Visibility, a Tool to Ethical Project Management

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Abstract :

This paper examines a real-world case study of a software project during the early days of the IT boom in Bengaluru. Drawing from firsthand experience, the paper briefly explores the dynamics of IT outsourcing strategies leading to the partnership between the Indian companies with the US one, with a case study of a software-product maintenance project. This case study aims to provide a practical understanding of project management, highlighting the challenges and realities faced when theory meets the complexities of real-world execution.

Introduction

क्रियारहितं हन्त! ज्ञानमात्रमनर्थकम्।
गतिं विना पथिज्ञोऽपि न प्राप्नोति पुरमीप्सितम्॥[1]

kriyārahitaṃ hanta! jñānamātramanarthakam
gatiṃ vinā pathijño'pi na prāpnoti puramīpsitam

"Knowledge without action is futile; just as knowing the path is useless if one does not walk it."

Project management is not just about theoretical planning but about its effective implementation. Since a project is normally spawned to create unique products, the paths to completion are filled with rocks of unknowns. PMI® (Project Management Institute) recognized these challenges and introduced a comprehensive set of project management practices in their PMBOK® Guide. Although these practices were originally inspired by construction projects, they could be used as cheat-sheets for wide range of projects. However, even the most robust frameworks are not immune to practical challenges. As the adage goes, "there can be many slips between the cup and the lip."

Beyond methodologies, processes and frameworks, success in projects is dependent on human factors. The skills, mindset, and attitudes of the team play a pivotal role in

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determining the project's outcome. It falls upon the project manager to harness team talent, inspire optimal performance, and manage resources effectively. This requires dynamic leadership, as emphasized in the following subhaśitam:

लुब्धमर्थेन गृह्णीयात् क्रुद्धमञ्जलिकर्मणा।
मूर्खं छन्दानुवृत्त्या च तत्वार्थेन च पण्डितम्॥
lubdhamarthena gṛhṇīyāt kruddhamañjalikarmaṇā
mūrkhaṃ chandānuvṛttyā ca tatvārthena ca paṇḍitam ||[2]

"Appease the greedy with money, the angry with politeness, the foolish with flattery, and the wise with facts."

A project manager must adopt situational leadership to navigate challenges, resolve conflicts, and lead the team toward success. This role becomes even more demanding when managing a project across geographical and organizational boundaries—coordinating with clients in one region and a team from another company in a different location.

This raises an important question: why do organizations outsource projects to geographically and culturally diverse teams rather than relying on in-house teams? The answer lies in strategic sourcing. Beyond the principles of project management, it is essential to understand the rationale behind IT sourcing strategies.

IT Sourcing Strategy

Regarding IT sourcing strategy, I would like to share my personal experience from a conference "Application Development and Maintenance Consortium" (ADMC) in Chicago. It was a one-day conference that served as a forum for benchmarking and sharing practices among multi-billion-dollar, non-IT product companies. These organizations, whose core businesses centered around products like oil, paper, or silicon chips, faced critical decisions about how to manage their IT needs. Each company sent a representative to share its "best-known methods" and pain points of handling IT work at this conference. I was fortunate to have been given an opportunity to represent Intel Corporation and present its IT Sourcing Strategy at ADMC in the spring of 2007 and hence sharing the essence of the discussions here. The options ranged from maintaining an in-house IT team (insourcing), outsourcing the entire IT function to specialized companies, or adopting a hybrid approach by purchasing and integrating software solutions from multiple vendors. Each approach came with its own benefits and challenges, akin to deciding between buying ready-made clothes, giving garments to a tailor and getting outfits stitched to own specifications, or sewing your own garments. While ready-made solutions might be cost-effective, they often lacked customization. Tailoring offered a personalized fit but came with higher costs and potential mismatches with expectations. Sewing your own required expertise, tools, and resources, diverting focus from core objectives.

It was clear that having your IT departments was a luxury not many could afford. When I began my talk with a lighthearted introduction: "I call myself SDIE—'Sleep-Deprived Intel Employee'.", it struck a chord with other participants, and they opened up on how distributed teams across the globe was affecting the work-life-balance for many. The overarching theme was clear: profitability goals ultimately drive sourcing strategies, regardless of how uncomfortable the teams felt. For many companies outsourcing projects to India, particularly Bengaluru, was a practical and cost-effective solution, given the availability of skilled talent at a lower cost over the higher real-estate and human resource overheads locally. However, working with people on different time-zones and different cultural backgrounds had their own challenges as shown by the following case study.

Case Study: Keep the Business Running (KTBR)

तदात्वे नूतनं ~~सव्र्मायत्यां~~ सर्वमायत्यां तु पुरातनम्।
न दोषायैतदुभयं न च गुणाय कल्पते॥

tadātve nūtanaṃ sarvamāyatyāṃ tu purātanam।
na doṣāyaitadubhayaṃ na ca guṇāya kalpate[3]

"What is new today will inevitably become old tomorrow. "New" or "old" should not be the criteria for judging something as good or bad.".

When a software project concludes and the product is sold to multiple customers, it enters a new phase where ongoing maintenance becomes essential. Even with rigorous development and testing, achieving completely defect-free code is nearly impossible. Furthermore, customers often request modifications or enhancements to tailor the product to their unique use cases. Addressing these post-release challenges is critical for maintaining customer satisfaction and ensuring the product's continued success.

A US-based company, let us call it "A", faced such a scenario with their system management tool (SMT)—a flagship product and one of their main revenue generators, with a customer base in the US, Europe, Japan, and China. To ensure constant growth, the company started looking at enhancing the product, while supporting the customer with the existing product issues. Additionally, the existing code-base had to keep up with the customers upgrading their hardware and operating systems. To balance between new development requirements to woo new customers and maintaining existing customers and supporting their change requests in the product, the company "A" had to make a call –

1. **Hire new developers in the US** to take over product maintenance, allowing the experienced team to focus on new feature development and innovation. While this option ensured timely innovation, it would significantly cut profit margins.

2. **Maintain the status quo**, keeping the original team responsible for both maintenance and new feature development. This approach risked delayed feature releases, giving competitors an edge in the market. It could also demotivate the team by causing weariness and boredom.

The Solution: Strategic Outsourcing to Bengaluru

After exploring various outsourcing options, Company A chose to establish a strategic partnership with Company B in Bengaluru. This collaboration began with a low-risk initiative: assigning quality assurance tasks to Company B. To support this, Company B built a dedicated software center exclusively for Company A's projects. Access to this center was restricted to employees working on Company A’s assignments, senior management, and housekeeping staff. The employees in this dedicated center were employed by Company B and received salaries in Indian rupees, aligned with local pay scales. This arrangement proved to be mutually beneficial. Company A significantly reduced costs by outsourcing, avoiding local hiring expenses, real estate investments, and other administrative overheads. Meanwhile, Company B earned its revenue in USD and paid its employees in INR, capitalizing on the favorable exchange rate of approximately ~43 INR to 1 USD at that time.

As part of this partnership, Company B set up a team of four developers to handle maintenance tasks. Their responsibilities included resolving approximately 100 defects per release and addressing change requests.

The Hole in the Model

अपि शाकं पचानस्य सुखं वै मघवन् गृहे।
अर्जितं स्वेन वीर्येण न व्यपाश्रित्य कञ्चन॥

api śākaṃ pacānasya sukhaṃ vai maghavan gṛhe |

arjitaṃ svena vīryeṇa na vyapāśritya kañcana ||[4]

"O Maghvan, even he is happy who cooks only little leaves (for his food) earned by his own efforts without having to depend on others."

Although this approach seemed ideal on paper, it proved to be an utter failure in practice. Merely knowing the programming language was insufficient to address the customer- reported defects. The System Management Tool (SMT) was a highly complex codebase with tightly interdependent modules. Designed to operate continuously in the background, it needed to be lightweight, consuming minimal disk space and memory. The SMT codebase comprised approximately six million lines of code and was built to run seamlessly on over thirteen operating systems. Adding to its complexity, its user interfaces were localized into multiple languages, including English, German, Cantonese, Mandarin, and Japanese. This immense size and interconnectivity meant that even minor changes in one part of the code could have significant, unintended repercussions in other modules. Without a thorough understanding of the system’s intricacies, attempts to fix one issue often introduced multiple new ones. A common joke among the developers was that the product sustained the team as much as the team sustained the product! To preserve the integrity of the code, Team B was required to get their changes reviewed and approved by Company A’s developers before committing them. Despite these checks and balances, the project still failed miserably. The team struggled to meet release deadlines, with productivity averaging an unacceptable two defect resolutions per month.

Both companies had invested considerable time, money, and resources into the project, and failure was not an option. As a result, the contract was renewed, driven by the hope that the team’s performance would eventually improve. Even when developers were sent to the US for knowledge transfer (KT) sessions, the sheer magnitude of the product made it impossible to fully grasp its workings. Also, those who took a trip to the US for these KT sessions, would invariably move on, leaving the knowledge gap wide open like before.

What went wrong with this strategy? How was the situation brought back on track? These questions will be explored in the next section.

Diagnosis

A significant issue affecting productivity was the knowledge gap within the team. Except for one experienced developer in Company B, the remaining three team members were fresh graduates. The disparity between academic learning and corporate expectations, particularly in the Indian education system, compounded the problem. Many students are spoon-fed during their education, which hampers the development of independent thinking.

Typically, new employees adapt to workplace requirements by learning on the job, often diving into live projects and receiving guidance from senior developers. However, in this case, the experienced developer was overwhelmed with his own workload. Supporting and mentoring the newer team members further strained his capacity, impacting his ability to complete his tasks effectively. Additionally, the team heavily relied on Company A for clarifications, code reviews, and approvals. However, the US-based team A prioritized their own tasks, and the time-zone differences made real-time interactions difficult. Consequently, Team B struggled to make meaningful progress. When faced with challenges, the less experienced members often stalled on unresolved issues, choosing to shift their focus to other defects rather than resolving the root problems. Over time, the unsolved bugs began to accumulate. This not only delayed the project but also eroded the customer's confidence in Company B.

The Turnaround

Recognizing that a lack of expertise was a major contributor to low productivity, Company B decided to appoint an onsite coordinator in the U.S. to act as a bridge between the two teams. A seasoned project manager with a proven track record of delivering complex projects and hands-on experience in software design and development was chosen for this role. The coordinator's objective was clear: ensure the team resolved at least eight defects per week. To everyone's surprise, the team not only met this target but consistently exceeded it, resolving 12 to 14 defects weekly. Initially, both Companies A and B assumed this surge in productivity during the first month was an anomaly and continued to monitor the project closely. However, the improvement proved to be sustainable—and even grew further—allowing the team to successfully release the product within three months. Curious about the transformation, the onsite coordinator was asked, "The same team, the same product—how did this change happen after nearly two years of stagnation?" Some suspected she was writing the code herself and shielding the team. However, she assured them that it was the team's effort that drove the success and proceeded to explain how the transformation came about.

Solution in Simplicity

The Pareto Principle states that 80% of consequences have 20% causes. The coordinator had identified two key issues before going to the US - lack of expertise and lack of visibility to the project. She understood, more than lack of expertise, it was lack of decision making that was hampering them. In this kind of work, there are two main aspects - ability to recreate the issue faced by the customer accurately and then finding the problem in the code. Most of the time, team was failing at the first step itself! It was the responsibility of the quality assurance (QA) team to document steps clearly for reproducing the issues. Instead of passing on the issue to the QA team and focusing on the next one, they were spending time figuring out how to recreate the scenario on their system and missing out on fixing other issues.

So as the first step was the team members were told – "if they found incomplete documentation about a defect, to close it as a "not-a-bug" and move on to the next one". Now the onus was on the QA team to prove why it was a bug and provide the information. Once the team members had the real defects to solve, they focused on the code and were able to fix them. Since the onsite coordinator was there to help with the code-review, that delay was also overcome. By moving out the ambiguous reporting of defects to the rightful team, it also added to the improvement of the metrics. With more clarity on the product, the expertise of the team was also improved. The other change that was done was in project tracking. There was a project plan, which had the list of defects as part of the project release. Developers were assigned five defects each and once they completed them, next set was given. However, the issue was, while reporting status, all used to put "80%" complete against their task. It was difficult to estimate how much time a fix would take, and when asked, the standard reply was, they were near completion. To tweak project status reporting to give accurate data, the team was asked to use the following metrics while sharing their status –

Tasks	Metrics
Defect use case understood	10% complete
Defect reproduced in their system	20% complete
Faulty code identified	30% complete
Code change done	50% complete
Unit testing complete	60% complete
Code review complete and approved	75% complete
Integration testing done	90% complete
Submitted to the project	100% complete

This structured reporting provided clear visibility into the project's status. Additionally, developers spending more than five days on a particular issue were encouraged to seek assistance from a colleague or the onsite coordinator. As the project became more streamlined, the individual performance of each developer became apparent. Developers with more fixes under their belt stood out, enabling Company B to objectively manage employee appraisals. Collaboration with the QA team further strengthened the partnership between QA and the project team. Partnership with the QA team helped developers gain a user's perspective and deeper understanding of the complex product. Simultaneously, the QA team began acquiring technical knowledge of the underlying software. This cross-functional learning ensured QA team members could step into coding roles, when developers moved on to new projects, creating a stream of resources. The project's success was evident when Company A awarded a nearly million-dollar contract to Company B. The team, along with the project manager, received well-deserved recognition for their outstanding performance.

Conclusion - Ethics in PM is a key to success.

Ethics is synonymous with transparency, ensuring stakeholders have visibility into the work they have funded. This case study of project managing for sustaining a product demonstrates how visibility, achieved through effective metric collection, not only fostered transparency between the teams but also cultivated mutual trust. While frameworks provide valuable guidelines for smooth project execution, their success ultimately depends on how effectively the team implements them. Also, in today's world, the widespread adoption of artificial intelligence and automation is giving project managers a significant boost. However, the human aspects of project management, combined with adherence to ethical practices, are fundamental to achieving success in the field.

We observed that increased visibility into the team's progress fostered transparency among all stakeholders. The initial bottleneck, caused by a gap between skills and requirements, was addressed by carefully distinguishing critical needs from non-essential ones - akin to removing chaff from the grains. This approach enabled the team to disregard minor defects and concentrate on significant issues. As a result, the team naturally enhanced their expertise, leading to improved productivity.

References

1. *Yaśopijaya, Jñānasāram*(ज्ञानसार ९.२) *-https://ia904709.us.achive.org/12/items/in.ernet.dli.2015.444871/2015.444871.Gyan-Saar_text.pdf-last accessed 5/1/2025*
2. *Kautiliya, Chanakya (Chanakya Niti (6.2) - , https://sa.wikisource.org/wiki/*चाणक्यनीतिः- *last accessed 5/1/2025*
3. *Šrīmadveṅkaṭanātha Vedāntācārya, Yādavābhyudayam,* (यादवाभ्युदयम् (1.6)*https://prapatti.com/slokas/sanskrit/yaadavaabhyudayam/yaadavaabhyudayam.pdf*
4. *Maharśi Vyasa, Mahabharatam - Aranyaka Parva 3-196-27B - Gitapress, Gorakhpur, 2018 edition*
5. *Śrimad-AppayyaDikshiṭa, Kuvalayananda, (*कुवलायानन्द*)Choukhamba Press (2016) -https://sa.wikisource.org/wiki/*समन्वया_व्याख्या
6. *A guide to the Project Management Body of Knowledge (PMBOK® Guide), 2000 Edition, Project Management Institute, Pennsylvania, USA, www.pmi,org*
7. *The Pareto principle - 80/20 law - https://en.wikipedia.org/wiki/Pareto_principle#:~:text=for%20software%20coding.-,Occupational%20health%20and%20safety,to%20prevent%20the%20most%20accidents*

With malice towards none, with charity for all, with firmness in the right, as God gives us the light to see the right, let us strive on to finish the work we are in..

Abraham Lincoln