

DIFFERENTIATED PROJECT AND TECHNOLOGY MATURITY IN AN ORGANIZATION – A CASE STUDY

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Purpose: The main research objective is to identify the differentiation in project maturity and technological sophistication within a single organization. On this basis, the article also aims to identify improvement areas contributing positively to entire organization's project maturity consistent with the PMMM model, including the use of appropriate information technology in project management.

Design/methodology/approach: To accomplish the research objective, bibliometric analysis and literature review methods, as well as opinion surveys, were used. The empirical part is based on a case study involving a project maturity model questionnaire and an in-depth interview covering the IT tools employed in project management.

Findings: Significant differences have been identified within the organization with regard to the levels of project maturity across its various departments. These differences have also been observed with respect to the IT tools used in project management. Departments within the organization as well as relevant project management areas have been identified, which, if properly managed, will contribute positively to the organization's level of project maturity, including its use of appropriate information technology.

Research limitations/implications: The limitations of the study arise from the case study method itself, which limits the conclusions to the case analyzed. Project management praxis, nonetheless, indicates prevalence of differentiation in project maturity levels and applied information technology within a single organization.

Future research should focus on the search for the causes of, and the patterns governing, this phenomenon, in order to formulate assumptions regarding a strategy capable of levelling the differences and moving the entire organization to higher levels of project maturity.

Practical implications: The issue of organizational heterogeneity, in terms of project maturity and the IT tools used in project management, has drawn the attention of business and project management practitioners to the need for multi-pronged measurement of project maturity and technological sophistication in organizations. Only such measurement allows for targeted management of key areas in need of improvement, to bring the entire organization to a higher level of project maturity.

Originality/value: The article fills an important cognitive gap, by highlighting the need for, and indicating the benefits of, examining the areas of project maturity and exploring the use of IT across different parts of an organization. The results may be of relevance to both the researchers searching for enablers of higher project-maturity levels as well as organizations seeking a strategic approach to raising the level of project maturity and achieving IT governance.

Keywords: project maturity, project management, PMMM, information technology (IT), IT governance.

Category of the paper: Research paper, Case study.

1. Introduction

An organization's success in project execution depends on its ability to implement project management knowledge and praxis. This ability is often expressed as project maturity. It is assumed that the higher the level of project maturity in an organization, the greater its ability to successfully implement projects. The literature features numerous studies confirming the positive correlation between project success and project maturity (Irfan et al., 2019; Gomes, Romao, 2015; Besner, Hobbs, 2008; Dooley et al., 2001). The subject of project maturity represents an important area of both academic research and management practice.

One strong element within the realm of project management success, gaining increasing importance, is information technology (IT). The role of IT tools in project management has been expanding, resulting in improved productivity and project efficiency of organizations. Consequently, a need arises for a combined view of organizational project maturity and the information technology employed in project management.

The theoretical study has revealed a significant gap in research and knowledge-building regarding the interaction between project maturity and the use of IT to improve project management processes. The literature also lacks works dedicated to the issue of project maturity and technological sophistication, measured at different departments of an organization separately. Most typically, the results presented are averaged for the entire organization, which does not reflect the overall differentiated landscape of the organization, or results of a single measurement for the entire organization, which are subject to measurement site or respondent reference point errors, are reported.

The topic is therefore quite complex, and the scarcity of publications addressing the issue described leaves an exploratory gap. The present study constitutes an attempt, albeit partial, at narrowing this gap by examining the level of project maturity and IT application in project management, including the relationship between the two, across different departments within an organization. Accordingly, the main research objective entails a verification of the differentiation in project maturity and technological sophistication within a single organization, as well as identification of improvement areas contributing positively to the entire organization's project maturity consistent with the PMMM model, including the use of appropriate IT tools in project management. This objective was achieved through empirical implementation of the following sub-objectives:

1. CCE1 - to assess the stage of project maturity at selected departments within the organization.
2. CCE2 - to assess the level of project management IT sophistication (technology maturity) at selected departments within the organization.
3. CCE3 - to identify the differences in project maturity across selected departments within the organization.
4. CCE4 - to identify the differences in project management IT sophistication across selected departments within the organization.
5. CCE5 - to define the improvement areas contributing positively to the entire organization's project maturity, including the use of appropriate IT tools in project management.

2. Research Background

The theoretical study was conducted on the basis of a bibliometric analysis of the Web of Science Core Collection (WoS) and the Scopus databases. The bibliometric analysis was aimed at identifying publications simultaneously addressing the issues of project maturity and IT application, including the differentiation thereof within an organization. The work therefore began with the assessment and selection of subject areas for analysis. This resulted in the adoption of the following set of keywords in the first stage of the theoretical research: ("project maturity" OR "project management maturity") AND ("IT" OR "technologies"), to identify relevant literature. On this basis, literature corresponding to the research objectives adopted was singled out from both databases. The search was limited to English-language publications, due to later feasibility of a detailed analysis. As a result, 126 items were identified in the WoS database, and 166 items in the Scopus database. After a comparative analysis of the two databases, 79 positions were found to be recurring. Ultimately, 213 items were qualified for further detailed analysis, aimed at presenting the theoretical background and the state of research on the subject under consideration.

Back as early as 2004, Guan et al. (2004) drew attention to the need of linking organizational project maturity with the level of the technologies used in project management. Crnkovic et al. (2005) view technological support as an integral and key element driving project maturity development and indicate the need for such development through establishment of company-wide, and even industry-wide, project management standards. Accordingly, Wazed and Ahmed (2009) propose that the software development industry should adopt an approach integrating the project maturity model with real-time project management support technologies. Application of project management IT, as a contributor to the achievement of high-level project maturity, has been deliberated on in several domain and industry contexts, i.e., in geodesy

(Badea et al., 2014), banking (Vrecko et al., 2015), critical infrastructure projects (Payette et al., 2015), oil and gas (O&G) industry (Yakoot et al., 2023).

The subject literature includes studies discussing specific groups of technologies in the context of organizational project maturity. Chen et al. (2011) have lasered in on the need for a better integration of cloud computing technologies with project maturity improvement factors using the PMMM model. Bach et al. (2017) have integrated the concept of project management maturity with Business Intelligence Systems (BISs). Angara et al. (2020), in their work, pursue the idea of improving project management maturity by developing tools enabling rapid decision-making, using real-time project data and machine learning.

The literature review shows a steady increase in the role of IT as a factor in improving productivity and efficiency, and thus project maturity, in organizations (Yang et al., 2012; Obeidat, North, 2014). Some studies indicate that higher project maturity can be achieved by first focusing on IT deficiencies. This relationship has been demonstrated by Ramabulana (2015), as well as by Koekemoer and Von Solms (2017), on the example of public sector entities. Also, Liao et al. (2022) believe that, in order to enable higher levels of organizational project maturity, it is crucial to bring the technology factors to the forefront of project management. They therefore propose a novel two-dimensional project management maturity model (TPMM) integrating project business management (PBM) and information technology application (ITA).

The literature, however, also indicates that the use of IT alone, without integration with other project maturity components, will not improve the level of project maturity (Hamadameen, Hassan, 2018; Hassan et al. 2012a, 2012b, 2013; Nasruddin, Bushra, 2012). Fajsi et al. (2022), based on empirical research within the context of Industry 4.0, found that an organization's ability to cope with the changing technology trends and effectively employ technology in project management depends on its diligence in all areas of project maturity. Digitally advanced organizations have been found to achieve business excellence only by moving to higher levels of the project maturity model.

A need, therefore, exists for a comprehensive view of project maturity within the context of organizational governance, prompting recognition of IT as an integral element thereof, interacting with other elements (Trocki, Juchniewicz, 2022; Trocki, 2023). This has been confirmed by the work of Albrecht and Spang (2016), who describe project maturity as a cluster integrating IT with process management, continuous improvement, knowledge transfer, and project management awareness. Likewise, Derenskaya's (2017) research showed that software-technical components, at par with methodological, organizational, and motivational components, constitute the basic elements of the project management and project maturity enhancement system. Ilin et al. (2016), in turn, note in their study that business architecture can only develop through alignment and joint improvement of maturity levels across all components within an organization. It follows that unless due diligence is devoted to simultaneous IT architecture development and full project maturity, while recognizing the

interdependencies between the two, there can be no sustainable business architecture. Correia and Agua (2023) also comprehensively address the issues of project maturity development in their monograph. The authors link it to the need for digital transformation, strategic planning and openness to innovation, providing theoretically established methods, practical insights and tools, in the form of a guide for organizations.

Given the relevance to the adopted research objective to grasp the differentiation in project maturity and technological sophistication within a single organization, the second stage of the theoretical study focused on case-study-based literature. To identify the relevant literature, the following set of keywords was used: ("project maturity" OR "project management maturity") AND ("IT" OR "technologies") AND ("case study"). On this basis, relevant WoS and Scopus literature items were listed. A total of 18 items were identified in the WoS database and 29 in the Scopus database. Comparative analysis of the two databases yielded 14 overlapping literature positions. Ultimately, 33 positions were qualified for further analysis, to determine the lines and results of research on the subject matter undertaken. After a detailed analysis, 5 positions were rejected, as they did not meet the research assumptions.

The 28 qualified positions include a group of works specifically addressing the IT industry. These publications encompass the following lines of research: the procedures, factors and good practices determining the achievement of project maturity in IT organizations (Silva et al., 2015; Yen et al., 2016; Sargent, Ferreira, 2018), project maturity model concepts adapted to the specifics of IT organizations (López et al., 2016; Sanchez et al., 2019), the impact of project maturity process adaptation on IT project management (Aydin, Dilan, 2017).

The second group of focused studies consisted of case studies of public sector institutions, most of which pared down to works on the concept of project maturity assessment, in the context of project type or the specifics of a given organization (Hamilton, 2004; Rwelamila, Phungula, 2009; Pasian et al., 2012; Breytenbach, 2013; Mullaly, 2014; Cassanelli, 2017).

There are also studies focused on Project Management Offices (PMOs) exclusively, which provide effective guidance for PMOs on raising the level of project maturity through appropriate knowledge management (Barclay, Osei-Bryson, 2010; Sokhanvar et al., 2014), based on the guidelines for establishing PMOs compliant with the OPM3 model (Carden, Brace, 2022).

The works identified also included studies extending beyond the perspective of project maturity assessment, seeking broader regularities, e.g.:

- examination of the relationship between investment in higher levels of project maturity and the return on that investment (Albrecht, Spang, 2014),
- formulation of a project maturity model suitable for application in the construction industry for project delay control (Motaleb, 2017),
- project maturity vs. the specifics of industrial sector projects (Dey, 2018),

- the impact of mining project management maturity on the performance of drilling sites (Yakoot, 2023),
- the advantages of using the IPMA Delta model and the IPMA Organizational Competence Baseline (OCB) to assess and improve project management maturity (Bushuyev, Verenysh, 2018).

Only a few studies deal with the assessment of project and technological maturity in a given studied organization. The research approaches undertaken therein can be characterized as follows:

- A Research and Development Center - the survey was conducted among sponsors and project managers only; areas for improvement were identified, albeit more so from the project perspective (project management process, organizational aspects, portfolio management, project performance management, project management tools), rather than through the lens of specific guidelines for company departments or project teams (Kaya, Iyigun, 2001).
- A large multinational organization - despite the thoroughness of the study, only averaged results were presented, indicating areas for improvement across individual attributes of the ProMMM model, rather than in a breakdown by department or area within the organization (Hillson, 2003).
- A public R&D institution - its project management weaknesses were identified using the Prado-PMMM model, with a focus on the project managers' competencies (das Neves et al., 2013).
- A mining company - the study aimed to compare the studied company's project maturity with other companies operating in the same sector (Nhlengethwa, van der Lingen, 2014).
- An IT company - a study of project managers' project maturity (Permana, 2017).
- Istanbul Technical University (ITU) ARI Techno Park companies implementing IT projects - the study investigated how the level of project management maturity varies depending on company characteristics (Bolat, 2017).

The theoretical study undertaken, thereby, revealed a deficiency of works presenting results of research on the level of project maturity, in conjunction with technological sophistication and the differentiation arising from the specifics of project teams or entire departments within an organization. The present study aims to fill this gap by providing results of a case study addressing the aforementioned research problem.

3. Research Design

The study used a project maturity model questionnaire and an in-depth interview concerning the information technologies employed in project management. These tools were designed to assess the level of project maturity and the level of technological sophistication in project management, including the relationship between the two, in the organization under study. With regard to examining the level of project maturity, the literature most often recommends two models as the most mature and conclusive, i.e., Harold Kerzner's Project Management Maturity Model (KPMMM) and Project Management Institute's OPM3 (Organizational Project Management Maturity Model). Considering the adopted research objectives, Harold Kerzner's maturity model proved to be most suitable (Kerzner, 2001, 2002). The model incorporates the impact of technology on project maturity (Woźniak, Sliż, 2023; Wojciechowska, 2023).

The level of IT sophistication in project management was assessed by adopting five levels of maturity (Table 1). Appropriate types of level-specific IT tools supporting project management are recommended for each level of project maturity.

Table 1.

IT maturity level in project maturity context

Level of technological maturity	Characteristics
Level 1	Partial technological solutions as needed. Occasional use of IT tools to handle financial and time-management aspects (MS Excel, MS Word, Power Point)
Level 2	IT tools used independently on a project-by-project basis. Tools for scheduling and progress/cost reporting, as well as tools supporting collaboration and teamwork (MS Project, GanttChart, Trello, Asana, BaseCamp)
Level 3	Tools enabling collaborative management of the entire project and the organization's project portfolio. Tools supporting standard-accordant resource management, project performance analysis, inter-project communication, unified reporting and project execution (MS Project, Wrike, Monday)
Level 4	Project management support systems are integrated with other IT systems (e.g., purchasing systems, production systems, information flow systems). They enable coordination of activities within a project portfolio as well as between/across systems (exchange of information on resources, costs, accounts and quality) (JIRA, Confluence, Slack, Time City, Team Gantt)
Level 5	A comprehensive system for project, program and project portfolio management in the organization. The overall project management, i.e., all areas and aspects, is supported systemically. All functions required in project management are integrated into a single database.

Source: own elaboration based on Weidemann (2017), Center for Information Technology (2020).

Furthermore, the study aimed to verify the uniformity of project maturity and project management IT sophistication across the organization. Accordingly, a case study method was adopted, involving a survey conducted in a breakdown by the company's main departments, with the aim of exploring the aspects under study and identifying the causal factors.

The object of the study was an SME operating in the service sector, classified under the IT industry Polish Classification of Business Activity (PKD) section J - Information and Communication; Computer Programming, Consultancy and Related Activities. The company

is engaged in the provision of IT solutions for the medical industry. Its main activities are primarily geared towards the following: software development, customer service support and product sales. This functional segmentation results in an organizational breakdown into the following main departments: development department, service department and sales department. The IT solutions offered are innovative and continuously improving. The company creates personalized solutions accommodating customer needs that are monitored on an ongoing basis.

The empirical study was conducted in 2023, based on the following research framework:

1. identification of cognitive gaps, research problem and study objectives;
2. selection of the research method - case study;
3. selection of research tools - project maturity model and in-depth interview;
4. selection of the departments within the organization to be studied;
5. analysis of the empirical material collected;
6. assessment of project maturity level, based on the KPMMM of selected departments within the organization;
7. assessment of the level of project management IT sophistication, based on in-depth interviews conducted at selected departments within the organization;
8. identification of differences in project maturity, across selected departments within the organization;
9. identification of differences in project management IT sophistication, across selected departments within the organization;
10. compilation of the results, discussion, identification of improvement areas contributing positively to project maturity in the entire organization, and application of appropriate IT tools in project management.

4. Results of the empirical case study

In keeping with the adopted research framework, subsequently to the analysis of the empirical material collected, an assessment of the level of project maturity in selected departments within the organization was carried out, based on the applied KPMMM.

Table 2 shows the development of project maturity levels in selected departments within the organization.

Table 2.*Level of project maturity in individual departments within the organization*

Level of project maturity	Organization department		
	development	service	sales
Level 1	1	1	1
Level 2	1	1	0
Level 3	1	1	0
Level 4	1	0	0
Level 5	0	0	0

1 – achievement of a given project maturity level, 0 – unmet objectives under a given project maturity level.

Source: own compilation based on a study carried out in 2023.

Furthermore, Figure 1 compiles the score totals attained by selected departments within the organization at each level of project maturity.

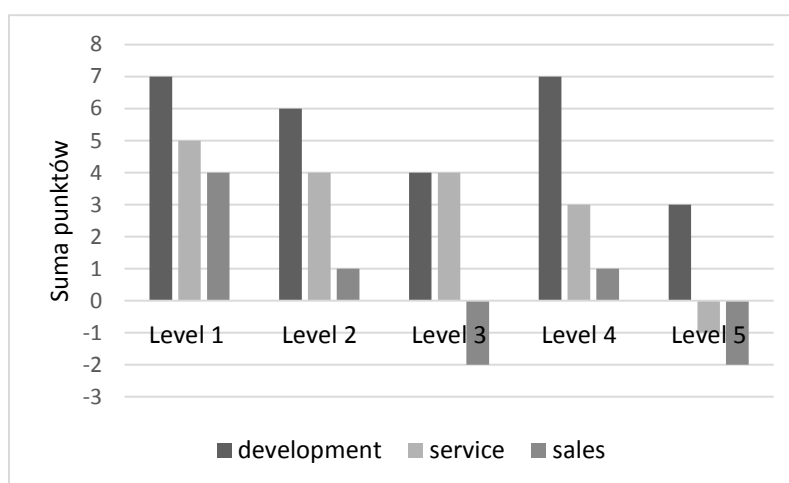


Figure 1. Score totals at each level of project maturity in selected departments within the organization.

Source: own compilation based on a study carried out in 2023.

Clear differences have been observed across the company's departments. The highest level of project maturity in the organization - level 4 - has been presented by the development department, followed by the service department, which has reached level 3, with the lowest project maturity – level 1 - attained by the sales department. The scoring reveals additional cross-departmental differences within the same levels of project maturity. Within level 1, again the development department ranks highest (7 points), followed by the service department (5 points), and the lowest ranked (4 points) sales department. Higher levels have been reached by the development and service departments only. A 2-point difference in level 2 has been noted between the two, which places the development department in the lead; whereas, at level 3, both departments have reached the same total score (4 points). It must be added here that, compared to level 3, the development department scored more points (7) in the very next level 4, and the service department was only 1 point away from reaching that level. The development department and service departments are therefore fairly close in maturity levels.

In the next step, analysis of the IT tools employed in project management at the departments surveyed, including the scope thereof, was carried out. This enabled identification of the IT maturity levels at those departments (Table 3).

Table 3.

Level of IT maturity at each department within the organization

Level of technological maturity	Organization department		
	development	service	sales
Level 1	1	1	1
Level 2	1	1	1
Level 3	1	1	0
Level 4	1	0	0
Level 5	0	0	0

1 – achievement of a given IT maturity level, 0 – unmet objectives under a given IT maturity level.

Source: own compilation based on a study carried out in 2023.

The level of IT maturity at the surveyed departments within the organization shows a pattern similar to that of project maturity. The highest level of IT maturity has been attained by the development department (level 4), followed directly by the service department (level 3), with the lowest level presented by the sales department (level 2). It is evident that the sales department utilizes tools ranked at a level higher than its project maturity. The barrier to the transition to a higher level of project maturity is not technology, but the implementation of appropriate project management processes and standards.

The detailed analysis of project maturity level areas, combined with the information obtained via the in-depth interviews conducted, provided insights into the significance of the cross-departmental differences within the company and the drivers underpinning these disparities.

The development department receives more project management support from senior management (e.g., participation in project team working meetings). It is also the projects implemented by this department, and the service department, within which the management is willing to modify the methods of operation, to reach maturity in project management, and more frequently acts as project sponsors. The sales department, in contrast, not only fails to receive support from senior management for its projects, but also lacks support from line (functional) managers.

What draws attention is the project management training system. Most engaged in project management training are the development-department and, in second place, the service-department employees. They also receive support from their line managers in this area. By the same token, the organization lacks cross-departmental line management training on the essence and objectives of project management. Neither has the organization implemented a structured project management training program to upskill employees in this area. The training in the development and service departments is purely a bottom-up initiative of the employees themselves, who have acquired knowledge in various areas of project management through external training and adopted internal training mainly for employee induction purposes.

Despite its high level of project maturity, the development department implements its risk management process by formal means in the area of technical risk only. In other project areas, informal methods of risk management are used. The service department employs informal risk management methods in all project areas; thus, no standardized processes or tools are in place.

Another weak spot is quality management. There is no quality assurance management in either the development or service department, only quality control.

The sales department, in contrast, presents slight knowledge and competence in almost all project-management-related areas and processes. This department also receives the least support from senior management and line managers, and no internal project management training initiatives have been identified therein.

5. Discussion

The level of project maturity in individual departments within the organization is consistent with their level of project management technological sophistication. The IT tools used by the company's most mature department are available to the entire organization. Nonetheless, the service and sales departments employ these tools at much lower rates than the development department, which represents the highest level of project maturity and technological sophistication. The interviews conducted, at the development department especially, revealed a substantial interaction between the level of project maturity and the application of IT in project management. In examining the likely reasons behind the cross-divisional differences within the organization, based on the information obtained from the interviews, disparities in the areas of training and senior management support have been observed.

It has been found that the mere availability of technology, without the adoption of a company-wide framework for its application in project management, will not increase the organization's level of project maturity. The support of senior management as well as the training system raising IT skills and building project knowledge and awareness are the two main groups of factors causing such a significant cross-departmental differentiation within the surveyed organization.

The organization owns, and employs in project management, tools of level-4 IT maturity. These tools, enabling coordination of activities not only within, but also across projects, in a portfolio, fall under the integrated systems category. The fact that only one department within the organization, ranked at level 4 of project maturity, employs these tools to support its activities indicates that the barrier to the other departments' transition to higher levels of project and IT maturity is not the lack of appropriate IT tools.

Through such a designed survey of cross-departmental project and IT maturity measurement, not only the areas in need of improvement have been revealed, but also the detailed scope of that improvement, in specific areas found to require, has been identified. Furthermore, in order to move the entire organization to a higher, uniform level of project and IT maturity, the need for systemic solutions, consistent across the organization and linking the two areas, should be taken into account. Particular emphasis should be placed on improving the organization's project management capability, in the context of a company-wide process.

The present article contributes to the current literature by presenting empirical evidence indicating that mere implementation of IT in an organization exerts marginal influence on project maturity. Of relevance here is the exposure of varying levels of project maturity within a single organization, and the correlation of that maturity with the use of IT in project management. The lack of adequate project management capabilities results in the absence of a significant impact of IT on project maturity.

Although an increase in organizations' IS/IT spending has been observed for years, many of these investments are not delivering the expected benefits. The return on this type of investment is considered to be a major organizational challenge. In their exploration of this topic, Gomes and Romao (2012) identified three strategies that provided the desired IS/IT investment returns (Gomes, Romao, 2012):

1. employee training in the use of IS/IT, which ensured greater work efficiency and responsiveness to the pressures of change;
2. provision of collaboration platforms engaging all relevant stakeholders in the business process;
3. establishment of a framework supporting management processes, in order to achieve the highest benefit efficiency.

A study, undertaken by Irfan et al. (2019), on Pakistani project organizations has revealed that the use of software as one of the dimensions of project maturity showed no significant impact on project success. The same result was obtained with regard to the areas of training and continuous improvement. They attribute this to the project team's resistance to change, reluctance to adopt technological innovations (project management software) and the ineffectiveness of project management training in Pakistani organizations.

Gomes and Romao (2015) indicate in their research that full realization of the benefits IS/IT products provide is contingent on the organization's capability in overseeing the organizational changes necessary for proper management of all the other factors underpinning effective IS/IT product use. These capabilities include training and operational support in effectuating the cultural changes needed in the organization.

In their study on the assessment of IT project management maturity, Bjelica et al. (2020), in turn, found no positive correlation between IT competencies and project/organizational competencies. The results instead revealed a weak positive correlation between IT competencies and performance management. Simultaneously, the authors found that the

initial levels of organizational maturity show low, compared to project and organizational competencies, maturity levels in IT competencies, which merely follow the upward trend observed at higher levels of project and organizational competencies (from level 3 upward). This might explain the negligible contribution of the organization's in-house IT to the project maturity of the sales department rated at level 1 of project maturity.

Given the context of the survey results, the significant differences between the sales department and the development and service departments confirm the relevance of and the need for training and senior management support.

At the other end of the spectrum, there is a study on the maturity model of high-tech project management (Yang, Wang, 2009). Projects of this type are, as a rule, carried out in organizations staffed with ICT trained personnel. The study has found that the factors constituent in technological innovation are of significance in the process of building project maturity. These constituents are in the top three of the six factors specified: entrepreneurial environment, product operational capability, technological innovation, market operational capability, financial security, and organizational management.

Another study (Jamaluddin et al., 2010) on the application of project management maturity models in Malaysian ICT industry likewise captures the relevance of technological factors to the progression of project maturity. According to the Project Management Institute (PMI), Malaysia has seen great progress in the development of project management skills. A company affiliated with the Malaysian government, Multimedia Development Corporation (MDeC), which was established to promote the ICT industry in Malaysia and support project managers in the advancement of project management skills, has taken a simultaneous role of assisting Multimedia Super Corridor (MSC) companies in increasing their software process improvement capabilities. These efforts, in light of the results achieved, demonstrate the vitality of integrating project maturity with technology skills, albeit in a systemic approach, involving appropriate organization-wide training programs or expert consultations.

6. Summary

The study undertaken has revealed the existence of significant variation in both project maturity and the level of IT in project management, within a single organization. This highlights the need for multi-directional and cross-departmental study of the issues addressed, in order to identify improvement areas contributing positively to an organization's overall project maturity and its adoption of appropriate project management IT technologies.

The need for the development of such an approach has been confirmed not only by empirical results, but also by theoretical research, which have highlighted cognitive gaps, consisting in the scarcity of publications describing the problem of the imperative to adequately typify

project maturity measurement sites within an organization, combine it with an assessment of the level of technological sophistication in project management, and only on this basis draw recommendations and build concepts for the organization's advancement towards higher levels of project maturity, supported by appropriate information technology.

The approach presented, as well as the results obtained, can serve as a starting point for much broader empirical investigations in this area. Further research work can, on the one hand, establish the patterns of intra-organizational variation in project maturity and technological sophistication, but also delineate the rules of conduct in investigating the issues in question.

This is especially true since research based on a number of project maturity models has demonstrated unequivocally that assessment of an organization's project maturity is often viewed from the perspective of the entire organization to the exclusion of the variation resulting from the specifics of project teams or entire departments within the organization, which is a weakness of these models (Nikolaenko, Sidorov, 2023). Most of the maturity models also fail to factor in the vitally relevant technological aspects which, as research has revealed, interact throughout the process of an organization's attainment of higher levels of project maturity.

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