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Study of the Influence PMI Ethical Principles on Software Project Performance Based on the Experiences of Indian Project Managers

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Abstract - Project management is becoming increasingly common in the workplace, and the world of international business is quickly transforming into a project-oriented culture. Project success is critical to a company's long-term profitability, yet it is notoriously difficult to accomplish in a variety of sectors. Project managers must continuously walk the delicate line between doing what is "right" and pleasing everyone involved. These apparently conflicting viewpoints usually have an ethical grounding. Due to the rising regularity with which projects fail to provide the value intended, an ethical approach to project management has been critical in recent years. Researchers and practitioners of project management labour ceaselessly to reify ethics in project management, despite the field's expanding importance and intrinsic subjectivity. In the United States, the Project Management Institute (PMI) has developed the Project Management Body of Knowledge (PMBOK) Guide, which is a significant step in this direction. The PMI Code of Ethics and Professional Conduct, as described in the PMBOK, serves as a moral decision-making framework for project managers. This standard emphasises four elements of ethics: responsibility, respect, fairness, and honesty. These core principles have served as a global standard for professional project management behaviour in all industries.

Keywords - Influence PMI, Ethical Principles, Software Project, Indian

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1. INTRODUCTION

The project management literature emphasised that team members should conduct ethically while interacting with the project's internal and external stakeholders. Concurrent with these changes in project management was a renewed focus on business ethics as a consequence of high-profile scandals such as those at Enron and WorldCom. With the rising importance of ethics in the area of project management, there has been a rush of work from academics and practitioners to give tangible shape to this extremely amorphous idea. These efforts, in addition to the established standards and frameworks for project quality and delivery, eventually resulted in universal standards and frameworks for controlling ethics in project management. This project has been built on the Project Management Institute's Code of Ethics and Professional Conduct, which is part of the PMBOK. The PMI Code of Ethics and Professional Conduct serves as a guide for PM professionals to assist them do the right thing in their career. This standard emphasises a set of core ethical values that include responsibility, respect, fairness, and honesty. The Project Management Institute (PMI) gives definitions of each of these principles to assist practitioners in learning to behave ethically while carrying out projects.[1]

The success and development of India's software industry has piqued the interest of companies all over the world, and India is now one of the world's top software manufacturers. The Indian IT industry has become a byword for quality inside the nation, and it is largely acknowledged as a vital contributor to the country's thriving economy. The country's software industry presently contributes roughly 5.4% of GDP, has a local market worth $16 billion, and employs over 1.5 million people. The industry as a whole has grown at a CAGR of about 40% during the previous six years.

1.1 Importance of Project Management

Strategic planning and development are ongoing processes in contemporary firms, with an emphasis on discovering, analysing, and responding to internal and external opportunities and dangers. Businesses must prepare for and execute software application development projects that give a strategic advantage while simultaneously cutting costs and development times in order to put their goals into action. Businesses often use a project-based paradigm to produce software, applications, and services, in which individual tasks are completed individually. Project management, supported by processes and methods, is critical in driving these activities and

ensuring that projects succeed in terms of quality and meet the expectations of customers and other stakeholders. It is envisaged that by doing so, no human interaction would be required in company processes, leading in a huge improvement in productivity.[2]

Effectively managing software development projects is critical for tackling the issues that occur throughout this process. Despite the fact that software programmes are now the backbone of modern business operations, many CEOs see them as a major cause of problems for their organisations. Historically, software projects were more likely to be cancelled or delayed than any other, and when finished, they were found to have high error rates and low reliability. Researchers have established a link between failing software projects and both interpersonal and technical disputes. Project failure factors include the rejection of reasonable forecasts and project pressure to meet almost impossible deadlines. Two technical problems that often contribute to project failure are a lack of current estimate methodologies and inadequate demand growth management.

1.2 Ethics in Project Management

The Project Management Institute created a code of ethics and professional behaviour for the project management profession (PMI). PMI requires all Project Management Professionals (PMPs) to conduct themselves ethically throughout their careers. This benefits professions by increasing their reputation with customers, stakeholders, and team members. According to the PMP code of ethics and behaviour, project managers have responsibilities to their profession. These include following all regulations and procedures set by their organisation, participating in ethical professional behaviour, and contributing to the profession's progress. The scope of ethics in project management, on the other hand, is much broader, and it is more concerned with interpersonal relationships within project teams and internal relationships with the organisation, such as personal responsibility, individual contribution, leadership suppression, dominance and tolerance, and encouragement.[3]

The following findings were drawn from the study's use of the aforementioned project management definitions and ethical data:

Software Project management is the methodical and ethical creation and execution of plans to achieve a set of predefined goals. The most important aspect, however, is honest and ethical administration of the company's most precious asset: its personnel.

Businesses, governments, and non-governmental organisations all agree that modern project management practises assist IT projects in particular. People must develop their talents as both team members and project managers if they want to remain employed in today's market. They also recognise that many project management concepts will assist them in their day-to-day interactions with people and cutting-edge technology while doing everyday business.[4]

1.3 Requirement of Motivating Employees

Success in any area is impossible without motivation. Workers who are dissatisfied with their existing occupations are more inclined to hunt for jobs that would motivate them to accomplish their best. The purpose of inspiration is to motivate employees to perform their best in their tasks and to create a constructive work environment. Several blunders will be made while doing activities due to a lack of interest. People working on the project may not be able to meet the goals unless they are motivated to perform their best. When employees are uninspired, their productivity suffers and they may even abandon their employment. Workers dislike working in such circumstances, and the majority of workers are uninterested in physically demanding employment. They may be considering leaving for a better opportunity. Even if they possess the requisite talents to accomplish the project effectively, a disinterested team may undermine their own efforts by failing to collaborate and contribute to the team's objectives.[5]

1.4 Risks Affecting the Software Projects

A great deal of research has gone into the methods of identifying, analysing, and dealing with possible hazards in software development projects. Researchers have looked identified risk factors that have an influence on the results of software projects, and several risk management models have been established for more effective monitoring. Despite these benefits, software efforts have a low success rate. According to risk experts, one-third of software ventures fail or are abandoned. The excessively high rate of system failure across the board, regardless of the size or complexity of the project, has spurred investigations into why these difficulties develop and what can be done to prevent them. Furthermore, current study indicates that managers' reports on ongoing projects may be optimistically biassed, falsified, or altogether unreported, making it even more difficult for managers to identify potential project dangers.[6]

In the extant literature, several conceptual frameworks have been established to characterise the numerous risks connected with software development, as well as strategies for managing those risks and determining the success of software projects. The majority of risk management research focuses on conventional strategies for dealing with possible hazards. Some empirical study is being conducted to determine how software risk may be handled most effectively. They reviewed the data from the case studies to discover which risk management principles were not followed and why. Overall, the studies provide light on critical areas of risk management, but they fall short of comprehending the true impact of risk management via extrapolation from data. A small number of

research initiatives have created complete risk-management models. They have reached the same conclusion: improved risk management may improve software quality and increase development efficiency. While many studies concentrate on software risks, others are more strictly focused on project delays. A fragile, primarily anecdotal understanding of how software risk management might improve software development has remained.[7]

1.5 Effectiveness of Project Communication

Software development initiatives have a serious communication problem. There must be consistent dialogue between the project's three primary parties the client who provides financial backing, the contractor who builds the system, and the end user of the finished product throughout its duration. He discovered that inadequate communication was the leading cause of software failures in his poll of MIS specialists. Disagreement over intentions, bias based on assumptions, semantic disparities, and misunderstandings in nonverbal cues are only a few of the potential causes of a communication failure.

Disparate members in different locations are more likely to have trouble communicating with one another. They believe that initiatives spanning numerous nations have a higher risk of encountering complications. In addition, there are a few management issues between the off-shore and on-site groups.[8]

Team effectiveness may also be negatively impacted by members' inability to effectively communicate in English. According to the results of the National Index of Communication Abilities in India, just 10% of IT job candidates have sufficient language skills. In today's interconnected corporate world, fluency in both written and spoken English is essential. It's crucial for businesses to have measures in place to guarantee smooth internal communications. Several different interfaces make this possible.

2. LITERATURE REVIEW

Fang, Yu-Hui (2019) implies that the discrepancy between domestic and international sales trends is exaggerated because domestic sales of packages are made by resellers of packaged software licensed from foreign software producers. This, however, looks to be changing as Indian companies create domestically focused packages in sectors like financial services. The Indian software sector seems to rely heavily on coding and testing expertise. There is some worry6 that the Indian software sector is too "coder heavy" to expand into higher value-added areas of the business. These worries are bolstered by other factors such as the outflow of the IT industry's brightest minds, the dearth of capable managers for complex contract work, and the insufficient domestic spillovers from the "body shopping" of programmers to wealthy nations for onsite employment. Again, recent developments indicate that Indian businesses are making progress toward this goal. The size of India's base and the extent to which it can spread across the globe are two indicators of the country's software export potential.[9]

Alhawari, Samer (2019) This success has attracted the attention of the government and organizations like NASSCOM, who are now striving to provide incentives like venture money, as well as other resources like training and infrastructure. The effectiveness of IT-enabled services depends critically on reliable communication channels. It's also possible that historically, a lack of administrative and marketing expertise, as well as quality reputations, acted as a barrier. Multinationals, such as GE and Citigroup, are contributing to the answer by relocating part of their back-office activities to India, where they can make use of Indian workers with these kinds of capabilities. There is little question that the IT-enabled services industry has benefited from the favorable reputational and resource spillovers from the software export sector.[10]

Chaiklin, Seth. (2015) Most of the time, the effects of technological advances are far-reaching. That's a question of life and death for some people. On the other hand, it opens up a lot of doors for many countries. Numerous opportunities arise out of nowhere. Whenever India realized it could get numerous benefits from the IT industry, it seized a golden opportunity. Questions have been raised concerning whether or not other developing countries can follow India's lead in software development, and whether or not this poses a competitive challenge to software markets in the developed world. Knowing how this area is progressing in the software industry despite a challenging economic climate and significant barriers is important in light of the current conditions.[11]

García-Morales, Victor J. (2018) As a result of the complexity involved in putting these kinds of systems in place, it will be up to the project manager to determine the exact processes that will be followed. As was said in an earlier section on the PRINCE method, the number of processes that should be used for a given project depends on its scope and the stage of development. The PMBOK Guide, in its most recent iteration, outlines 42 separate project management processes, therefore this might be a significant challenge for the project manager in charge. Starting, planning, doing, checking and controlling, and finishing are the five major process groups that these processes fall under. It was decided to use PMI's PMBOK framework as the project management base for this inquiry because of its widespread availability and recognition as well as the flexibility it offers when it comes to implementation.[12]

Chowdhury, Abdullah Al Murad (2016) Most software from India is exported with very standard

services like low-level encoding and maintenance. Given the rapid growth in the need for engineers and also the relatively inelastic way to obtain technical people, there's been a lot of skepticism about the Indian software program industry's capability to maintain its overall performance because of its designated dependence upon the use of inexpensive human funds. Findings from studies conducted on the Indian software industry are discussed here. We draw from a wide variety of sources, including a survey of Indian software developers, in-person meetings and interviews with company owners, industry watchers, and U.S.-based consumers, and an online forum. Although keeping up with the current rate of progress may pose several challenges, these challenges are not insurmountable. [13]

3. METHODOLOGY

In his PhD dissertation, "Making Sense of Project Management," he argues convincingly that this kind of research technique is critical for furthering the subject of project management. The goal of this dissertation and the subsequent research is to study the gap between the professed theories of project management and the actual reality of project implementation by relying on project managers' "lived-in" experiences. According to later study, project managers need a more in-depth understanding of project management than is stated in the PMBOK in order to properly navigate a range of conditions that happen throughout project execution. Such research served as the foundation for the methods adopted in this dissertation. After careful examination of the research questions and goals, the qualitative research paradigm was chosen as the most effective and suitable for this study.

4. RESULT

4.1 Context of Research

4.1.1 Details of Informants and PMP Certification at CIS

Our analysis makes use of empirical information gathered from a leading Indian IT and ITES solutions vendor Comcast Integrated Solutions (CIS). Customers in over 65 countries benefit from their products and services, which span several sectors including aerospace, defense, engineering, petroleum, automotive, telecommunications, media and entertainment, retail, pharmaceuticals, energy, and more. As was discussed in detail in the preceding chapter, we employed the logic of theoretical sampling to choose projects and informants (PMs) for our interpretative study. CIS was picked because it consistently follows the PMI Code of Conduct while carrying out projects.

A Senior Vice President at CIS oversaw anything from five to six platinum-level endeavors. A Group Delivery Head was responsible for coordinating the delivery of many projects for a single customer. Whereas junior project managers normally only work on one thing at a time, senior project managers may oversee many projects at once. In a similar vein, Global Learning Consultants were responsible for certain industries, while Learning Consultants managed a variety of service areas. This study relied on the expertise of a Service-Project Management Learning Consultant. His duties included the selection of project associates with three to five years of relevant experience and the delivery of the required 35 hours of Project Management instruction.

Table 4. 1: Category wise Details of CIS Employees

Designations	No: of employees
Senior Vice President	2
Group Delivery Head	1
Senior Project Managers	46 (informants)
Project managers	37 (informants)
Learning Consultant (project management)	1
Global Learning Head	1
Total	**88**

Table 4.1 shows the overall number of CIS workers contacted for this research, as well as the exact number of participants who volunteered to be interviewed. Table 4.2 includes basic respondent demographic information as well as PMP certification status.

Table 4.2: Demographic Details of Informants

Sex		Age (Years)			Experience of handling/leading projects (Years)			PMP	PMP
Male	Female	<35	35 – 45	>45	5 – 10	10 – 15	>15	Certified	Trained
77	6	15	56	12	5	68	10	50	33

It's worth noting that most platinum project managers (PMs) were men (refer to table 4.2). On the other hand, the sample was representative of a wide range of ages and levels of project management expertise. There were fifty PMP-certified individuals and thirty-three PMI members who had completed the required PMP training. To provide a representative sample, efforts were made to recruit participants from a wide range of industries, project kinds, and client regions. Table 4.3 provides a summary of the industry, project type, and client location from which the respondents were culled. Our study quality guidelines also necessitated this variety.

Table 4.3: Summary of Project Verticals, Type of Project and Client Locations

Verticals (Industries)	Project Type	Project Location Client
Applied Material	Customer Support	Australia
Banking & Finance	Development	Canada
Electronics	Development/ERP	Denmark
Entertainment & Hospitality	Development/Maintenance	Global
Financial Services	Development/Support	India
General Electronics	Enhancement	South Africa
Manufacturing	Infrastructure	UK
Oil & Gas	Maintenance	USA
Public Service, Telecom	Support	

It is important to highlight that the Onsite-Offshore delivery model was used for all of the projects whose customers were situated outside of India. Two project groups, each managed by a different project manager, made up this arrangement. While one project manager (PM) is based out of the client's office with a small team of senior associates, the other PM manages the team from India. For obvious financial reasons, this strategy has found widespread adoption in India's IT sector. We surveyed project managers in charge of offshore staff in many cities throughout India.

4.1.2 Software Project Management Process and Project Lifecycle

This section has been included to help CIS's project managers in all departments better grasp the phases of a software project's lifecycle and the importance of software in the management of software projects. Project managers at CIS often break down projects into five stages so they may exercise tight oversight and control throughout the whole process. All of these stages worked together to form what was called the "project life cycle," and it included the following steps:

i. Requirement Gathering

It's the initial step, and it's crucial to finish the job successfully. An effort is made to learn about the project's goals and outcomes. There must be total agreement between the PM's viewpoint and the customer's expectations at this point. This is the point when the project's goals, timing, and money are all locked down. All potential threats have been recognized and considered.

ii. Architecture and Design

Building a comprehensive strategy for carrying out the project is the second stage. Work Breakdown Structure is a method for breaking down large projects into smaller, more manageable chunks of work (WBS). A project's resources are mapped out, and a team is assembled to implement them. It's easy to see the big picture now that we have a detailed timetable with concrete benchmarks.

iii. Build

In the build phase, work is carried out by the Work Breakdown Structure. During this phase, we keep an eye on things like budget and schedule. All responsibility for reaching milestones and handling risks rests with the project manager.

iv. Testing

The user acceptability test is performed after a WBS job is finished (UAT). The efficacy and suitability of the final aim are evaluated at this point. Here, we keep an eye on the quality. Any time an issue is found, the process loops back to the construction phase. It is common to practice for the Build and Testing phases to occur concurrently.

v. Roll Out

The project is approaching completion in its present configuration. The final product is delivered to the customer. The best practises are recorded, and the group is divided. During this phase, the Work Breakdown Structure (WBS) is essential for accomplishing duties. The project's resources have been identified and allocated, and the tasks of each team member have been specified. To create a work breakdown structure, one must be conversant with both the project's targeted output and the available labour force's skill set. Figure 4.1 is an example of a work breakdown structure.

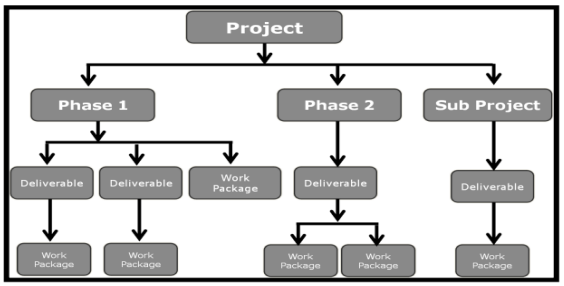

Figure 4.1: Sample of a WBS in a Software Project at CIS

4.2 Analysis of Data

After introducing the research's background, this chapter presents our study of empirical data gleaned from the first-hand accounts of project managers working on CIS's triple-platinum projects. Caution was used in the very understanding of the application of grounded theory in data analysis when we were doing this study. The origins of this warning may be traced back to the disclaimers that Roy outlined in his original editorial note for the Academy of Management Journal. Grounded theory analyses always need and make use of primary informant data, although this information is best presented conceptually. "a little higher degree of abstraction—higher than the data itself" is what is meant by "a slightly higher level of abstraction" in the context of grounded theory. The researcher's invention of axial codes has been important in ensuring the data's progression beyond the obvious. Not only did the

authors of the resulting axial codes take into account the research they had previously conducted on the topic, but they also used empirical evidence from the relationships between open codes and the dimensions of their properties. We were able to get answers to inquiries we had about new insights into the data thanks to the adequate reference material offered by the existing literature.

4.2.1 Honesty in Software Projects

With the support of the PMs' (informants') stories, we were able to illustrate the significance and importance of honesty throughout the implementation of software projects. Each component of this highest-order category was eventually broken down into 46 open codes and 7 axial codes. For a full rundown of the codes that describe dishonesty in software development projects, see Table 4.4.

4.2.1.1 Meaning

Describe the importance of this ethical principle. The need of honesty in software development endeavours is discussed, as well as what constitutes honesty in such projects. The majority of respondents believed that sharing project information with other team members, clients, management, and cross-departmental colleagues represented honesty. To communicate honestly, you must be ready to disclose everything, good or bad. Sincerity demanded not just transparency but also clear communication regarding WBS deliverables among key stakeholders. A well-communicated message would offer facts with as little ambiguity and bias as feasible. Finally, trust between project managers and their teams, as well as the client, was a representation of integrity that drove open conversation regarding the project. Throughout the undertaking, integrity and confidence were inseparable. Informants saw the significance of trust between the vendor and the client growing as CIS delivered outsourced solutions to a range of customers.

Table 4.4: List of Codes for Core Ethical Value- 'Honesty'

Part -1: Meaning	
Axial Code 1: What is Honesty?	Axial Code 2: Need for Honesty
Open Codes	**Open Codes**
1. Transparency	5. Unpredictability of Software Projects
2. Accuracy	6. Uncertainty in Software Projects
3. Trust between PM and team/colleagues	7. Honest estimates in requirement analysis
4. Trust between PM and Client	8. Iron triangle of software performance
	9. Honesty in the iron triangle
	10. Honesty in sustaining long term projects intriple platinum accounts

Part -2: Challenges		
Axial Code 3: Withholding Information	Axial Code 4: Manipulating Information	Axial Code 5: Lapses in the Governance
Open Codes	**Open Codes**	**Open Codes**
11. Bad news is no news	15. Self Interest	19. Infrequent monitoring
12. Fear of losing the Client	*16. Jugaad*	20. Circumstantial Pressures
13. Loyalty to CIS	17. Saving of Face	21. Yes, Syndrome
14. Self Interest	18. Decisions taken without consulting PMs	

Part-3: Impact	
Axial Code 6: Impact when " Not being honest"	Axial Code 7: Impact when "Being Honest"
Open codes	**Open Codes**
22. Fear of exposure	36. Trust and belief
23. Loss of face	37. collaboration
24. Breach of Trust	38. Engagement
25. Scope Creep	39. pride
26. Discontentment within team	40. Unconditional support
27. confusion leads to conflict	41. high happiness index
28. Blame game	42. Empowerment
29. people dependent	43. Fearless environment
30. delayed decision	44. direct communication
31. expectation mismatch	45. Integrity
32. over promise under delivery	46. Focused
33. ambiguity in requirement	
34. power play	
35. grape vine	

4.2.1.2 Challenges

While integrity was given plenty of attention, we found that most of our conversations with sources centered on the difficulties project managers have while trying to be truthful throughout the life of a project. This section of the highest category code, together with the related axial codes, highlights the three most significant barriers to open dialogue between a PM and the rest of the team during the execution of a software project at CIS. The first barrier to open communication is the widespread belief that it is necessary to conceal unpleasant news from the customer and the company together. Important project details were withheld for a variety of reasons, including protecting a valuable platinum client, showing devotion to upper management, and advancing personal agendas.

As a result of the significance of the triple platinum customer, we often make unachievable pledges to them by withholding information on key resources to accomplish project deadlines. The current project I am leading began with a promise to deliver a working prototype of the product to the customer within a month. Unfortunately, I was understaffed and had to hire 75 bench engineers to complete this task. Individuals worked around the clock to meet the extended deadlines. We finished the project on schedule, which helped the team and CIS win the contract. For CIS to build a solid reputation, success in these endeavors is crucial. The need to complete these projects promptly frequently resulted in a cutthroat environment for project managers, elevating each individual's agenda and self-interest.

4.2.1.3 Impact

According to the PMs who provided us with feedback, honesty has a major effect on every stage of the software development process and on the metrics used to evaluate the project's success. Twenty-four different open codes compare the effects of honesty versus dishonesty on projects. Because of dishonesty, the WBS and key project milestones were underestimated. Time, money, and quality were all negatively affected by the erroneous WBS. Misrepresentations of this kind also caused the project manager to lose face with the team, the client, and the CIS, and they caused the client to worry that the truth about the project would be revealed.

"Keeping the fact that my estimate was off the table was not honest, but I felt I had no choice. I assumed more time and money would need to be invested to make up for the mistakes. Facial disgrace would have resulted from disclosure. Fortunately, I was able to handle the project's management and see that it was completed to the client's satisfaction, even though the schedule slips had caused an increase of 10% in the overall budget. Because of our long history with the customer, we were prepared to overcome these challenges. The next time around, I resolved to use extreme caution while estimating to save myself the aforementioned embarrassment and anxiety.

5. CONCLUSION

We investigate how and why PMI has grown to be such a significant organisation in the area of project management. The project management profession has philosophically and practically explored respect, integrity, fairness, and accountability, making it an essential topic of research. Finally, the impact of ethical standards on software development project effectiveness was explored. We discuss the approach we employed to carry out our empirical research. India has become a major player in the software industry due to its rapid expansion in this sector. Despite the large amount of projects underway in India, there is a dearth of material accessible that suits the country's particular conditions. References were made to similar studies and researches from other countries and how they are applicable to the Indian context. The process of collecting the data was difficult, as is the case with any study. The researcher had the opportunity to talk to the members and collect data.

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