

# STUDY OF PROJECT MANAGEMENT SYSTEMS AND TECHNIQUES IN SMALL & INFORMAL CONSTRUCTION FIRMS

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## Abstract:

Small to medium sized enterprises play an enormous part in economic activity through employment, innovation and growth. Project management can play an enormous role in facilitating this contribution, however; SMEs require less structured kinds of project management than those employed by larger, traditional organizations. the small construction enterprises and carries out their systematization according to structure of costs of production of building and construction works, represents the overall structure of costs of implementation of the innovative project by the small and medium-sized construction enterprises.

**Keywords — Project Management, small firms, project, performance.**

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## I. INTRODUCTION

PROJECT MANAGEMENT ISN'T WIDESPREAD IN SMES. MOST OF THE PAPERWORK AND NORMAL BUSINESS ACTIVITIES ARE LOOKED BY THE STAFF IN AN OFF-THE-CUFF MANNER AND IN MOST CASES WITH NONE PROJECT MANAGEMENT TRAINING. THIS IS OFTEN TO NOT SAY THAT THEIR PROJECTS AREN'T SUCCESSFUL. MANY SMES HANDLE PROJECTS WELL AND ARE SUCCESSFUL. THIS MIGHT FLOW FROM TO THEIR TACTICAL KNOWLEDGE AND THEREFORE THE INDIVIDUALS INVOLVED INSTEAD OF A CONSCIOUS EFFORT. BUT THESE COMPANIES MIGHT BE FALLING IN NEED OF THEIR POTENTIAL AND SHOULD PERFORM BETTER IF THEY FOLLOW A CORRECT FORMAL SYSTEM OF

PROJECT MANAGEMENT PRACTICES .THIS PROJECT AIMS TO REVIEW THE APPROACH OF SMALL AND INFORMAL CONSTRUCTION FIRMS TOWARDS CONSTRUCTION MANAGEMENT AND THEREFORE THE VARIOUS TECHNIQUES ADOPTED BY THEM AND THEREBY SUGGEST SYSTEMS AND METHODS IN PROJECT MANAGEMENT TO ENHANCE THEIR PERFORMANCE .A STARTUP CONSTRUCTION FIRM THAT DIDN'T HAVE FORMAL PROJECT MANAGEMENT SYSTEMS AND TECHNIQUES IN SITU WAS IDENTIFIED AND UPON DISCUSSION WITH THEIR OWNERS AND EMPLOYEES REGARDING THEIR PRACTICES, THEY WERE WILLING TO ALLOW US TO ASSIST THEM IN THEIR PROJECTS BY FIXING A PROJECT MANAGEMENT FUNCTION THERE BY ANALYZING THEIR WORK .DURING THE COURSE OF THE STUDY, SIGNIFICANT IMPROVEMENTS

WERE OBSERVED WITHIN THE SYSTEM ADOPTED BY THE FIRM IN VARIOUS ASPECTS LIKE INTERNAL CONTROL, PROJECT MONITORING & TRACKING AND SAFETY. IT CAN THUS BE CONCLUDED THAT INTRODUCTION OF PROJECT MANAGEMENT TECHNIQUES ALBEIT ON A LITTLE BUT SYSTEMATIC WAY CAN HELP BRING IMPROVEMENT WITHIN THE PERFORMANCE OF THE FIRM AND CONTRIBUTE TO THE ORGANIZATION'S GROWTH.

## **II. LITERATURE REVIEW**

1) PROJECT MANAGEMENT IN SMALL TO MEDIUM-SIZED ENTERPRISES A COMPARISON BETWEEN FIRMS BY SIZE AND INDUSTRY (2009), TURNER ET AL. IN THE FIRST STAGE OF THEIR STUDY GATHERED PRELIMINARY DATA ON THE UTILIZATION OF PROJECT MANAGEMENT IN SMEs IN IRELAND. THEY USED A WEB-BASED QUESTIONNAIRE TO GET QUANTITATIVE DATA FROM A BIGGER RANGE OF RESPONDENTS. THE PRIMARY PART ASKED QUESTIONS ON THE CORPORATE. TO WORK OUT THE DIMENSIONS OF THE COMPANY: ABOUT THE AMOUNT OF EMPLOYEES AND TURNOVER. THE SECOND SET OF QUESTIONS ASSOCIATED WITH THE CHARACTER OF PROJECTS WITHIN THE CORPORATE. THESE QUESTIONS WERE ESSENTIALLY THE DURATION OF THE COMPANY'S PROJECTS, THE DIMENSIONS OF PROJECT TEAMS AND WHETHER THE CORPORATE EMPLOYS DEDICATED PROJECT MANAGERS. IT ALSO ENQUIRED WHETHER ANY PROJECT MANAGEMENT TOOLS AND TECHNIQUES WERE USED AND WHICH PROJECT MANAGEMENT PRACTICES THE RESPONDENTS THOUGHT WAS ESSENTIAL, USEFUL OR EXCESSIVELY BUREAUCRATIC. SMALL-SIZED AND LITTLE COMPANIES NEED LESS BUREAUCRATIC, MORE PEOPLE-FOCUSED SORTS OF PROJECT MANAGEMENT, TO FACILITATE THE WORK OF TEAMS OF GENERALISTS. MEDIUM-SIZED AND ENORMOUS COMPANIES NEED MORE FORMAL PROJECT MANAGEMENT APPROACHES TO COORDINATE THE WORK OF TEAMS OF SPECIALISTS. BUT MEDIUM-SIZED COMPANIES

STILL SIMPLER SORTS OF PROJECT MANAGEMENT THAN LARGE COMPANIES. SMEs REQUIRE SIMPLIFIED VERSIONS OF PROJECT MANAGEMENT, WHICH CAN REQUIRE FEWER RESOURCES FOR HIS OR HER ADOPTION AND CAN SIMPLER TO FIND OUT. SMALL SIZED AND LITTLE COMPANIES ESPECIALLY REQUIRE SIMPLE, PEOPLE-FOCUSED VERSIONS THAT PROVIDE A FIT WITH THE CULTURE OF SMEs WHICH WILL BE EMPLOYED BY NON-SPECIALIST PROJECT MANAGERS. SIMPLIFIED VERSIONS WHICH WILL BE READILY APPLIED BY NON-SPECIALIST PROJECT MANAGERS GOT TO BE MADE AVAILABLE. PROJECT MANAGEMENT THEORY HAS DEVELOPED WITHIN THE CONTEXT OF HUGE PROJECTS OFTEN IN LARGE ORGANIZATIONS. THE IDEA ALSO MUST BE DEVELOPED FOR LITTLE PROJECTS IN SMALLER ORGANIZATIONS

2) PROJECT MANAGEMENT IN SMALL AND MEDIUM-SIZED ENTERPRISES (2016) - ALEJANDRO J. ROMAN A LITTLE MEDIUM ENTERPRISES NEEDS AN EQUIVALENT MANAGEMENT AND OPERATION TOOLS AS ANY COMPANY, IN FACT ADAPTED TO ITS SIZE, BUT IF IN ANY CASE IT'S FORMALIZED IT'S ESSENTIAL FOR ANY ORGANIZATION TO THINK ABOUT THE "CHANGE" MANAGE IT, ESPECIALLY TO REQUIRE UNDER CONSIDERATION THE REQUIREMENTS OF THESE INVOLVED (READ STAKEHOLDERS). INTRODUCING CHANGES DURING THIS SORT OF ORGANIZATION SOMETIMES LEADS TO DIFFICULT TIMES TO DIGEST AND IMPLEMENT. THE AUTHOR'S PROPOSAL FOR THE SME (SMALL MEDIUM ENTERPRISES) IS TO INTRODUCE SMALL VISIBLE CHANGES WITHIN THE IMMEDIATE, ALWAYS FROM THE INTEGRATIVE PERSPECTIVE OF THE CLIENT AND THEREFORE THE PROFITABILITY OF THEIR BUSINESS.

3) ANALYSIS OF DELAY IN EXECUTION OF CONSTRUCTION PROJECTS (2018) - P. MURALIDHAR, RAHUL KUMAR JAIN, B. SRIVASTA, V. POORNA CHANDRA RAO SUCCESSFUL MANAGEMENT OF CONSTRUCTION PROJECTS IS PREDICATED ON THREE MAJOR FACTORS I.E. TIME,

COST AND QUALITY. TIME AND PRICE ARE THE LIFELINES OF ANY PROJECT ASIDE FROM ITS QUALITY. DELAY IS ONE AMONG THE MOST IMPORTANT PROBLEMS, THE DEVELOPMENT FIRM'S FACE. DELAYS CAN CAUSE MANY NEGATIVE EFFECTS LIKE LAWSUITS BETWEEN OWNERS AND CONTRACTORS, HIGHER PROJECT COSTS, LOSS OF PRODUCTIVITY AND REVENUE, AND CONTRACT TERMINATION. AMONG ALL THE CAUSES FOR DELAY THE HIGHEST RANK GOES TO 'LATE IN REVISING AND APPROVING DESIGN DOCUMENTS', SUBSEQUENTLY DELAY THANKS TO SUBCONTRACTOR, DELAY THANKS TO NON-AVAILABILITY OF MANPOWER, FREQUENT BREAKDOWN OF KIT, LABOUR DISPUTES AND ALTER IN MATERIAL SPECIFICATIONS IN ELEVENTH HOUR ARE OCCUPYING FROM SECOND RANK TO FIFTH RANK RESPECTIVELY. THESE ISSUES WITHIN THE CONSTRUCTION PROJECTS ARE OFTEN RESOLVED BY PAYING SOME MORE ATTENTION. IT'S OBSERVED THAT THE EXTREMELY CRITICAL DELAYS ARE OCCURRING FROM THE CLIENT SIDE ALSO AS CONTRACTOR SIDE. OTHER CAUSES ALSO ARE CONTRIBUTING SIGNIFICANTLY FOR DELAYS IN EXECUTION OF PROJECTS ARE THANKS TO LACK OF EXPERIENCE PARTURIENT SKILLS AND EQUIPMENT BREAKDOWN ETC. HENCE THIS DELAY ANALYSIS EMPHASIZES ON CERTAIN THINGS TO BE FOCUSED TO SCALE BACK THE DELAYS IN EXECUTION OF CONSTRUCTION PROJECTS WILL LEADS INCREASE THE LOCATION PRODUCTIVITY.

### III. RESEARCH METHODOLOGY

#### OBJECTIVE OF STUDY:

A study can be defined as a 'small study to test research protocols, data collection instruments and other research techniques in preparation for a larger study. It is conducted to identify potential problem areas and deficiencies in the research instruments and protocol prior to implementation during the full

study. The firm to improve their performance in the various aspects mentioned.

#### DETAILS OF PROJECT:

Name of Company : Ravi Chhaya Builders & Developers

Address : Maruti Park, Kanjeevara Junction, Devrukh Sagamneswar, Ratnagiri

Email : [ravichhayabuildersdeveloper@gmail.com](mailto:ravichhayabuildersdeveloper@gmail.com)

Year of Establishment : 2019

Organisation : Private Limited Company

Owners : Praddyumna Mane, Neha Mane

No. of Full Time Employees : 4

Size of labour force : 20 labourers

Machinery : Rent : Tractor, Breaker, Drum Mixture Owned: Cutter machine, Electric Vibrator

#### Project Details –

Building Type : Residential cum Commercial

No of Floors : G+4

Flats/Shops : 1BHK - 16 units

: 2BHK - 8 units

: Shops- 9 units

#### PROBLEMS IDENTIFIED

This firm was established in 2019, working on its first real estate project i.e. the development of a Residential cum Commercial Building. Being a new firm, there was a lot of novelty involved and the systems adopted were highly unstructured

. The issues faced by the firm were:

- Lack of a proper plan and schedule
- Absence of Quality Control Guidelines & System

- No measures to track productivity
- Inconsistent Labour availability
- Ignorance of Safety Practices
- Document Management
- No preparation for problems faced during monsoon

The problems caused due to these unorganized management practices were that due to unavailability of a planned schedule of activities and standard operating procedures, major rework had come up at a few instances which caused delay in the project and also cost escalation. The scheduling and planning of activities were done based on the experience of the supervisors at site. Document and stakeholder management issues were also faced, as the delay in procuring the required drawings from the architects on time prevented proper planning of procurement of resources. Improper material storage & housekeeping and lack of safety practices are also problems observed at the site which could lead to accidents.

#### CONTRIBUTION TO THE PROJECT

According to the problems identified, an attempt was made to induce project management techniques into the execution phase of their project. This allowed us to gauge the response of the firm and accordingly suggest improvements in their practices. The major contribution on our part was preparing a list of Quality Control (QC) Checklists and Weekly Progress Report (WPR) format to be used during the execution. A basic MSP schedule was also prepared for the core and shell work at site based on the quantities provided by the site engineer and the productivity of the labourers based on experience.

#### QC CHECKLIST:

A checklist consists of items that are important or relevant to a particular issue or situation. Checklists are used under operational conditions to make sure

that all important actions or steps have been taken. Their primary purpose is to guide operations. The QC checklists would enable the firms to minimize errors during the execution of each activity, ensure all steps are followed and thereby avoid rework at a later stage.

#### WEEKLY PROGRESS REPORT:

A weekly progress report typically is meant to convey the current position of a project. It helps to track the progress of work, keep a record of the quantity of work planned, the resources consumed in that week. If certain problems persist, reading past status reports can offer a chronological view of the issue and insight into it. The obstacles faced and implemented solution during execution can also be recorded in the report which will help the team in case such an issue arises in the future. The idea behind going for Weekly Progress Report format rather than a Daily Progress Report format is that, since the pace of work at a newly started enterprise is not very high, a more practical volume of completed works can be tracked using a WPR.

#### MSP SCHEDULE:

Preparing a proper schedule helps determine the timing and sequence of activities in a project and gives a basic timeline to be followed for the project. The process of scheduling uncovers flaws in the plan, leading to revisions of the plan. Having a schedule gives the firm short term targets to be accomplished and plan the procurement of resources accordingly.

#### ANALYSIS & SUGGESTIONS

The measures suggested for project management were gradually integrated as a part of the firm's routine procedures. The effect was that there was proper documentation available at the site for the materials used and the labourers employed. This also aided the site engineers during billing. The occurrence of errors also went down considerably

due to the use of checklists at the site and the delays were also brought down to a certain extent by following the schedule prepared. The main achievement in the whole run was to set up a formal mechanism for the firm which could then be improved and updated based on the requirement and the results observed.

#### **IV. CONCLUSIONS**

THE CONSTRUCTION PROCESS MAY BE A COMPLEX SYSTEM. THE AIM OF THIS WORK WAS TO SPOT THE RELATION BETWEEN THE PROJECT'S PROBLEM AND THEREFORE THE USE OF PROJECT MANAGEMENT PROCESSES IN SMALL AND UNORGANIZED FIRMS IN CONSTRUCTION. THERE'LL BE SIGNIFICANT IMPROVEMENT WITHIN THE OVERALL PERFORMANCE OF THE PROJECTS. IT ARE OFTEN CONCLUDED THAT SO AS TO SCALE BACK PROJECT MANAGEMENT PROBLEMS FOR THE DEVELOPMENT FIELD SMES, THESE COMPANIES SHOULD DEVOTE ADDITIONAL EFFORTS ON THE SYSTEMATIC USE OF PROJECT MANAGEMENT PROCESSES. COMPANIES WILL SOME ADVANTAGES SUCH AS: SYSTEMIC VISION OF THE PROJECTS, PROCESS OPTIMIZATION, DEVIATION

MINIMIZATION, COMMUNICATION IMPROVEMENT AND MORE. THE MAIN CHALLENGE LIES IN CONVINCING THESE SMALL AND UNORGANIZED FIRMS TO ADAPT THESE PRACTICES IN THEIR FIRM BY INFORMING THEM OF ITS ADVANTAGES AND THEREFORE THE TIME AND COST SAVING IT CAN CAUSE IN THEIR PROJECTS. WITH BETTER PERFORMANCE, THE CREDIBILITY OF THE ORGANIZATION ALSO INCREASES AND THUS HELPS IN GROWING THE CONSTRUCTION INDUSTRY.

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