirement is the preferences of a group of people as a whole or community. requirement. To fulfil this requirement planner needs knowledge of architectural sociology, human behaviour, security aspect, and maintenance engineering practices, generosity of the people and cooperation among the people.

CORPORATE SECTOR:

Corporate sector hires the services of Construction Company for commercial building, for factory or for office building etc.
In such buildings, building economics,cost optimization ,requirement of
future expansion and flexibility of the plan are the key issues.There is ample scope for creativity and innovation in corporate sector projects.

GOVERNMENT CONSTRUCTION:

Local Development Authorities, CPWD, PWD of various states etc are the department which look after the construction of government sponsored, civil engineering works. Here Construction Company is guided by strict rules and regulations of the state, for such departments, time factor is least important.

INTERNATIONAL CONTRACT:

After the Second World War under developed, oil-rich countries were busy in creating infrastructure of the country to boost economic growth. Sometimes even developed countries need huge construction for the events like Olympic and Asian games.
These projects are mostly financed by the user country or by some international financing agency like World Bank. In such cases international bids are invited. Construction companies from US, Great Britain, West Germany and France usually take the best part of these contracts.
Now competition is increasing. Companies from Japan, South Korea and India are also getting business share in these countries in construction and in setting up of power stations and infrastructure. Those companies who offer turnkey services have bright chances of success in the competition when the nature of job is purely works contract. Here sub contractor is capable of mobilising construction equipments and manpower and gets subcontracts from principal contractor. Joint venture is a very common phenomenon in international contracts.

MAIN ORGANS OF CONSTRUCTION INDUSTRY:

There are three main organs of construction industry other than the consumer.
(1) The Owner
(2) The Consultant
(3) The Contractor

THE OWNER:

Civil Engineering Projects are usually cost intensive. Usually the investor does feasibility study in advance. Any investor or promoter is worried about two things. Firstly investor is worried about the rate of return.

Secondly the patterns of cash flow. The ideal situation will be high and early return. i.e. on what date what amount is required and from where the same will be arranged. The owner or promoter may be an individual, a government authority, a government department, a corporate house etc.

THE CONSULTANT:

In Civil Engineering Projects, Architect, Engineer, Project Manager and Chartered Accountant usually form the panel of consultants. These persons advise the owner on the basis of their knowledge, experience, and know how. It is generally believed that any person who has experience and knowledge can give advice on a particular problem of his field.
The basic function of an engineer is to design and do necessary permutation and combination to optimise the solution. Although consultant should have experience, knowledge and wisdom that all certainly come with age but people who are well versed with new material, new technology, new equipment and of course having a lot of energy and enthusiasm to do something new are also desirable on the project.

THE CONTRACTOR:

In Civil Engineering Project, contractor translates the blue print into reality with the help of work force and material. The practice of contractor ship in civil engineering is perhaps as old as civil engineering itself. A poorly written contract agreement is always a good cause of bone of contention. In contracts, one should always seek the help of a legal expert. This is imperative that owner himself should enhance his knowledge on the subjects like laws of contract, negotiable instrument act and consumer protection act etc.

REGULATORY BODIES RELATED WITH CONSTRUCTION:

Regulatory bodies related with any business can be classified into two broad categories viz. general and specific.
Income Tax, Labour Court, Labour Union, Electricity Board are the departments with which every business organization has to deal, fall in general category. So every business organization should be well versed with the rules, regulation ,written and unwritten laws of these departments.
The regulatory bodies specific to construction at local level are following: (1) Local Development Authority, (2) Pollution Control Board, (3) Water Works and Conservancy, (4) Local Police.

LOCAL DEVELOPMENT AUTHORITY:

It is the first regulatory body, which is encountered in any construction. Most of the rules, regulations and byelaws of development authorities of province of Uttar Pradesh are given in the book "Regulation of Building Operation in Uttar Pradesh. This very book every construction manager should have and should always keep himself in touch with the office of the development authority for the awareness of day-to-day changes in the working and rules and regulation of the authority.
In fact, rules, regulation and bye laws are framed to provide healthy living but sometimes these laws are one sided i.e. in favour of government only. Thus, it is advisable that rules should not be violated in ordinary circumstances.
However, there is always a provision for the compounding. This is to be weighed by the owners i.e. gain or loss on an unauthorised construction.

POLLUTION CONTROL BOARD (PCB):

Now a days regulation regarding environmental pollution have become very stringent in India to, like in advanced countries. Sometimes large projects like construction of power plant, multipurpose river valley project are stopped or even abandoned due to environmental considerations. Most common projects that have been in trouble in the recent past include Tehri Dam in Uttranchal and Narmada in Madhya Pradesh.
Clearance from PCB is also necessary for construction of a factory or fabrication of a processing plant. The days are over when effluents were directly discharged into the river. There is no harm in conforming to PCB norms but sometimes these regulations are difficult to obey and PCB acts as a hassle. Planners are advised to incorporate PCB recommendation right from site selection to project formulation.

WATER WORKS AND CONSERVANCY:

If construction is to be done in urban area then very first question comes to mind is what will be the source of water during construction. If municipal water supply is used , municipality charges additional tariff on it.

So it is advisable that first and foremost job of construction manager is to get a water pump installed and inform the municipality that public water is not being used for construction.
The second thing in case of projects like hotel and apartment is the disposal of wastewater and night soil. It is obligatory upon liaison officer of the construction company or construction manager to initiate the issue for the permission of connection of sewer of the building to the municipal sewer.

LOCAL POLICE:

Local police plays an important role in any construction project in India because development authorities always take the help of police to meet their objectives or in case of mishappening on the site local police has to be taken into confidence. It is obligatory on the part of construction manager to maintain good relations with local police station and police officers of that area. Of course maintenance of such relations, always lead to additional expenditure on the construction company.

BUSINESS OPPORTUNITY IN CONSTRUCTION INDUSTRY:

Construction of infrastructure like road network, canals, urban development, extension and renovation of existing facility are few activities through which capital formation takes place in most of the countries of the world. So there is always ample opportunity for construction from village level to international level for the construction companies, depending upon size and ability and experience of the company.

MANAGEMENT IN CONSTRUCTION:

Based on work experience, it has been observed that most of the construction contractors manage their business in a very unorganised manner. This ultimately leads to failure of business. The numbers of small and medium size companies' failures are much more.
Construction industry has been characterized as weak inefficient, nebulous, backward and slow to incorporate changing conditions. In a nutshell majority of construction companies are poor absorber of management knowledge. The explanation given for it may be as under.
Every construction project is unique in itself and does not need very strict technical standardization. An operation in construction work involves many skills and talent, mostly of non-repetitive nature. Remote location of the project, poor means of transportation and varying productivity of labour are some factors, which are beyond the contractor's control. Thus construction business is volatile in nature with many ups and downs.
Any construction activity is basically a manufacturing process. So the decision-making people are very few. Any delay in on the spot decisions, increases the cost and hampers the progress of construction. Such complexities lead to a managerial challenge. It does not mean management problems of construction are entirely different from other management problems.
Like any other industry, construction industry is also experiencing cutthroat competition. Products and services of construction industry also face temporal variation in demand and supply.
Such conditions necessitate the learning of managerial practice specific to construction. Today skilled management is necessary for the survival of construction industry. This maxim has not received adequate attention in construction firms in India. The result is high incidence of failure.

FAILURES OF CONSTRUCTION COMPANY:

Any construction activity starts from scratch and passes through various intricate processes and finally project ends in a built up facility or reaches to start up phase of the project and finally project becomes operational. Like other business in construction business also ,there are many slips between cup and lip. The failure of construction business is a subject of analytical inquiry and a matter of concern. So many investigators have examined the issue. A few are being reported here.
Dun & Bradstreet (1985-1994) have studied the failure of Construction Company for many years (10 years). They list the following reasons for the failures.[1]
(1) Incompetence
(2) Unbalanced experience
(3) Lack of managerial experience

(4) Lack of experience in particular line
(5) Neglect
(6) Fraud
(7) Disaster
(8) Reasons unknown

The first four items listed in above list account for over 90 percent of the failures. This fact exhibits that financial success of Construction Company depends almost entirely upon the quality of its management. Sometimes prolonged work, poor profit margin, lack of proper accounting procedure can be cited as reason for the failure. If we club all these reasons, it points towards poor management.

Recently Kale and Arditi (1998) have done a thorough investigation in this direction. They conclude that newness, adolescence and smallness are three major factors, which are responsible for failure of construction companies.[2]

Arditi et.al.(2000) found budgetary and macroeconomic issues as main reason. [8] Kivrak and Arslan(2008) have examined the critical factors causing the failure of construction companies through a survey conducted on forty medium and small size construction companies of Turkey .They have inferred lack of experience and country's economic condition as influential factor for the failure.[7]

In scholar's opinion financial handicap is perhaps the root cause of failure, which is always associated with new companies. It may be concluded that in simple terms, if any one fails in any business, i.e. he could not understand the economics or intricacies or commerce of that business.

There is no dearth of literature on the success stories of various companies. Unfortunately success is a public celebration and failure is a private funeral. So for a new entrepreneur, it is better to learn from failures rather than from success stories.

In this regard scholar is of the view that foundation of right stepping stone always rests on wrong footprints. These wrong footprints are sometimes called experience. In a nutshell a new entrepreneur should know DONTS first rather than DOS. It is the first step to run the construction business.

THE CONSTRUCTION MANAGERS:

The construction manager is the most critical resource in implementation phase of the project. He is supposed to discharge basic functions like organizing, staffing, directing, planning and controlling. A good performance of construction manager is necessary for the growth, development and success of Construction Company.

Although the managers do not normally, carry out the construction work with their own hand, Yet they are responsible for keeping the project on schedule within the cost limits. They should have telescopic as well as microscopic vision on each and every step of construction operation, right from preliminary estimates and various types of costs to the final inspection and payment.

In managing any construction project, personality of construction manager plays a vital role. This very trait can never be ignored. Mustapha and Naoum (1998) have investigated factors, which influence effectiveness of site managers. They are of strong opinion that personal variables as a whole have an impact on effectiveness of site managers.[4]

The construction manager should also be capable of handling crisis and contingencies at site. Crisis and contingency do arise at construction site. Managers should be well equipped to deal with such emergencies. To deal with such contingencies collective effort is needed. Loosemore (1998) has identified effective responsibility and teamwork is the basic managerial tool to handle the crisis.

NEED FOR PROFESSIONAL COMPETENCE:

If a company or contractor is ignorant about his legal rights, entitlements and not vigilant, he will get partial success and will have to be contented with few chips of fruit produced by his hard labour and larger chunk will go to the owner who will seldom volunteer a helping hand.

So there is an intense need to instil competence in the management of this valued industry. Introducing a comprehensive course of study, containing all the relevant aspects of construction management and by writing good books and doing research work, covering all aspects of the problem, can fill this gap.

Since construction activities are carried out mostly at the construction site, which are usually far flung from main cities, the academician/authors, and the faculty may not be aware of the practical difficulties and nuances of construction management. These might be the reason that construction management has not received due place in the institutes, universities, colleges and in many management books.

APPLICATION OF PRESENT PAPER:

This research work will be useful to individual owner, consultant and contractor as well.
If a young entrepreneur decides to enter in construction business he is being told in advance about the pros and cons of construction industry. If he plans his business and manages the construction work himself, by employing his own construction team and purchasing the material himself, he will certainly flourish.
If the entrepreneur who is conversant with the nuances of construction management practice, can extract maximum from the contractor by applying the knowledge discussed herein, with not much difficulty and solving their problem in time without being deceived or cheated by any one. Consultants can use the present work for optimising the project during conception, definition and planning phase of the project.
At last the maximum benefited is the contractor who feels the beat (profit) of the heart of construction project i.e. construction phase.

CONCLUSION:

Today, due to increased competition and the capital, which is scarce, large constructions like metro rail, infrastructure development, high-rise building cannot be handled without the use of modern construction equipment and modern construction management techniques to reduce time and to maintain higher standards of construction quality. On one hand, it is necessary to use modern machinery and latest construction management tools to optimise the construction activity to improve the physical productivity of fixed and variable factors of production. It does not mean that will leave thousands of labourers and other human resource jobless. It is an irrational thinking as it is well said that 'tomorrow will take its own course'.
Meticulous management of the finances is necessary for the exponential growth of the company . At last any productive activity serves the society so is with the construction activity. In broader sense every individual of the country will get benefit of increased productivity directly or indirectly through the created individual assets or public infrastructure.

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