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A STUDY ON PROJECT MANAGEMENT TECHNIQUES TO AVOID PROJECT FAILURE

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Abstract - *Project management is a process of initiating, planning, executing, controlling and closing the project or a work in order to meet target of the project. Project Management is the application of certain tools and techniques for utilizing resources for achieving a unique, complex, one-time task with respect to time, cost and quality constraints. A project is considered as a failure, if it fails to meet the expectation of stakeholders and the failure incident of project is associated with cost, quality and time. In this research, the research is focused on finding out reasons behind the failure of projects and the techniques that can be implemented to avoid project failure.*

Key Words: Project Management, Project Failure, Project management Techniques, Project Management Office, Project Management Information System

1. INTRODUCTION

The Project Management Institute's (PMI) guide to the project management body of knowledge (PMBOK 1996, p.4) defines a project as "a temporary endeavor undertaken to create a unique product or service. Temporary means that every project has a definite end. Unique means that the product or service is different in some distinguishing way from all similar products or services". Project management is defined as: "the application of knowledge, skills, tools and techniques to project activities in order to meet stakeholder's needs and expectations from a project". This definition clearly identifies that the purpose of the project is to meet the stakeholder's needs and expectations. It is therefore a fundamental requirement for the project manager to establish who are the stakeholders (besides the client) and analyze their needs and expectations to define, at the outset, the project's scope of work and objectives.

In the present scenario, there are many cases of project failure in the construction industry. A project is said to be a failure if it does not meet the desired goal by the stakeholders. In any construction project, a number of scare resources are at stake. If a project executed well- under stipulated time and cost, and with desired quality the project can be called as a successful project. The attributes or factors that make a project either a success or a failure have been identified by the researchers. The objective of the project management is to ensure success of project by managing the schedule, cost and quality, generally known as the 'iron triangle'. Apart from the iron triangle, a number of project performance parameters such as satisfaction of stakeholders, technical standards of project, and least number of disputes on the completion of the project are also analyzed to measure the success of a project.

2. LITERATURE REVIEW

Jeffrey ket.al., (1990): Even though it is difficult to define exactly what failed projects, there appear to be some common aspects that suggest certain characteristics are strongly related to perceived project failure.

Based on an examination of the literature and interviews with experienced project managers, three distinct aspects of project performance (outcome) were identified as benchmarks against which to assess the success or failure of a project .These aspects are:

1) The implementation process itself;
2) The perceived value of the project;
3) Client satisfaction with the delivered project.

Joseph Heagney (2011): PMI defines a project as "a temporary endeavor undertaken to produce a unique product, service, or result" (*PMBOK® Guide*, Project Management Institute, 2008, p.5). This means that a project is done only one time. If it is repetitive, it's not a project. A project should have definite starting and ending points (time), a budget(cost), a clearly defined scope or magnitude of work to be done, and specific performance requirements that must be met. Project management is application of knowledge, skills, tools, and techniques to project activities to achieve project requirements.

The PMBOK® Guide defines project management as "application of knowledge, skills, tools, and techniques to project activities to meet the project requirements". Project management is accomplished through the application and integration of the 42 logically grouped project management processes comprising the 5 Process Groups: initiating, planning, executing, monitoring and controlling, and closing.

The Yaser HasanAl- Mamary et.al., (2013): Data are the lifeblood of today's organizations, and the effective and efficient management of data is considered an integral part of organizational strategy. Successful organizations should collect high quality data which will lead to high quality of information. For a successful and effective managerial decision making, it is necessary to provide accurate, timely and relevant information to decision makers. Management Information System is type of information systems that take internal data from the system and summarized it to

meaningful and useful forms as management reports to use in managerial decision making. Management information system improves information quality and subsequently effects on managerial decision-making.

Adam Kuceraet.al., (2013): Building construction has gone through substantial change with the emerging spread of Information Communication Technology ICT during last decades. In the field of construction industry, the term intelligent buildings describes facilities equipped with devices and systems that can be remotely controlled and programmed and that are able to communicate and collaborate in order to ensure convenient building environment and effective operation. However, installing devices with such capabilities is only one part of the task of effective facility management and risk management. Facility managers have to be provided with tools that allow them to inspect and analyze gathered building operational data and make decisions to improve building performance. Decision support tools for facility managers usually lack deep integration with building systems.

Willy Herroelen et.al., (2005) : The vast majority of the research efforts in project scheduling assume complete information about the scheduling problem to be solved and a static deterministic environment within which the pre-computed baseline schedule will be executed. However, in the real world, project activities are subject to considerable uncertainty, which is gradually resolved during project execution. In this survey we review the fundamental approaches for scheduling under uncertainty: reactive scheduling, stochastic project scheduling, fuzzy project scheduling, robust (proactive) scheduling and sensitivity analysis. We discuss the potentials of these approaches for scheduling under uncertainty projects with deterministic network evolution structure.

Mohamed Maharoof Vaheedet. al.,(2015) : The aim of this study is to look at what causes the failure of ICT projects pursued by governments. As governments are working on implementing ICT projects to take advantage of the benefits that Information and Communication Technologies affords to organizations, there have been cases of such ICT projects failing to take off due to several factors and at times blowing the allocated budget. This study will analyze the failure from the perspective of the vendors who are charged with developing and implementing these ICT projects. The study will make use of primary data from a number of vendors and the existing literature concerning the topic to establish the main factors resulting in these failures. A total of 20 respondents representing 10 ICT Vendors have been interviewed. Future research direction on developing business and technical user requirement for tenders with the customers and vendors prior to tender advertisement are discovered in this research.

Milind Padalkaret.al., (2010): Earned Value Analysis is a recommended technique for monitoring and controlling project execution. Earned Value Analysis (EVA) is a classical technique to monitor and control project performance. Yet, despite four decades of institutional backing and sustained advocacy, its adoption still remains limited. It draws loyal adherents as well as opponents, and an ongoing debate about its practical utility. Empirical studies of its effectiveness or adaptation for different situations are sparse; and the claims, objections do not appear to be reconciled. In this paper, we survey academic and practitioner literature on Earned Value Management and its extensions, and attempt to reconcile the debate by just opposing the claims and counter claims against parallel research streams in project management. We suggest an integrative schema to ground the technique amidst the various bodies of research opinions in order to elicit future directions

Jianqing Chen et. al., (2010): Procurement auctions play an important role in eliciting suitable suppliers or contractors for various projects. Procurement auctions, buyers often spend most of their effort in finding the best contract with the lowest price. Another critical issue is that the ability of a potential supplier to fulfill the project and the associated uncertainty, which are typically unobservable and thus non contractible and should never be neglected, because it would otherwise lead to disastrous outcomes. Procurement auctions are sometimes plagued with a chosen supplier's failing to accomplish a project successfully. The risk of project failure is considerable, especially when the buyer has inadequate information about suppliers ex ante and the project can only be evaluated at the end.

Rory Burke (2001): A project is a temporary endeavor undertaken to create a unique product or service. Temporary means that every project has a definite end. Unique means that the product or service is different in some distinguishing way from all similar products or services. Turner defines a project as an endeavor in which human, (or machine),material and financial resources are organized in a novel way, to undertake a unique scope of work, of given specification, within constraints of cost and time, so as to deliver beneficial change defined by quantitative and qualitative objectives.

Project management is defined by the body of knowledge as: "the application of knowledge, skills, tools and techniques to project activities in order to meet stakeholder's needs and expectations from a project. In other words the project manager must do whatever is required to make the project happen - one could not have a wider all-encompassing job description

Amgad Badewi (2016): Benefits management (BM) and project management (PM) are two interrelated approaches to the success of projects. Project Management practices were not only found to influence project management success but also to affect project investment success. However, BM is found to be less significant and to have less impact on project investment success. The probability of project success is enhanced significantly when PM and BM practices are combined together.

Jean binder (2007): In the project management literature we can find different types of projects, when comparing the number of organizations and locations involved in their implementation. In traditional projects, a large majority of the team members are working for the same organization and in a single location. Distributed projects involve team members working in many locations, and can also be called international projects when they include people located across country borders. Virtual projects are composed of team members dispersed geographically and working in different organizations. Project managers may face specific challenges on virtual projects as they need to balance different interests, company cultures and working practices, and most communications occur over a distance. International projects require the collaboration of people from different country cultures and languages, sometimes with the added complexity of the locations over various time zones.

Jack R. Meredith and Samuel J. Mantel, Jr(2009):The best way to explain the unique role of the PM is to contrast it with that of a functional manager in charge of one of a firm's functional departments such as marketing, engineering, or finance. Such department heads are usually specialists in the areas they manage. Being specialists, they are analytically oriented and they know something of the details of each operation for which they are responsible. When a technically difficult task is required of their departments, they know how to analyze and attack it. As functional managers, they are administratively responsible for deciding how something will be done, who will do it, and what resources will be devoted to accomplish the task. The PM, new or experienced, must oversee many functional areas, each with its own specialists.

RolfH. Mohring Frederik Stork (2009): The Resource Constrained Project Scheduling Problem (RCPSP) has been extensively studied in the past decades, and several Branch and Bound algorithms have been developed and compared. Unfortunately, only few of the underlying models cover the systematic under estimation of the project cost that frequently arises in praxis due to stochastic influences on activity durations. To the best of our knowledge, computational results on the resource constrained project scheduling problem with stochastic activity durations have been reported only by Igel mundand Radermacher (1983a), (1983b).

Roger Atkinson (1999): Project Management is the application of a collection of tools and techniques (such as the CPM and matrix organization) to direct the use of diverse resources toward the accomplishment of a unique, complex, one-time task within time, cost and quality constraints. Each task requires a particular mix of these tools and techniques structured to the task environment and life cycle (from conception to completion) of the task.

Christian Artiguesabet.al.,(2012): Both in production and in service sectors, project management is a discipline of particular interest. Project-based organization and work is encountered within a very wide variety of applications: research and development (R&D), software development, construction, public infrastructure, process re-engineering, maintenance operations, A project itself can be informally defined as a unique undertaking, consisting of a set of precedence-related activities that have to be executed using diverse and mostly limited company resources. Project management deals with the selection and initiation of projects, as well as with their operation and control. Project scheduling, as a part of project management, is aimed at deciding when in time to start (and finish) which activities, and at the allocation of scarce resources to the project activities.

This research proposes models for project scheduling when there is considerable uncertainty in the activity durations, to the extent that the decision maker cannot with confidence associate probabilities with the possible outcomes of a decision. Techniques stem from robust optimization, which is a theoretical framework that enables the decision maker to produce solutions that will have a reasonably good objective value under any likely input data scenario.

Lars Sundinget.al., (2014): Problems concerning quality and productivity in the construction sector have been a recurrent issue for many years and seem to remain in spite of various initiatives for resolving them. This situation is a result of human action. From social sciences we know that psychological factors crucially influence action design. Knowledge of this influence seems however to be underestimated in the construction sector, and could represent a missing link between strategies, plans and instructions, and the actions carried out. In order to prospect for new problem solving approaches we undertook a questionnaire-based survey to investigate how individuals in the sector perceive the importance and occurrence of, and attention directed to, different proposed causes of inadequate performance.

3. CONCLUSIONS

Studies and discussions were done on project management techniques to avoid project failure on various fields of construction industries across the globe based on the various journals collected. The definitions of project management and project failure were also discussed in detail.

The different criteria for project performance measurement including the iron triangle in these industries were discussed. The different project performance attributes ie, success attributes and failure attributes were also identified and discussed. The research methodology focuses on the researcher's blueprint of selection of the different research methods that will be successfully used for the completion of the research project. Project management techniques to avoid project failure vary from project to project and region to region. So, further research is required to enhance the knowledge about project management and project failure.

REFERENCES

[1] Adam Kucera and Tomas Pitner, (2013), 'Intelligent Facility Management for Sustainability and Risk Management' P608-P610.
[2] Amgad Badewi, (2016), 'The impact of project management (PM) and benefits management (BM) practices on project success: Towards developing a project benefits governance framework', P761-P763.
[3] Christian Artiguesab, Roel Leusc, Fabrice Talla Nobi bonc, (2012), 'Robust optimization for resource-constrained project scheduling with uncertain activity durations', P1-P5.
[4] Dennis Lock, (2007), Project Management, P17-P27
[5] Jean binder, (2007), 'Global Project Management: Communication, collaboration and management across borders' .P1-P2.
[6] Jeffrey k. Pinto Samuel J. Mantel, jr. (1990), 'The Causes of Project Failure' P269-P270.
[7] Jianqing Chen, (2010), 'Managing Project Failure Risk through Contingent Contracts in Procurement Auctions', P23- P25.
[8] Joseph Heagney, (2011), 'Fundamentals of Project Management', P2-P6.
[9] Jr. Jack R. Meredith and Samuel J. Mantel, (2009), 'Project Management, a Managerial Approach', P109- P110.
[10] Kumar NeerajJha, (2011) 'Construction Project Management (Theory And Practice)', P655-P661
[11] Lars Sunding and Anders Ekholm, (2014), 'Problems and Problem Attention in the construction Sector –Understanding the Influence of Human Factors',
[12] Lavagnon A. Ika and Amadou Diallo and Denis Thuillier, (2009), 'Project management in the international development industry- The project coordinator's perspective' P-P.
[13] Mehdi Ebrat And Reza Ghodsi, CivEng (2014), 'Construction Project Risk Assessment by Using Adaptive-Network-Based Fuzzy Inference System: An Empirical Study', P 1213 – P 1214. https://doi.org/10.1007/s12205-014-0139-5.
[14] Milind Padalkar, Saji Gopinath, (2010), 'Earned value analysis in project management: Survey and research potential', P1-P2
[15] Mohamed Maharoof Vaheed, Md. Nor Hayati Tahir and M.A. Burhanuddin (2011), 'ICT Project Failure in Government Sectors: Factors from Vendors Perspective, P2706- P2707.
[16] PMBOK, (2001), "A Guide To The Project Management Body of Knowledge, Project Management Institute', http//www.pmi.org, P5-P6.
[17] Ralf Muller and J. Rodney Turner, (2007), 'Matching the project manager's leadership style to project type', P21-P22.
[18] Ralf Muller, Umea˚ University, Sweden and Rodney Turner, Lille School of Management, France, (2007), 'The Influence of Project Managers on Project Success Criteria and Project Success by Type of Project', P298 –P301.
[19] Roger Atkinson, (1999), 'Project management: cost, time and quality, two best guesses and a phenomenon, it's time to accept other success criteria', P337-P338.
[20] Rolf H. MohringFrederik Stork, (2009), 'Stochastic project scheduling under limited resources: a branch and bound algorithm based on a new class of policies' P1-P4.
[21] Rory Burke, (2001), Project Management Planning and Control Techniques', P2-P3.
[22] Terry Lyons and Martin Skitmore, (2004), 'Project Risk Management in the Queensland Engineering Construction Industry, A Survey. P1-P12.
[23] The Influence of Project Managers on Project Success Criteria and Project Success by Type of Project, 298-299.
[24] William R Duncan, director of standards, (1996), 'A guide to the project management body of knowledge', P6-P7.
[25] Willy Herroelen, Roel Leus, (2005), 'Project scheduling under uncertainty: Survey and research potentials', P289-P290.
[26] Xin Liang, Tao Yu and Li Guo, (2017), 'Understanding Stakeholders Influence on Project Success with a New SNA Method: A Case Study of the Green Retrofit in China', P1-P2.
[27] YaserHasan Al-Mamary, Alina Shamsuddin and Nor Aziati, (2013), 'The Impact of Management Information Systems Adoption in Managerial Decision Making: A Review, P10-P11.