VILNIUS UNIVERSITY
BUSINESS SCHOOL

INTERNATIONAL PROJECT MANAGEMENT PROGRAMME

Menghao Fang

THE FINAL MASTER'S THESIS

PROJEKTO KOMANDOS INOVATYVUMO VAIDMUO PROJEKTŲ ĮGYVENDINIMUI IR SĖKMEI PROJEKTŲ VADOVŲ POŽIŪRIU	*THE ROLE OF PROJECT TEAM INNOVATIVENESS FOR PROJECT IMPLEMENTATION AND SUCCESS FROM THE PERSPECTIVE OF PROJECT MANAGERS*

Student

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(signature)

Supervisor

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(signature)

Assoc. Prof. Dr. Dalia Bagdžiūnienė

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SUMMARY

VILNIUS UNIVERSITY BUSINESS SCHOOL

INTERNATIONAL PROJECT MANAGEMENT PROGRAMME

MENGHAO FANG

THE IMPACT OF PROJECT TEAM MEMBERS' INNOVATIVENESS
ON PROJECT IMPLEMENTATION AND SUCCESS
FROM THE PERSPECTIVE OF PROJECT MANAGERS

Supervisor – Assoc. prof., Dr. Dalia Bagdžiūnienė

Master's thesis (project) was prepared in Vilnius, in 2026

Scope of Master's thesis (project) – 90 pages.

Number of tables used in the FMTP - 13pcs.

Number of figures used in the FMTP - 3 pcs.

Number of bibliography and references - 32 pcs.

The FMT described in brief: This research focuses on the impact of project team members' innovativeness on project implementation and success from the project manager's perspective.

Research problem: Team members' innovativeness is vital for projects to overcome challenges and enhance competitiveness, it has become an essential factor for project success. While project managers struggle to stimulate team innovation through effective management. It hard to fully explain how innovation turns into project outcomes. Therefore, this study will examine the impact of team members' innovativeness on project implementation and project success from the perspective of project managers.

The goal of the thesis: This research aims to clarify the dimensions of project members' innovation from the perspective of project managers and analyze their impact paths on project success and implementation. Then, provide strategies for managing innovativeness and help enterprises develop their project management systems.

The objectives of the thesis:

1. To define and measure the dimensions of project team members' innovativeness from the perspective of project managers.

2. To analyze the impact of project team members' innovativeness on project implementation effectiveness and project success.

3. To investigate the effect of organizational factors, work environment and team collaboration on project team members' innovativeness.

4. To examine the effect of project managers' management behaviors on the team members' innovativeness.

5. To propose targeted strategies for project managers to foster innovation.

6. To provide effective recommendations for enterprises to optimize project management systems.

Research method used in FMT: This research employed theoretical analysis of literature on team members' innovativeness, project implementation, project success and transformational leadership, adopting semi-structured interviews with 10 project managers from diverse industries for qualitative analysis.

Research and results obtained: From project manager's perspective, this research clarifies that team members' innovativeness can be categorized into three aspects: "exploring new directions," "optimizing existing methods," and "innovation under resource constraints." Feasibility and practical value should be the core criteria to evaluate team members' innovativeness. Team members' innovativenesshas a dual impact on project implementation, it can play a positive role when adapted to project needs. Team members' innovativeness can lead to higher levels of project success by achieving basic standards and advanced

standards. Furthermore, organizational support, a safe and inclusive work environment, effective team collaboration, and the project manager's transformational leadership behavior can positively influence team members' innovativeness.

Conclusions of the FMT: This study based on project manager's perspective, finding that team members' innovativeness can positively impact project implementation and success when adapted to project requirements. Furthermore, based on these findings, it provides recommendations for project managers and enterprises on managing team members' innovativeness.

SANTRAUKA

VILNIAUS UNIVERSITETO VERSLO MOKYKLA

TARPTAUTINĖS PROJEKTŲ VADYBOS PROGRAMA

MENGHAO FANG

PROJEKTŲ KOMANDOS NARIŲ INOVATYVUMO POVEIKIS
PROJEKTŲ ĮGYVENDINIMUI IR SĖKMEI PROJEKTŲ VADOVŲ POŽIŪRIU

Baigiamojo darbo vadovas: Assoc. prof., Dr. Dalia Bagdžiūnienė

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Puslapių skaičius: 90 puslapių.

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Trumpas darbo apibūdinimas: Šiame tyrime daugiausia dėmesio skiriama projekto komandos narių inovatyvumo poveikiui projekto įgyvendinimui ir sėkmei iš projekto vadovo perspektyvos.

Darbo problema: Komandos narių inovatyvumas yra gyvybiškai svarbus projektams įveikti iššūkius ir didinti konkurencingumą, jis tapo esminiu projekto sėkmės veiksniu. Nors projektų vadovams sunku skatinti komandos inovacijas taikant efektyvų valdymą, sunku iki galo paaiškinti, kaip inovacijos virsta projekto rezultatais. Todėl šiame tyrime bus nagrinėjamas komandos narių inovatyvumo poveikis projekto įgyvendinimui ir projekto sėkmei iš projektų vadovų perspektyvos.

Disertacijos tikslas: Šio tyrimo tikslas – išsiaiškinti projekto narių inovatyvumo dimensijas iš projektų vadovų perspektyvos ir išanalizuoti jų poveikio kelius projekto sėkmei ir įgyvendinimui. Tada pateikti inovatyvumo valdymo strategijas ir padėti įmonėms kurti savo projektų valdymo sistemas.

Pagrindiniai uždaviniai:

1. Apibrėžti ir išmatuoti projekto komandos narių inovatyvumo dimensijas iš projektų vadovų perspektyvos.

2. Išanalizuoti projekto komandos narių inovatyvumo įtaką projekto įgyvendinimo efektyvumui ir projekto sėkmei.

3. Ištirti organizacinių veiksnių, darbo aplinkos ir komandos bendradarbiavimo įtaką projekto komandos narių inovatyvumui.

4. Išnagrinėti projektų vadovų vadovavimo elgsenos įtaką komandos narių inovatyvumui.

5. Pasiūlyti tikslines strategijas projektų vadovams, skatinančias inovacijas.

6. Pateikti veiksmingas rekomendacijas įmonėms, kaip optimizuoti projektų valdymo sistemas.

Darbe taikyti tyrimo metodai: Šiame tyrime buvo panaudota teorinė literatūros apie komandos narių inovatyvumą, projektų įgyvendinimą, projektų sėkmę ir transformacinę lyderystę analizė, kokybinei analizei naudojant pusiau struktūrizuotus interviu su 10 projektų vadovų iš įvairių pramonės šakų.

Atlikti tyrimai ir rezultatai: Projektų vadovų požiūriu, šis tyrimas paaiškina, kad komandos narių inovatyvumą galima suskirstyti į tris aspektus: „naujų krypčių tyrinėjimas", „esamų metodų optimizavimas" ir „inovacijos esant išteklių apribojimams". Pagrindiniai komandos narių inovatyvumo vertinimo kriterijai turėtų būti įgyvendinamumas ir praktinė vertė. Komandos narių inovatyvumas turi dvejopą poveikį projekto įgyvendinimui: jis gali atlikti teigiamą vaidmenį, kai yra pritaikomas prie projekto poreikių. Komandos narių inovatyvumas

gali lemti aukštesnį projekto sėkmės lygį, pasiekiant pagrindinius ir aukštesnius standartus. Be to, organizacinė parama, saugi ir įtrauki darbo aplinka, efektyvus komandos bendradarbiavimas ir projektų vadovo transformacinė lyderystės elgsena gali teigiamai paveikti komandos narių inovatyvumą.

Darbo išvados: Šis tyrimas pagrįstas projektų vadovų požiūriu ir nustato, kad komandos narių inovatyvumas, pritaikytas prie projekto reikalavimų, gali teigiamai paveikti projekto įgyvendinimą ir sėkmę. Be to, remiantis šiais rezultatais, pateikiamos rekomendacijos projektų vadovams ir įmonėms, kaip valdyti komandos narių inovatyvumą.

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INTRODUCTION

Currently, the global business environment is undergoing intensified market competition and digital transformation. Driven by these two factors, most industries are facing the need to change. For instance, agile projects in the IT industry require rapid update of technical solutions, infrastructure projects need to explore ecological construction technologies, and production projects in the manufacturing sector must design lean production models. Consequently, an increasing number of enterprises have recognized that project management has shifted from the execution of standardized processes to the creation of innovative value. The innovativeness of project members—defined as the behavior of proposing new ideas actively and coming up with new methods to solve project problems—has gradually become a key factor to build unique advantages and enhancing project competitiveness. According to the report Maximizing Project Success released by the Project Management Institute (PMI) in 2024, 82% of project managers leading high-performance projects regard that team members' innovative behavior is the core factor to break through project difficulties. In contrast, among projects that failed to meet expectations, 61% of project managers identified the lack of targeted innovation and the inability to address unexpected issues as the important causes of failure. This confirms that in the current project environment, the innovativeness of members is no longer a bonus but a necessity.

However, project managers are very likely to meet barriers in innovation management in practice. While some project managers recognize the importance of members' innovativeness, they still struggle to stimulate team innovation through effective management actions. For example, over control would decrease members' autonomy, leading to a low innovation motivation. However, the absence of targeted feedback could prevent innovative ideas from being implemented. On the other hand, most current project innovation practices focus on individual innovation capabilities. They ignore how innovative behaviors can be transformed into project success through different stages of project implementation. Moreover, the logical framework for innovation management from the perspective of project

managers—who act as guides and coordinators of innovation—has not been systematically sorted out. Under this background, exploring the impact of project members' innovativeness on project implementation and success from the perspective of project managers is urgent and necessary.

Relevance of the topic: Because of the intensifying competition in the global business landscape and the push for digital transformation, most industry projects are in need of transformation. Project management has moved toward innovative value creation. And team members' innovativeness has become a key factor for enterprises to build competitive edges. In practice, however, project managers frequently faced difficulties in innovation management. What's more, existing research mostly adopts the perspective of team members or organizations but ignores project managers' insights and understanding of how team members' innovativeness translates across different project phases. Thus, exploring how team members' innovativeness impacts projects from the project manager's viewpoint can offer active strategies to project managers and help enterprises refine their management systems to increase project success rates.

Research problem: Team members' innovativeness is vital for projects to overcome challenges and enhance competitiveness, it has become an essential factor for project success. While project managers struggle to stimulate team innovation through effective management. It is common that project teams overlook how innovative behaviors translate into success across all project implementation phases. Further, there is a lack of a systematic management logic framework which positions project managers as innovation guides and coordinators. These factors make it hard to fully explain the internal logic of how innovation turns into project outcomes. Therefore, this study will examine the impact of team members' innovativeness on project implementation and project success from the perspective of project managers.

The goal of the thesis: This research aims to clarify the dimensions of project members' innovation from the perspective of project managers and analyze their impact

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Use of artificial intelligence: This thesis followed the Vilnius University Business School AI regulations. AI was only used to generate ideas, no AI-generated content was used in the thesis.

1. LITERATURE REVIEW

This chapter serves as the theoretical foundation and literature review for the study. The main goal is to clarify key concepts, build a theoretical framework, review existing research, and identify research gaps related to the core topic: how project team members' innovativeness affects project implementation and success, from the project manager's perspective. First, this chapter will define the core concepts involved in the study which are innovativeness, project implementation, and project success. Then, specify their specific connotations and characteristics in the context of project management. This helps set a clear analytical scope for subsequent research. Second, this chapter will elaborate on the key theories that support the study. It will explain the core viewpoints of each theory and their connections to project innovation management, providing a theoretical basis for understanding the motivation mechanism of team members' innovativeness, the team transformation path of innovative behaviors, and the role of project managers' leadership behaviors. Finally, this chapter will systematically sort out existing literature. On one hand, it will focus on the theoretical basis, dimensional decomposition, and development of measurement tools for individual innovative behaviors. On the other hand, it will conduct an in-depth analysis of the limitations and controversies of current research in terms of perspective, methodology, and theoretical integration. This will highlight the academic value and entry point of this study, laying a solid literature and theoretical foundation for the subsequent formulation of research hypotheses, model construction, and empirical analysis.

1.1 Team member Innovativeness

Innovativeness within a project team refers to the ability of team members to generate and implement novel and useful solutions. By using these new ideas, project team can enhance project outcomes. At the individual level, Amabile (1983, 1997) defined it as the generation of novel and useful ideas or solutions to problems in an organizational context. He emphasized   not only the originality of innovativeness but also its practical value. This concept extends beyond traditional notions of creativity. It have highlighted not just the novelty of ideas but   their practicality and implementability in a more critical way. In the

specific context of project management, team member's innovativeness is defined as the capacity of project members to propose and effectively execute innovative solutions in response to unique problems, technical challenges or process bottlenecks encountered in the project. With their response, the efficiency of project implementation and the value of final outcomes can be improved directly or indirectly.

Based on this, Scott and Bruce (1994) further developed individual innovative behavior as a multi-stage behavioral chain, spanning from idea generation to outcome promotion. Their Individual Innovative Behavior Scale divides this process into six items from three stages. The first stage is Idea Generation. This includes seeking new technologies, processes, methods and product ideas while generating creative thoughts to improve work. The second stage is Idea Promotion. It requires communicating the value of the innovative ideas to colleagues and superiors and researching the necessary funding and resources for implementation. The third stage is Idea Implementation. In this stage, team should break down the innovative ideas into actionable steps. And continuously improve the effectiveness of the implementation plan to achieve the expected goals as well. This model laid the foundational framework for measuring team member's innovativeness. It has been repeatedly used in subsequent empirical studies and demonstrate strong cross-cultural and cross-industry applicability.

At the team level, team members' innovativeness is not a simple sum of individual behaviors. Anderson & West (1994) developed the Team Climate Inventory (TCI) and identified five core dimensions of an innovative team climate which are goal clarity, psychological safety, task orientation, innovation support, and social recognition. Their research shows that team innovation is a collective phenomenon rather than a sum of individual creativity. In practice, it can be shown as team members' common goals, a supportive working atmosphere and the resource support provided by the project team. West (2002) further expanded this concept. From his study,   there should be a balance between divergent and convergent thinking for effective team innovation. Specifically, divergent thinking serves to generate a range of diverse perspectives. In contrast, convergent thinking

focuses on refining these perspectives and integrating them into a coherent whole. This has clear implications for project teams. They must first be capable of generating creative ideas. Beyond that, they need to organize and optimize these ideas in a meaningful way.

From the perspective of organizational learning theory, March (1991) proposed the framework of exploration and exploitation, classifying innovativeness into two key forms. He argued that project teams must continuously explore new technologies while leveraging existing capabilities to achieve incremental improvements. In today's international business environment, innovativeness is often reflected in rapid prototyping and user-driven iteration. And some researches indicate that team member's innovativeness also can be operated through these two models. Exploratory innovation requires team member to push beyond existing knowledge boundaries to find new technical pathways, while exploitative innovation demands continuous optimization and incremental improvements based on current capabilities. In complex project environments, team member need to switch flexibly between these two models according to project phases and task requirements.

In the digital era, the connotation of team members' innovativeness has taken on new characteristics. Catto et al. (2021) noted that in a rapidly changing international business landscape, members of technical teams not only need technical expertise but also agile innovation capabilities. It means the team members should know how to learn from user feedback and continuously optimize products. Research by Omotoya et al. (2024) added a critical dimension to innovativeness in project contexts: cognition of resource constraints. They pointed out that projects have the features of temporary and unique. And the projects are usually undergoing with the limited resources as well. Therefore, the real effective project innovation must include a clear awareness of resource constraints. Otherwise, no matter what the innovative concepts are, all of them will be very likely to fail due to disconnection from reality, leading to a gap between innovative ideas and implementation capabilities.

A deep understanding of the construct of team members' innovativeness relies on the detailed decomposition of its dimensions and the development of effective measurement

tools. As this research mentioned, Scott and Bruce's (1994) model was a milestone in the field of measurement. However, with the advancement of research, scholars have identified limitations of this classic framework in complex project contexts, driving deeper exploration of innovativeness dimensions and the evolution of measurement tools.

In subsequent research, a key transformation arises. The perspective of research has moved from a single-dimensional stage to an ambidextrous one. And it is widely applied in studies of individual innovative behavior in the current studies. Exploratory innovation focuses on pursuing new possibilities and experimenting with untested methods. It typically requires a departure from established knowledge frameworks. This type of effort often culminates in radical or disruptive forms of innovation. In contrast, exploitative innovation emphasizes the refinement and extension of existing competencies and processes. It aims at continuous improvement and optimization of current knowledge. Such activities generally lead to incremental innovations that enhance efficiency and performance.

Alsaied and McLaughlin (2024) emphasize that studying innovative behavior in project environments requires attention to both exploratory and exploitative innovation. They argue that a balance between these two forms of innovation must be maintained throughout the different stages of a project's lifecycle. For example, exploratory innovation often assumes a more critical role during a project's initiation and planning phases. These phases are when novel solutions and new directions are typically outlined. In contrast, as a project moves into its execution and closure stages, exploitative innovation tends to grow in importance. During these later phases, the focus shifts. It will turn to solving practical problems and optimizing processes that are already in place.

The rise of this ambidextrous perspective has exposed limitations in traditional measurement tools. Studies by Raiesifar et al. (2025) in the healthcare sector and Bashir et al. (2024) in construction projects both note that while Scott and Bruce's scale were designed based on continuous improvement scenarios in manufacturing and fail to fully reflect the unique requirements of projects. For examples, their temporariness, uniqueness and tight

resource constraints. Their empirical research shows that the innovative behavior of project members must include a dimension of cognition of resource constraints. This dimension assesses the extent to which individuals account for real-world project constraints when developing and promoting innovative ideas. Key limitations such as time, budget and technology, must be proactively identified and integrated into the idea process. A team member who overlooks these factors risks should come up with solutions. While these solutions may be innovative in theory, they may be too costly or time-consuming to implement. Such proposals not only face practical failure but can also disrupt project progress and resource allocation.

Therefore, the development of future measurement tools will show a trend of situational adaptation. Scholars are calling for the development of innovative behavior scales tailored to different types of projects. For instance, in digital projects, innovativeness may need to measure members' ability to quickly learn and apply emerging technologies, as well as their capacity to collaborate with AI tools to solve problems.

In addition, the expansion of theoretical perspectives is enriching the connotation of innovativeness. The Innovation 5.0 framework proposed by Afzal et al. (2024) incorporates human-centricity into the definition of innovation. From this perspective, team members' innovativeness is reflected not only in technologies and processes but also in their deep insight into the diverse, implicit needs of project stakeholders and their demonstration of humanistic care. This explains why, in some complex socio-technical systems, innovations focused solely on optimizing technical performance may still lead to project failure—because they overlook human factors and social acceptance.

1.2 Project Implementation and Project Success

1.2.1 Project Implementation

Project implementation refers to the process of converting planned project activities into expected outcomes. According to the classic definition in the PMBOK Guide (PMI, 2021), project implementation is the process of coordinating human and other resources to achieve

project objectives. In essence, it is a value-creating process that transforms static project plans into dynamic project actions and ultimately delivers the expected deliverables.

In the six-stage project lifecycle proposed by Munns & Bjeirmi (1996), implementation is defined as the execution phase, whose core is converting plans into specific deliverables—involving resource coordination, task management and quality standard control. This process relies on the synergy of three core activities: resource coordination, task management, and quality standard control.

However, compared with regular, repetitive operational work, project implementation faces unique challenges. Turner and Müller (2003) noted that as a temporary organization, the project implementation process must effectively integrate technical processes and human factors. Technical processes relate to tools, methods and procedures, while human factors involve leadership, communication, team dynamics and conflict resolution. They emphasized that due to the uniqueness and one-time nature of projects, planning cannot cover all eventualities. And the uncertainty during implementation is far higher than in regular work. Thus, there is an urgent need for adaptive management approaches.

Meanwhile, Omotoya et al. (2024) specifically pointed out that innovative behavior during project implementation must include a dimension of cognition of resource constraints; otherwise, it is easy to create a gap between innovative ideas and implementation capabilities. These viewpoints foreshadowed the subsequent rise of adaptive project management approaches such as agile and iterative methods.

1.2.2 Project Success

For a long time, project success was simply equated with delivering outcomes within the predefined "iron triangle" constraints of time, cost, and scope. This standard was widely adopted due to its intuitiveness and ease of measurement. However, in practice, many projects delivered on time, within budget, and to scope were ultimately deemed failures by the market or clients—exposing the flaws of this single-dimensional standard.

In response, scholars proposed more comprehensive multi-dimensional evaluation frameworks. Among these, the four-dimensional success model proposed by Shenhar and Dvir (1996) was a milestone. They argued that judging whether a project is successful requires a holistic assessment across the following four dimensions:

Project efficiency. The traditional "iron triangle" standard, focusing on the short-term efficiency of the project execution process itself.

Client success. Focusing on the actual value of project outcomes to clients, including client satisfaction, addressing clients' pain points, and meeting or exceeding clients' expectations.

Business success. Focusing on the direct and indirect business benefits the project brings to the executing organization, such as increased market share, improved profit margins, and enhanced strategic position.

Future readiness. Focusing on whether the project helps the organization accumulate strategic assets for the future, such as new technical capabilities, core patents, brand reputation, or the development of key talent.

This framework has received extensive support from empirical research, and it has been found that the importance of each dimension varies dynamically according to project type and time. Building on this, subsequent studies have further enriched and refined the dimensions of project success—including stakeholder satisfaction, team learning and development, and sustainability and social value.

1.3 The Impact of Team Members' Innovativeness on Project Implementation and Project Success

The essence of project implementation is converting planned project activities into expected outcomes; its core task is to translate abstract project plans into concrete deliverables through resource coordination, task management, and quality control. This process serves as the physical foundation for project success—without effective project

implementation, even the most well-designed plans cannot achieve project success goals.

Project implementation builds a bridge from planning to outcomes through resource coordination, task management, and quality control. It also requires integrating technical processes and human factors to address the challenges posed by the temporariness and uniqueness of projects. Without effective implementation, project success becomes unattainable.

Furthermore, the quality of project implementation directly determines the extent to which the multi-dimensional goals of project success are achieved. According to the four-dimensional model:

Resource and task management during implementation affects the project efficiency.
Deliverable quality and alignment with requirements influence the client success.
Value conversion capabilities impact the business success.
Experience accumulation and capability development contribute to the future readiness.

In addition, the ability of project implementation to adapt dynamically and foster a safe environment for trial and error is critical to addressing environmental uncertainty and ensuring the adaptive achievement of success. And the implementation of innovation during this process serves as the bridge connecting these elements. The quality of the project implementation process directly determines the likelihood of project success—and within this "bridge," innovative behavior and knowledge sharing act as core transmission mechanisms.

Team members' innovativeness does not directly or automatically translate into project success. Instead, there is a complex transmission mechanism exists between them. Research by Pham et al. (2023) based on Vietnamese IT companies confirmed that team members' innovative behavior plays the role as a bridge between ethical leadership, innovation climate, and project success. This means that strong leadership and a positive

climate cannot directly drive project success. Project team must first stimulate team members' innovative behavior which ultimately contributes to project success.

The study also revealed the role of time pressure that proper time pressure can focus team attention and enhance the positive impact of innovative behavior. However, excessive pressure triggers anxiety, inhibits in-depth thinking, and thus weakens or even reverses the positive effects of innovative behavior. This finding provides crucial scientific basis for project managers to conduct resource planning and schedule management.

Theoretically, the role of innovative behavior in promoting project success is reflected in the following aspects:

Enhancing project implementation efficiency. During implementation, innovative solutions proposed by team members to address specific problems can directly optimize workflows, overcome technical bottlenecks, and reduce rework—thereby improving project efficiency in terms of the "iron triangle" dimensions.

Increasing the value of project outcomes. Through exploratory innovation, projects may produce products with greater market competitiveness and technical leadership, creating excess value in the client success and business success dimensions. Exploitative innovation, meanwhile, enables continuous improvements to enhance product user experience and robustness.

Facilitating organizational asset accumulation. Innovative practices and problem-solving during project implementation are key sources of an organization's tacit knowledge and process assets (e.g., templates, guidelines, lessons learned). Effective knowledge sharing converts individual innovation into collective wisdom, directly contributing to the future readiness dimension.

In summary, the transmission mechanism of project members' innovativeness on project implementation and success can be summarized as follows: Members generate innovative behavior under stimulation → these behaviors enhance the efficiency and

feasibility of project implementation by optimizing processes, integrating resources, and improving collaboration → during implementation, innovative behavior acts on the four dimensions of project success through both direct effects and the indirect effect of knowledge sharing. This process is moderated by factors such as time pressure and the boundaries of autonomous authorization.

The dynamic capability framework proposed by Pourrahimian et al. (2024) further supplements this mechanism. They argued that project teams need to develop dynamic management capabilities for innovation portfolios—adjusting the type and intensity of innovation dynamically according to implementation progress and success goals to ensure that innovation remains aligned with project needs. For example, exploratory innovation is emphasized during the project initiation phase, exploitative innovation during execution, and process innovation during closure. This dynamic adjustment creates a closed loop of "innovation → implementation → success" which aligns with the views of Raziq et al. (2025), who also emphasized the need for dynamic alignment between innovation management and project characteristics.

Thus, a successful project can be seen as the unity of an efficient implementation process and valuable final outcomes. And the element that closely connects these two is the continuous emergence and effective implementation of innovative behavior by the project team throughout the implementation process. Understanding this transmission mechanism deepens the grasp of the strategic role of team members' innovativeness in project management, laying a solid theoretical foundation for subsequent discussions on innovation management practices.

1.4 Factors Influencing Team Members' Innovativeness

1.4.1 The Role of the Organizational Factors, Work Environment and Team Collaboration

Team members' innovativeness does not emerge in a vacuum; it is the result of interactions between individual characteristics and the organizational context. At the

individual level, in addition to the skills and motivation covered by componential theory, other key factors include cognitive style, personality traits, innovative self-efficacy, and emotional intelligence—all of which have been proven to correlate significantly with innovative behavior. Team members with high emotional intelligence are better able to manage anxiety and frustration during the innovation process, influence others more effectively, and build alliances to advance the implementation of ideas.

The prototype of team process theory originated from McGrath's (1964) Input-Process-Output (IPO) model of teams, which was later refined by scholars such as Marks et al. (2001) and Kozlowski & Bell (2003) to form a systematic theoretical framework. This theory argues that a team is not a simple aggregation of individual capabilities; instead, it converts individual resources into collective team outcomes through dynamic processes such as collaboration, communication, and knowledge sharing—and the quality of these processes directly determines the effectiveness of team outputs.

According to Marks et al. (2001), team processes can be divided into two categories: task processes and interpersonal processes. Task processes refer to collaborative activities aimed at completing core team tasks, including goal alignment, role division, information integration, and problem-solving. In the context of project innovation, this manifests as project managers optimizing team processes—such as establishing weekly innovation sharing sessions or cross-role innovation groups—to address the isolation of individual innovation and ensure that members' innovative ideas are integrated into all phases of project implementation through task processes and supported by interpersonal processes.

Interpersonal processes, by contrast, refer to activities that maintain member relationships and foster a collaborative atmosphere, including trust-building, conflict management, and psychological support. In 1999, Edmondson (1999) proposed the concept of team psychological safety, noting that when a team's interpersonal processes include a safe environment for trial and error, individuals are more willing to proactively share innovative ideas, thereby enhancing overall team innovation efficiency. In line with this theory,

when project managers find that members' innovations struggle to materialize, they can adjust task processes or improve interpersonal processes to drive the transformation of innovation into practical project implementation outcomes, ultimately promoting project success.

The former studies about team climate reveal that employee innovation requires multiple perspectives. A deep understanding of employee innovation provides a solid foundation for subsequent exploration of innovation management, project implementation, and the mechanisms that influence success. In today's era, transforming employee innovation from potential to sustained, tangible outcomes has become crucial for project-based organizations to achieve competitive advantage.

1.4.2 The Impact of Transformational Leadership Behavior on Project Members' Innovativeness

Unlike traditional transactional leadership that emphasizes the exchange of rewards and penalties, transformational leadership is more effective in stimulating innovation within team members. Project managers can stimulate team members' intrinsic motivation and potential through visionary inspiration, intellectual stimulation, and personalized care, enabling them to spontaneously pursue higher-level goals. The core of the management factor in the innovation process lies in the project manager's transformational leadership behavior. In real-world work scenarios, providing heuristic feedback rather than directive feedback reflects the intellectual stimulation underlying transformational leadership theory. Personalized care corresponds to empowering members to make decisions based on their individual capabilities, ensuring autonomy in innovation.

The core of management factors in the innovation process lies in the transformational leadership behavior of project managers. For example, providing heuristic feedback (rather than directive feedback) reflects the intellectual stimulation dimension of transformational leadership, while individualized consideration corresponds to delegating autonomy by assigning different levels of innovative decision-making authority based on members' varying

capabilities.

While exploring how project members' innovativeness influences project implementation and success, a critical preliminary question is: how to effectively stimulate and guide this innovativeness? From the perspective of project managers, their leadership behavior is a key contextual factor that shapes team climate and influences members' motivation and behavior.

Transformational leadership theory transcends the exchange-based relationship of traditional transactional leadership (which relies on rewards and punishments). Instead, it argues that leaders, through their charisma, inspiration, and forward-thinking, help subordinates recognize the significance of their tasks, stimulate their higher-level needs, and build a work environment based on mutual trust and respect. This encourages subordinates to prioritize organizational interests over personal gains and achieve outcomes that exceed initial expectations.

This leadership style is particularly well-suited to the project context—characterized by temporariness, uniqueness, and high uncertainty. Project tasks are often challenging, requiring members to demonstrate high initiative and creativity; project teams are quickly formed with members from diverse backgrounds, demanding strong leadership to shape shared goals and collaborative norms; and the dynamic, changing project environment requires teams to have robust adaptability and problem-solving capabilities.

As emphasized in research by Helmy et al. (2023), if project managers only act as transactional leaders—focused on task assignment and progress monitoring—they will struggle to fully unlock the team's innovative potential. In contrast, a transformational project manager can create a safe, supportive, and challenging innovation environment for members through the four dimensions of transformational leadership, thereby promoting the development of project members' innovativeness.

The impact of transformational leadership on project members' innovativeness is not achieved through one-way directives, but through a set of complex psychological and social mechanisms that act at both the individual and team levels, ultimately fostering the emergence and sustainability of innovative behavior.

At the Individual Level, according to Amabile's (1983) componential theory of creativity, intrinsic task motivation is the core, most influential driver of individual innovative behavior. Multiple dimensions of transformational leadership play a role by nurturing and enhancing this intrinsic motivation.

Inspirational Motivation and Intrinsic Motivation. By articulating an inspiring project vision—for example, "We are not just building a bridge; we are connecting the future of two regions"—project managers can transform mundane tasks into meaningful undertakings. This process of infusing meaning into the project significantly enhances members' sense of identification with the intrinsic value of their work, shifting their mindset from "the team needs me to innovate" to "I need to innovate for the team." This dramatically strengthens their intrinsic drive to overcome difficulties and explore the unknown.

Individualized Consideration and Intrinsic Motivation. When project managers demonstrate individualized consideration, they take the time to understand each member's interests, expertise, and career development needs—and strive to align project tasks with these individual needs. For instance, assigning a member with a keen sense of user experience to a task involving interface design optimization. Research by Karimi et al. (2023) also confirmed this: matching team members' traits with job characteristics allows members to work in areas where they can leverage their strengths and align with their interests, fostering a greater sense of competence and autonomy—key sources of intrinsic motivation.

At the Team Level, transformational leadership shapes positive team processes and climates, providing the "social capital" and psychological safety essential for innovative behavior.

Idealized Influence and Psychological Safety. The trust and prestige established by project managers—through demonstrating professional competence, fairness, and willingness to take responsibility—serve as the cornerstone of team psychological safety. Research by Ali et al. (2021) found that when subordinates trust their leaders, they are more willing to propose immature but novel ideas or admit failures—despite the associated interpersonal risks. In teams led by trusted managers, an atmosphere of "innovation without blame" is more likely to emerge, encouraging members to take the risks necessary for exploratory innovation.

Intellectual Stimulation and Innovation Norms. The intellectual stimulation behavior of project managers itself sends a powerful signal: it clearly communicates that innovation is encouraged as a team norm. By regularly asking questions in meetings—such as "Can we solve this problem in another way?" or "What aspects of our current processes can we challenge?"—project managers institutionalize critical and creative thinking as part of the team's work habits. This directly cultivates members' process skills related to creativity, guiding them to continuously seek opportunities for improvement and breakthroughs.

Provision of Innovative Resources and Autonomous Space. The generation and implementation of innovative ideas require necessary resources and room for action. Through authorization and support, transformational leaders can remove barriers to innovation for members.

Individualized Consideration and Differentiated Authorization. This is the most actionable manifestation of transformational leadership theory in project management practice. An excellent transformational project manager can implement bounded autonomous authorization based on an accurate assessment of members' capabilities: for experienced, high-performing members, greater authority over innovative decision-making and resource allocation is granted; for less experienced members, more guidance and support are provided, along with small-scale innovative tasks that have clear boundaries and moderate

challenges. As noted in research by Kalluri (2024), this refined authorization strategy avoids the suppression caused by insufficient autonomy and prevents chaos and coordination failures from excessive autonomy—ensuring that innovative vitality operates efficiently within controllable parameters.

Intellectual Stimulation and Resource Linking. When members propose innovative concepts, transformational project managers provide not just verbal encouragement, but substantive heuristic feedback and resource support. As argued by Han et al. (2025), transformational leaders do not issue direct orders; instead, they guide members to refine their proposals through questioning and proactively help them connect with internal and external experts, technologies, or information resources—acting as sponsors for the innovation process.

In summary, from the project manager's perspective, transformational leadership behavior is not an abstract philosophy but a powerful set of management tools that systematically stimulate and guide the innovativeness of project members. Through three core mechanisms—stimulating intrinsic motivation, shaping a safe climate, and providing enabling support—it profoundly influences the entire process of members' innovative behavior, from generation to implementation. A project manager with transformational leadership capabilities can convert leadership influence into team innovativeness, injecting a steady stream of initial momentum into the subsequent transmission chain of "member innovativeness → project implementation → project success." Therefore, when discussing project members' innovativeness, the critical role of project managers cannot be overlooked—and this is precisely the value of this study's focus on the project manager's perspective.

1.5 Limitations of Existing Research

Although significant progress has been made in project innovation research, there are still three key gaps in the theoretical system. First, in terms of research perspective, existing literature over-relies on team member self-assessment or organizational-level analysis,

ignoring the key mediating role of project managers. Brockmann et al. (2016) pointed out that most studies do not clearly define the observer of innovative behaviors, leading to deviations in the understanding of the innovation implementation process. This flaw makes it difficult for research conclusions to directly guide the daily innovation management practices of project managers. Second, there are some limitations at the methodological level. Current research mostly adopts a cross-sectional research design and lacks longitudinal tracking data. Although the study by Pham et al. (2023) controlled some confounding variables, it still cannot capture the dynamic changes of innovative behaviors in the project life cycle. At the same time, the scenario adaptability of measurement tools is insufficient. Although the Scott and Bruce (1994) scale is widely used, its item design does not fully consider the phased characteristics of projects. For example, there are essential differences between scheme innovation in the initiation phase and problem-solving innovation in the execution phase. Third, existing research has obvious fragmentation problems. A systematic review by Alsaied and McLaughlin (2024) found that most empirical studies only focus on a single type of innovation and ignore the dynamic transformation needs between exploratory and exploitative innovation. An article by Khan et al. (2024) also pointed out that research on the connection between innovation and project success mostly focuses on a single view, lacking an integrated analysis of the interaction of factors at the multi-level about individual-team-organizational. This fragmentation makes it difficult for theoretical models to guide innovation management practices in the complex project environment. The lack of theoretical integration also restricts the development of research. A systematic review by Catto (2021) pointed out that project management and innovation research involve multiple disciplines but lack a unified theoretical framework. Especially in the context of open innovation, the research on the integration of project management and open innovation principles is seriously insufficient. This is in sharp contrast to the current practical need for projects to increasingly rely on external knowledge. These limitations all point to a core problem—existing theories are difficult to explain how project managers can effectively guide the transformation of innovative behaviors into project success. Traditional research has failed to fully answer the fundamental contradiction of how to balance management stability and innovation flexibility in a rapidly changing environment. This theoretical gap provides a

clear academic value for this study, which focuses on innovation management from the perspective of project managers. Therefore, future research should focus on three directions. First, develop innovation behavior measurement tools adapted to different project types, with special attention to the particularities of large-scale projects and digital projects. Second, build an integrated theoretical framework to connect the transmission chain between individual innovative behaviors and the organizational innovation ecosystem. Third, explore new paradigms of innovation management in the digital context to respond to the challenges brought by new technologies such as AI to project innovation. As emphasized by Alsaied and McLaughlin (2024), only by realizing the dynamic adaptation between theoretical construction and project practice can research on innovative behaviors truly provide effective guidance for improving project success rates.

1.6 Summary

Through a systematic review of core concepts, theoretical foundations, and existing literature, this chapter has drawn conclusions that provide important support and direction for subsequent research.

First, it has clarified the connotations of the core concepts and their particularities in the project context. In terms of innovativeness, its connotation covers the generation and implementation of novel and useful solutions at the individual level, the collective phenomenon shaped by goals and collaboration at the team level, and the balance between exploration and exploitation at the organizational level. In the project context, it is necessary to emphasize the awareness of resource constraints and the characteristics of agile iteration. Project implementation is defined as the process of transforming plans into outcomes, highlighting the need to integrate technical processes and human factors in temporary organizations. Project success has evolved from the triple constraints to multi-dimensional evaluation including project efficiency, customer impact, business success, and future readiness. Moreover, innovative behaviors can positively affect success outcomes by improving the quality of knowledge sharing.

Second, it has established the supporting logic of the theories for the study. The Componential Theory of Creativity points out that intrinsic motivation is the core driver of innovation, providing a theoretical basis for project managers to stimulate members' innovation by granting autonomy and providing feedback. The Team Process Theory emphasizes the key role of task processes and interpersonal processes in transforming individual innovation into team outcomes, explaining the team collaboration mechanism for the implementation of innovation. The Transformational Leadership Theory connects the behaviors of project managers with innovation guidance, clarifying the value of management factors.

Third, it has sorted out the research progress and core limitations of existing literature. In terms of research progress, the research on individual innovative behaviors has shifted from a single-dimensional perspective to the dual perspective. The transmission mechanism of innovation to project success has confirmed the role of innovative behaviors and the influencing role of the factors such as time pressure and autonomous authorization. In terms of research limitations, current research has some core problems like perspective bias, methodological flaws and theoretical fragmentation. These make it difficult to explain the key issue of how project managers guide the transformation of innovation into project success.

In summary, through the literature review, the study has currently clarified the concept boundaries, theoretical basis, and existing gaps of the study. It not only provides a foundation for the subsequent construction of the chain mechanism model of team members' innovativeness—project implementation—project success but also highlights the necessity of this study to start from the perspective of project managers and integrate multi-level factors.

2. RESEARCH METHODOLOGY

The core objective of this study is to explore the impact of project team members' innovativeness on project implementation and project success from the perspective of project managers and clarify the transmission paths between variables. It aims to clarify the interaction pathways among key factors, analyze the intermediary roles played by organizational factors, the work environment and teamwork, then examine how project managers' management behaviors affect this process. To achieve this goal, this chapter describes the research design, including the research model, research methods, interview structure, research sample, research process and data analysis methods. This chapter is based on the theoretical framework constructed in the literature review, ensuring that the empirical research is closely connected with theoretical logic and can effectively respond to the research problem and objectives.

2.1 Research Model

Based on a literature review, this study focuses on the innovativeness of project team members as perceived by project managers, focusing on the practical impact of this innovativeness on project implementation and success. It also examines the role of organizational factors, the work environment, and team collaboration as bridges in this process, as well as the influence of project managers' management behaviors (focusing on transformational leadership) on the overall process. This framework integrates key elements at the individual (project members), team (collaborative interactions), and organizational (supportive conditions) levels, always framing them from the unique perspective of the project manager to clarify the logical connections between these elements.

The research model framework is shown in Figure 2, and the specific explanation Table 1 is as follows.
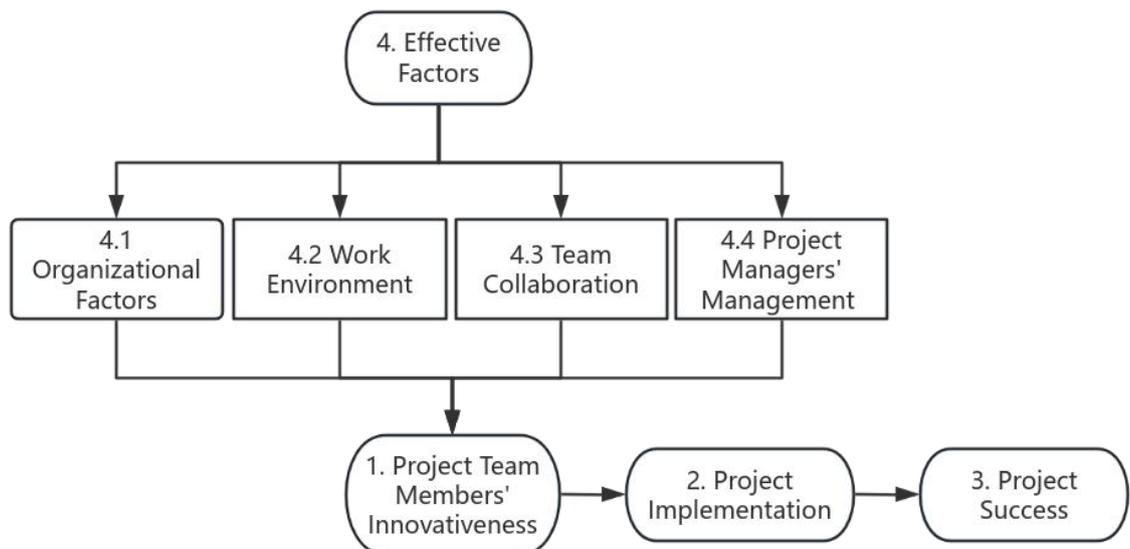
Figure 1 Research Model

Research Concepts	Connotation from the Perspective of Project Managers
Project Team Members' Innovativeness	The ability of team members to propose and implement novel and useful solutions during project execution. 1. **Explore new directions.** Propose new technologies or processes that go beyond existing knowledge. 2. **Optimize existing methods.** Improve established processes or technologies to enhance work efficiency 3. **Resource constraints.** Consider practical limitations such as time, budget, and technical capabilities when proposing innovative ideas.
Organizational Factors Work Environment Team Collaboration	1. **Organizational Factors.** Support provided by the organization for project innovation, such as whether sufficient resources are invested, whether there are innovation incentive mechanisms, and whether processes are flexible. 2. **Work Environment.** Whether there is psychological safety within the team and whether there is tolerance for innovation failures.

	3. **Team Collaboration.** Whether team members can share innovative ideas, coordinate to integrate innovation into tasks, and resolve disputes arising from innovation.
Project Managers' Management	1. **Visionary Motivation.** Communicate innovation-oriented project goals to the team. 2. **Intellectual Stimulation.** Provide guiding feedback to the team rather than direct instructions. 3. **Individualized Support.** Delegate appropriate innovative decision-making authority based on members' capabilities.
The Impact of Team Members' Innovativeness on Project Implementation	1. The most crucial impact of team members' innovativeness is to directly improve project implementation efficiency by proposing and implementing novel and practical solutions. 2. Innovativeness can show different values while project implementation is progressing.
The Impact of Team Members' Innovativeness on Project Success	1. Innovativeness can help project optimize efficiency in terms of time, cost and scope. 2. Innovativeness can create differentiated results and improved product experience, both can make project results meet customer needs better and increase satisfaction. 3. Innovativeness can enhance the market competitiveness of project outcomes and bring effective benefits to the project team, such as increased profit.

Table 1 Explanation about Research Model

The core logic of this framework is that project managers first observe team members' innovativeness. Under the influence of the project managers' own management behaviors, this innovativeness affects project implementation effectiveness and project success directly or indirectly through the intermediate role of organizational support, work environment, and team collaboration. For example, when a project manager stimulates the team's thinking by

asking, "*Can we optimize this process in another way?*" members are more likely to propose innovation for exploring new directions. If the organization provides dedicated resource support for innovation at this time, such innovations can quickly optimize the project execution process, thereby improving project efficiency and client satisfaction.

The research model is set according to the research objectives and the model is used to accomplish the purpose as well.

The objectives of research section.

1. To define and measure the dimensions of project members' innovativeness from the perspective of project managers.

2. To analyze the impact of project members' innovativeness on project implementation effectiveness and project success.

3. To investigate the effect of organizational factors, work environment and team collaboration on project team members' innovativeness.

4. To examine the effect of project managers' management behaviors on the team members' innovativeness

2.2 Research Method

This study used semi-structured interviews to collect data. This was chosen primarily because the research topic and objectives required in-depth capture of the details of real-world situations. Using quantitative methods would have significant limitations. First, it would be difficult to design a questionnaire that covers all project scenarios. Second, questionnaire data would be difficult to explain certain phenomena, such as why a particular project manager's management style leads to more effective innovation.

The innovativeness of project team members varies significantly across different scenarios. For example, the forms of innovation in agile projects in information technology and infrastructure projects in construction are completely different. Textual interviews can capture these differences, while quantitative methods like questionnaires can easily simplify

innovation into fixed metrics, losing the rich information in real-world scenarios.

Furthermore, this research focuses on project managers' authentic feelings and empirical judgments. For example, when judging the effectiveness of an innovation, project managers often draw on their own experiences rather than abstract data. Semi-structured interviews allow project managers to describe these experiences in detail, helping us understand how they perceive and interpret innovative behavior.

Semi-structured interviews use a designed list of core questions to ensure all research objectives are covered. Furthermore, the interviewer can follow up with follow-up questions based on the project manager's responses. For example, if the project manager identifies risks associated with exploratory innovation during the implementation phase, the interviewer can ask the interviewee to provide a specific example, explaining how the risk arose and how it was addressed. This approach can avoid the chaotic nature of unstructured interviews nor the rigidity of structured interviews.

2.3 Research Sample

After designing the interview structure, suitable research samples need to be selected for interviews. To ensure the validity of the research conclusions, certain criteria need to be established for the selection of respondents. The selection criteria should be centered around the research objective of project team members' innovativeness from the perspective of project manager. Before being selected as interviewees, volunteers must meet two conditions. First, they must be current or former project managers with experience in independently leading the entire project management life cycle, and be able to explain the relationship between project team members' innovativeness and project implementation and success. Non-management person who only participated in some aspects of the project can not be selected. Then, to ensure that interviewees have sufficient experience and practical project cases, they must have at least five years of project management experience. It means they should have a mature understanding of the generation, implementation, impact and management challenges of team members' innovativeness, and possess relevant practical

experience in innovation. In this case, respondents are able to explain the actual impact of innovation on project implementation efficiency, cost, quality, customer satisfaction and other dimensions in projects. To improve the universality of the research data, there is no limit about the industry in which the respondents work. Project managers from both traditional and emerging industries can be both selected as respondents to ensure the research samples include managers from different scales and types of projects. This also reflects the different characteristics of project team members' innovativeness in different project types. Sampling is based on voluntary participation. All respondents will participate in the interviews anonymously. They will be identified by codes to ensure the authenticity of their responses.

After selecting respondents according to the criteria, ten qualified project managers have been chosen to be interviewed. Demographics of the respondents is shown in Table 2.

Respondent Code	Industry	Years of Experience	Project Types
PM1	Construction	11	Large-scale engineering projects
PM2	Elderly Care	5	Elderly care facility renovation
PM3	Vehicle After-sales	8	Automobile/motor technical support
PM4	Construction	7	Infrastructure & industrial park projects
PM5	Special Equipment	12	Elevator installation & maintenance
PM6	Construction	14	Old building renovation
PM7	IT	9	Software development

PM8	Advertising	6	Online advertising & digital marketing
PM9	Tourism	5	Rural tourism development
PM10	Logistics	10	Warehouse management

Table 2 Demographics of the Respondents

The selected interviewees come from diverse industries and worked on various projects. They have an average of 8.8 years of project experience and each manager possessed abundant work experience and a mature understanding of projects. Some of them are senior managers with over ten years of experience. The collected data provided strong support for achieving the research objectives.

2.4 Interview Structure

The interview content is designed based on the research framework, divided into 6 thematic modules. Each module corresponds to a research focus, ensuring that the collected information covers all aspects of the research framework. Interviews follow a logical sequence from specific cases to abstract principles, guiding project managers to first share practical experiences and then explain their thoughts in the theoretical way.

The interview outline includes 6 thematic modules and 18 core questions. The detailed content is shown in Table 3.

1. Project Managers' Understanding of Team Members' Innovativeness	1.1 Based on your project management experience, how would you explain three typical aspects of team members' innovativeness: (1) Exploring new directions (2) Optimizing existing methods (3) Innovating under resource constraints. 1.2 Do you think the difference among these three aspects of team

members' innovativeness is obvious? If yes, please explain the difference with examples.

1.3 When evaluating a team member's innovativeness, what aspects do you focus on most? Why is this important to you? Please give an example.

2.1 During project implementation, how do team members' innovativeness specifically impact project implementation? Please share some positive or negative examples.

2.2 After a team member puts forward an innovative idea, what difficulties do you most often face when trying to turn that idea into physical actions?

2. The Impact of Team Members' Innovativeness on Project Implementation	2.3 How do you judge whether an innovative behavior has really improved project implementation? What specific indicators do you refer to?
	2.4 2.4 Do you think different aspects of team members' innovativeness has a different impact on project implementation? Which type has a more obvious positive effect on project implementation in your experience?

3.1 What do you think are the key criteria for measuring project success?

3. The Impact of Team Members' Innovativeness on Project Success	3.2 In what specific ways does team members' innovativeness help the project succeed? Please combine a specific project case to explain how innovativeness helps the project meet the criteria you mentioned.
	3.3 Have you ever had an experience where a project didn't meet expectations or even failed? Was the unsatisfactory outcome related to the lack of innovativeness from team members?
	3.4 Do different innovativeness contribute differently to various dimensions of project success?

4. The Role of Organizational Support, Work Environment, and Team Collaboration	4.1 The Impact of Organizational Factors
	4.1.1 Does your organization provide support for project team members' innovativeness? Can this support effectively encourage team members to show innovativeness? Please give an example.
	4.1.2 If the organization doesn't provide enough support, how will it affect team members' innovativeness?
	4.2 The Impact of Work Environment
	4.2.1 Does the psychological safety within the team affect members' enthusiasm for innovativeness? Please share a relevant experience.
	4.2.2 How tolerant is the team of innovation failures? Does this tolerance affect members' willingness to put forward innovativeness?
	4.3 The Impact of Team Collaboration
	4.3.1 Can knowledge sharing and communication among team members help integrate individual innovativeness into motivation for project? Please give an example.
	4.3.2 When innovative ideas cause disagreements within the team, can the collaboration mechanism effectively resolve them? How does this affect innovativeness?
5. The Role of Project Managers' Transformational Leadership Management Behaviors	5.1 As a project manager, how do you use transformational leadership behavior to encourage team members to innovate? Please illustrate with some examples.
	5.2 When a team member's innovative idea conflicts with the original project plan, how do you use transformational leadership behavior to handle it? Will this handling method affect the team's enthusiasm for innovativeness later?
	5.3 What kind of feedback do you usually provide to team members? How does this feedback help improve their innovativeness?
	5.4 Do you give different innovation decision-making powers to members based on their ability? How do you grasp the boundary of

	authority delegation?
6. Difficulties and Recommendations in Managing Team Members' Innovativeness	6.1 What has been the biggest challenge you've faced in managing team innovativeness? What is the core reason for this challenge? And how did you solve the challenge?
	6.2 What suggestions do you have for other project managers who want to improve their team members' innovativeness?

Table 3 Interview Structure

Of course, interviews also require adherence to certain guidelines. First, ensure all questions are open-ended, without dictating specific responses to project managers. Instead, allow them to answer based on their own practical experience. Second, most questions require project managers to provide examples, which allows for more authentic and insightful responses. For example, when asking how innovation contributes to project success, have them share specific examples rather than generalities. This helps better understand the actual situation. Moreover, the interview process should proceed in a step-by-step manner. Start by discussing how to understand innovation, then discuss its impact on implementation and success, and finally discuss how to manage innovation. This aligns with project managers' thinking habits. Start with familiar practical experiences, then gradually delve into the underlying principles. This will ensure a smoother interview process.

2.5 Research Process

The core task of the research preparation phase is to build the foundation for the interviews and ensure the relevance and effectiveness of data collection. First, based on the research model and core dimensions constructed from the literature review, a semi-structured interview outline was designed, covering 6 major thematic modules and 18 core questions. Second, according to the research sample selection criteria, 10 qualified interviewees were selected. The research purpose, principles and interview questions were explained to the interviewees. Finally, the necessary equipment for the interviews was prepared, and the interview outline was tested and adjusted to ensure that the questions were clearly stated.

The interviews were conducted strictly according to the intended plan, proceeding in stages and following a logical sequence of "opening - main body - closing" to balance structure and flexibility. The opening clarified the interview purpose and the commitment to anonymity. Make brief small talk to relief interviewees' tension and establish trust. This part was not recorded since it was not relevant to the research. The main body focused on six main modules, guiding interviewees to state their ideas and Illustrate with cases. When the respondents raised important opinions or expressed vaguely, follow-up questions were used to obtain deeper information, ensuring no core research points were overlooked. The closing part was to appreciate the interviewees for their participation and replenish information added by the interviewees. All interviews were recorded and nonverbal information such as tone of voice and facial expressions were also noted to provide supplementary references for subsequent analysis.

Interviews were conducted from November 17th to November 22nd, 2025. This study employed a qualitative research methodology, conducting in-depth interviews with ten project managers. The entire research process followed the research objectives and model. Since all respondents were from China, all interviews were conducted in Chinese to ensure they could express their views clearly and freely. Before the formal interviews start, all respondents were informed of the following principles:

1. All interviewees will be interviewed anonymously.

2. The interviews only collected personal information relevant to the research topic, such as industry and length of work experience.

3. The entire interview process will be recorded and the collected data will only be used for this study. These records will be deleted after the study is completed.

Data transcription was completed within 24 hours of each interview to ensure the completeness and accuracy of the information. Audio files were transcribed into text, preserving the interviewees' original statements. The real names of respondents were replaced according to their interviewee codes (PM1-PM10), and private information that

could reveal their identity was removed. The transcribed text data was categorized and archived according to the respondent code to facilitate subsequent data analysis. After transcription, the text was checked again to correct errors and ensure consistency between the text and the interview content.

The data analysis phase begins with cleaning the transcribed text, removing redundant information irrelevant to the research topic, and initially classifying the relevant information according to the six dimensions in the interview outline. The classified text is then analyzed to extract and categorize key concepts, then formed sub-themes. Following the research model, these sub-themes are integrated into core themes. By exploring the logical relationships between core themes, the correlations between variables in the research model are verified and refined, ultimately forming a theoretical explanatory framework consistent with the data.

The conclusion phase, combining data analysis results with the theoretical foundation of the literature review, extracts research findings. First, it clarifies the dimensions of team members' innovativeness and their impact on project implementation and success. Second, it summarizes effective strategies for project managers to stimulate team innovation, providing suggestions for optimizing enterprise project management systems. Finally, it reflects on the limitations of the research process, providing direction for future research.

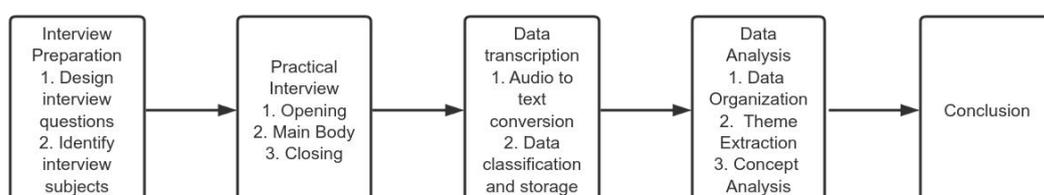The model of the research process can be shown in the following Figure 2.

Figure 2 Research Process

3. RESEARCH RESULTS

3.1 Project Managers' Understanding of Team Members' Innovativeness

Through interviews with 10 project managers from different industries, it was found that despite differences in industry and project type, project managers reached a consensus on the dimensions, core differences and evaluation criteria of team members' innovativeness. And all the respondents provided specific examples based on their project practice.

All respondents agreed that innovativeness can be divided into three core dimensions: "exploring new directions", "optimizing existing methods" and "innovation under resource constraints". Although the practical performances of these dimensions in different industries are not the same, but the respondents can reach a consensus on their understanding of these dimensions.

Innovativeness in exploring new directions is defined as "pioneering attempts to break through the boundaries of existing knowledge". This type of innovativeness refers to stepping outside the established framework and introducing new technologies, processes and ideas that have not been applied by the team before. PM1, a project manager in the construction industry, mentioned that the team proposed using a new type of polymer to replace traditional concrete in some building structures, completely exceeding the existing technological reserves. PM7, from the IT industry, shared that members proposed using interactive 3D modeling to replace traditional charts to display data, requiring the team to learn the relevant technologies they have never tried before. This innovativeness can be defined as "from 0 to 1". Generally, exploring new directions has the characteristics of high risk and high potential but its success can bring breakthrough advantages to the project.

Optimizing existing methods is described as "refined improvement of mature processes". This means that teams need to improve work efficiency and quality by adjusting current working process or updating tools without changing the core strategy. If the existing method is regard as "1", then optimizing the existing solution is "turning 1 into 1.5".   PM5

pointed out that his team compiled wiring diagrams for common elevator types into templates, optimizing only the different parts, which can significantly improve work efficiency and reduce errors. PM10 in the logistics industry mentioned that adjusting the position of the code scanners on the sorting line increased the sorting of nearly 200 more items per day. This type of innovativeness has low risk and is quick to implement, most project managers said they are more willing to accept this kind of innovation ideas.

Innovating under resource constraints is defined as "exploring the optimal solution under realistic limitations". Its core is to solve problems by adapting, reusing or modifying existing resources under constraints. PM2 in the elderly care industry mentioned that his project required the purchase of a batch of advanced nursing beds specifically designed for elderly people with limited mobility. However, the project faced budget constraints at the time. Later, a team member suggested using an adjustable cushion installed on a standard nursing bed, which significantly reduced expenses. This type of innovativeness highlights practicality and flexibility, providing a key capability for the project to handle unforeseen circumstances.

Key Aspects of Team Members' Innovativeness	Definition from PMs	Quotes
Exploring new directions	Break through existing knowledge boundaries and introduce previously unused technologies, processes and ideas.	PM1: *Exploring new directions tends to be pretty innovative — sometimes even beyond our current technical capabilities. [...]* PM9: *I see exploring new directions as being brave enough to dive into something nobody's tried before. For example, back when we were working on cultural tourism projects, someone suggested using VR to recreate intangible cultural heritage crafts. That was a field we had zero experience in at the time.*

Optimizing existing methods	Improve efficiency/quality by adjusting established processes.	PM2: *[...] Like that time we added glow-in-the-dark strips to regular handrails. It wasn't exactly cutting-edge technology, but it solved a real problem—helping elderly people find the handrail safely when they get up at night. That's what I'd call a very practical improvement.* PM5: *Yeah, the team definitely needs to keep improving. Our job is a kind of high-altitude operation, we have to prioritize safety and professionalism while also boosting efficiency. That's why optimizing existing methods often makes more practical sense.*
Innovating under resource constraints	Solving problems by adjusting existing resources within time, budget and technology constraints.	PM3: *It is about "finding solutions within limitations". For instance, when a client's motor failure halted production and we had no extra equipment on hand, our engineers modified the existing inspection tools and set up a temporary testing environment. They solved the problem quickly despite tight time and a limited budget. That's solid innovation in my book.*

Table 4 Definition of Team Members' Innovativeness

When asked about the differences in the three aspects of team members' innovativeness, all project managers agreed that the differences were significant. The core differences lie in four areas: innovation risk, implementation difficulty, value cycle and application scenarios.

Almost all respondents believed that exploring new directions carries the highest innovation risk and the greatest implementation difficulty, while optimizing existing methods carries the lowest risk and the least difficulty. This is because exploring new directions requires project teams to overcome existing technical and process. For example, PM6 in the construction industry mentioned that when the team introduced modular assembly technology, construction specifications needed to be verified again, and they even faced questioning from the supervision unit. Optimizing existing methods, on the other hand, is based on adjustments to mature processes, with less resistance to implementation.

However, although exploring new directions is difficult to implement, its value cycle is longer, mostly resulting in long-term benefits. For example, PM7 introduced a new service architecture which cost a lot in the initial development stage, but it reduced the difficulty of subsequent project expansion. Optimizing existing methods have a short value cycle, producing quick results. Innovating under resource constraints, however, tends to have a phased value cycle, primarily addressing single-point problems.

Regarding application scenarios, exploring new directions is often used during project initiation or planning phases, meeting the need for "differentiated competition". Optimizing existing methods is mostly operated during project execution, primarily for efficiency improvement. Innovation under resource constraints is more applicable to scenarios involving unforeseen circumstances.

Comparison Dimension	Exploring New Directions	Optimizing Existing Methods	Innovating Under Resource Constraints
Innovation risk	High	Low	Medium
Implementation difficulty	High	Low	Medium
Value cycle	Long	Short	Phased
Application	Initiation/Planning	Execution phase	Emergency

scenarios	phase		

Table 5 Key Differences in Team Member' Innovativeness

To evaluate team members' innovativeness, all respondents considered feasibility to be the primary evaluation dimension. They emphasized that innovativeness can not remain at the idea level, it must be adapted to the actual conditions of the project. PM4 mentioned that when team members proposed using drones to measure earthwork data, he first thought of if using drones to check the accuracy can meet the error requirements, rather than trying it blindly. In general, respondents believed that innovativeness should be adapted to the project, rather than forcing the project to compromise for innovativeness.

For feasible innovations, practical value is an important criterion for evaluation. Project managers generally focus on whether it can solve practical problems and create more value. For example, PM7 from the IT industry focused on four quantifiable indicators: efficiency improvement, cost reduction, quality improvement and customer satisfaction. His team proposed designing an automated reporting script to compress one hour of work per day into 10 minutes. This was recognized by PM7 as a high-value innovation. However, some ideas presented by others were rejected because they had no practical value for projects.

In addition to the core evaluation dimensions that project managers focused on, responsibility and collaboration were also mentioned as supplementary dimensions. Project managers believe that innovation is not only reflected in the idea itself, but also in the ability to implement it and the spirit of collaboration. PM3 mentioned that he often admire the members who can propose ideas and take risks. PM8 values members' ability to review and reflect. Even if an innovation fails, the ability to summarize lessons learned can be able to gain recognition from PM8.

Evaluation Dimensions	Explanation from PMs	Quotes

Feasibility	Innovation must be adapted to the actual conditions of the project and cannot remain at the level of an idea.	PM3: *Feasibility is key. In after-sales service, we focus on being "steady, precise and fast." Ideas that aren＇t grounded in reality just don＇t work. Like when a new colleague suggested using VR for customers to troubleshoot issues themselves ― most of team members are traditional technicians who aren＇t familiar with VR, so in the end, we had to drop the idea.* PM4: *Last year, an intern suggested using drones for earthwork surveying. It sounded like a solid idea, but I immediately pushed back with some practical questions: Could the drone＇s accuracy meet the required standard of ±2cm? And would its battery life cover the entire work area? In the end, instead of rushing into a full rollout, we started with a small-scale pilot test to verify everything first. That helped us avoid a lot of potential rework down the road.*
Practical Value	Solve practical problems and create quantifiable value (efficiency / cost / quality / client satisfaction).	PM7: *I focus on three main aspects, which directly determine whether an innovation is valuable. [...]* PM2: *[...] A good innovation must be something that the elderly are willing to use and can use well.*
Supplements	Other personal qualities that contribute to the implementation of innovative	PM8: *The three things I focus on most are: How targeted the innovation is, its ability to be implemented and pushed forward, and the*

	ideas (such as the sense of responsibility and the collaborative spirit).	mindset of reviewing and iterating afterward. These three points really determine whether an innovation can actually create value for a project — not just remain a good idea on paper! PM10: Innovation is never just a one-person show. Take that drone inspection idea from last time —it really took shape through team discussions and adjustments. If it had been left to just one person's thinking, it would have never taken off.

Table 6 Dimensions for Evaluating Innovativeness

In summary, interviews with 10 project managers from different industries revealed a high degree of consensus among them regarding the core dimensions, key differences and evaluation criteria of team members' innovativeness, despite variations in industry and project type. Innovativeness is primarily categorized into three core aspects, each exhibiting significant differences in risk, implementation difficulty, value cycle and applicable scenarios. When evaluating team members' innovativeness, feasibility is the primary criterion, while practical value is another core criterion. Responsibility and collaboration serve as important supplementary dimensions. This consensus provides project managers with a clear framework to identify, guide and motivate team members' innovativeness. In general, project managers understand team members' innovativeness as not simply "novelty" but the behaviors that adapt to project needs, create real value and are feasible for implementation.

3.2 The Impact of Team Members' Innovativeness on Project Implementation

Interviews revealed that the impact of team members' innovativeness on project implementation is significantly two-sided. It can be a core driving force for improving quality and efficiency, but it can also hinder the project due to its impracticality. PM8 said that "*The impact is huge! When innovation is applied right, it helps the project avoid unnecessary*

detours and can even exceed expectations. On the other hand, if it's misdirected, it can slow down progress and waste resources."

Most respondents believe that when innovation plays a positive role, it can improve project efficiency and quality, while also controlling costs and alleviating budget pressure. PM1 shared that "*The innovativeness has a significant impact on both the pace and the final outcome of a project. What stands out most in my memory is our last project—originally an engineering endeavor, where the team suggested improving efficiency and saving resources by optimizing routes and implementing waste recycling. In the end, we really did see a reduction in costs and an increase in work efficiency.*" However, when negative impacts dominate, project efficiency and quality will be hindered. PM3's team introduced a data analysis system, but they clearly overestimated the engineers' skills; the system was quite complex to use. After two months of debugging, the project not only failed to improve efficiency but also caused several malfunctions. Regarding this negative situation, he said that "*Blindly chasing innovation just creates more trouble.*" PM4 also mentioned that his team blindly introduced imported monitoring equipment. After the equipment was put into use, the humid climate at the work site caused it to malfunction, resulting in the loss of some monitoring data and delays in the project schedule.

Respondents also agreed that the three aspects of innovativeness had significantly different impacts on project implementation. Most agreed that optimizing existing methods had the most significant positive impact. They considered it to have the lowest risk, the most direct effect, and the longest-lasting effect. It doesn't require a lot of extra resources, is relatively easy to implement, carries low risk of failure, and brings immediate positive impact to project execution. PM2 said that *It tends to have the most direct and noticeable positive impact on project execution. It usually doesn't disrupt the original plan, carries low risk, and shows results quickly. Like when a certain installation technique is improved, and you see immediate gains in both construction efficiency and quality.* This is the type of innovation that most project managers actively encourage.

Exploring new directions has the highest uncertainty and highest risk of failure, resulting in a large fluctuation in its impact on project implementation. PM7 said that *If it fails, it could lead to delays, budget overruns, and might even determine the success or failure of the entire project.* But when it has a positive impact, it can break through technical barriers or industry conventions, bringing differentiated advantages to the project. The positive impact of this type of innovation is mostly long-term benefit, just like PM10 mentioned that *It may be useful in the long run, but its effects may not be visible in the short term.*

Innovating under resource constraints is different from the other two points. On the one hand, it can solve sudden resource shortages, on the other hand, the scope of this type of innovation is limited, mostly solving single-point problems, which means it has weak sustainability. As PM9 mentioned that *It is useful when resources are limited, but its impact is relatively small. It mostly solves single problems only. For example, using local materials instead of imported props saves shipping costs but has little impact on the overall project.*
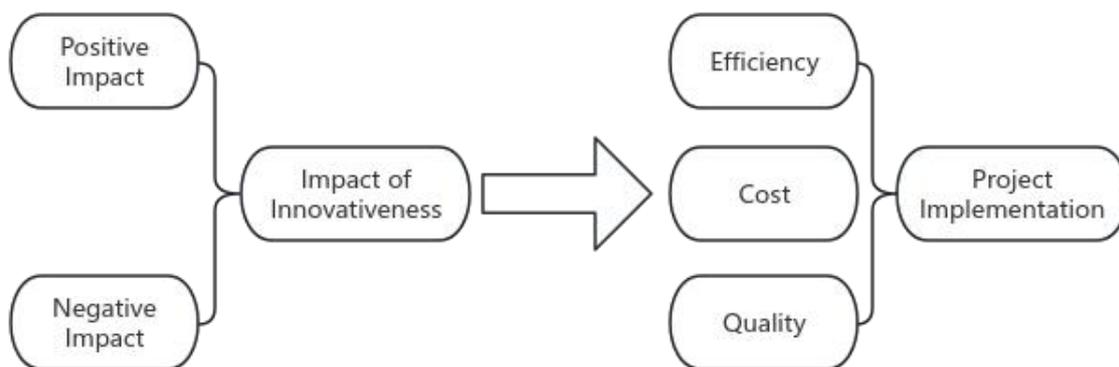
Figure 3 The impact of Innovativeness on Project Implementation

Typically, implementing innovative ideas requires specific technical, budgetary, human, or equipment support. However, project resources are usually planned in advance at the project's initial phase, making it difficult to allocate resources temporarily when new ideas need to be implemented. PM7 mentioned that the team wanted to introduce new testing tools, requiring the purchase of licenses and training, but the project budget could not allow them to

provide support, forcing the idea to be rejected. Some project managers pointed out that insufficient resources include not only explicit budgets and equipment but also time. Innovative testing and adjustments often consume time, leading to resource allocation conflicts.

Implementing innovative ideas requires cooperation from multiple departments. However, different departments have different work paces, making coordination become a key obstacle. PM3 shared that promoting remote motor upgrades required coordination among multiple departments. The technical department needed to develop the upgrade package, the operations department needed to build the platform, and the procurement department needed to coordinate equipment. The coordination process took more than a month, and the lack of standardized procedures further delayed the progress. Other project managers also noted the cumbersome nature of cross-departmental collaboration processes.

When an innovative idea is finally ready to be implemented in a project, new problems arise. Some team members are accustomed to traditional work methods and are resistant to new ideas, which hinders the implementation of innovations. For example, when the PM7 team introduced new project management tools, some members felt that the time cost of learning new technologies was too high and resisted, which affected the effectiveness of the promotion.. Furthermore, even if the team embraced innovation, deviations could occur during execution. For instance, when the PM6 team in the construction industry promoted a new type of hardener, workers used it incorrectly, leading to reduced concrete strength later on.

Obstacle Types	Detailed Explanation	Quotes
Insufficient resources	Lack of supporting resources such as budget, time, technology and equipment.	PM7: *Turning innovative ideas into action most often hits the wall of limited resources. A lot of our creative ideas call for extra budget, more people, or*

		additional time—but project resources are usually locked in from the start. PM5: *Innovation isn't something you can just talk about and then put into practice. First, you have to invest time to actually implement the idea. After that, you still need funding, equipment and personnel to support it.*
High cost of cross-departmental collaboration	It requires cooperation from multiple departments, but their workflows and standards are inconsistent, and coordination cost a lot.	PM3: *Cross-department coordination is tough. Like the remote upgrade project I mentioned before, it needed [...] We spent over a month just trying to align everyone.* PM8: *When the technical team proposes an innovative solution, it requires [...] But each department has its own workflows and priorities, so getting everyone aligned takes a lot of time. Sometimes, by the time coordination is finally in place, the best chance has already passed.*
Low acceptance among team members	Members are accustomed to traditional methods and resist new tools/processes, or deviations occur during execution.	PM7: *Some team members are used to working "step by step" and can be resistant to new ideas. They think, "If the old way works fine, why make changes?" For example, someone once suggested optimizing our project communication process by introducing a new collaboration tool. But a few senior employees insisted that "WeChat is enough for communication. Learning a*

		new tool is too much hassle." and they refused to use it. In the end, that innovation never really happened.

Table 7 Obstacles of innovativeness implementation

When asked how to judge whether team members' innovativeness truly promotes project implementation, most respondents believed that process efficiency was the most important factors. They would focus on whether the time, steps or manpower input for specific tasks decreased after the innovation was implemented. PM3 used changes in troubleshooting time as a reference. If the troubleshooting time was shortened after process optimization, he would determine that the innovation was valuable. For industries with high safety and compliance requirements, such as construction and equipment maintenance, meeting quality standards is a prerequisite for effective innovation. In the construction industry, PM6 used the first-time acceptance rate and deviation of measured data as core indicators. Most project managers also pay attention to whether innovation reduces project expenses or avoids resource waste, while some project managers also consider long-term maintenance costs, avoiding the innovations that save costs in the short term but require high investment in the long term. Moreover, for some special projects, feedback from the team or clients can better reflect the actual value of innovation. For example, PM2 believes that a client's praise for their work is more important than data. His team needs to visit nursing homes or other facilities to interact with elderly residents and caregivers, using their feedback to determine the effectiveness of the innovation.

In summary, project managers believe that the three aspects of innovation have varying degrees of impact on project implementation. The key to their effectiveness lies in the "fitness of innovation to the project's actual needs," rather than the novelty of the innovation itself. Regarding obstacles to implementation, insufficient resource allocation, high costs of cross-departmental collaboration, and low team acceptance are the three main reasons hindering the realization of innovative ideas. These obstacles are not isolated but interconnected. Insufficient resources can exacerbate collaboration difficulties, and team

resistance can further waste limited resources. The positive impact of team members' innovation on project implementation is not automatic but requires precise matching of project needs, overcoming implementation obstacles, and focusing on practical value.

3.3 The Impact of Team Members' Innovativeness on Project Success

Time, cost and quality are the three key criteria for all project managers to judge project success. PM1 believed that *First and foremost, the most critical thing is whether the project is completed on time—in our industry, that means whether it's delivered as scheduled. Then, after completion, the overall profit matters most. That's what's most practical, because we're not running a charity here—we have employees. So profit margins and how quickly we recoup costs are also key measures of a project's success.* PM10 added that these three criteria directly determine customer satisfaction and team growth, and are basic indicators of project success. He said that *First, we have to finish on time—we can't afford delays, or the client won't be happy. Then, we need to keep costs within budget. If we go over, we'll get criticized. Thirdly, client satisfaction is also important—no complaints, and hopefully even some praise. Finally, it's important that the team grows and learns new things along the way, so that our next project can be even better.* Moreover, different industries also have their own unique industry standards, and some industries have added exclusive success criteria due to their characteristics. For project managers in the construction industry, zero safety accidents are the primary prerequisite; engineering safety directly relates to the success or failure of the project, and any quality or safety issues will negate the project's success. PM2, working in the elderly care industry, emphasized the social value of the project, adding "improving the quality of life for the elderly" as a criterion.

For most project managers, basic success is not enough. To achieve a higher level of success, they have additional higher-level standards. Customer satisfaction and long-term competitiveness are representative of these standards. Both PM3 and PM8 answered that customer renewals, repeat purchases, and referrals are important indicators of project success. Furthermore, some project managers mentioned long-term competitiveness. For example, PM4's team once obtained a patent for a support structure in a project. He believes

it enhanced the team's industry reputation and he is very proud of it.

Criteria Type	Evaluation Dimensions	Quotes
Basic Standard	Time, Cost, Quality	PM4: *The first requirement is meeting schedule, cost and quality targets—these are fundamental. If we fall short on any of these, we can't even begin to talk about delivering real value.* PM7: *First, delivering on time is the most basic requirement. If a project can't be finished within the agreed timeline, even the best outcome might not meet the client's needs—it could even lead to the client pulling out of the partnership. Then comes meeting quality standards—the outcomes have to match the client's requirements and quality specs. For example, the software developed shouldn't have critical bugs, and a designed product must meet the client's usability expectations. Otherwise, the project simply fails. Third is budget control—project spending has to stay within the approved budget. If you go way over budget, even with on-time delivery and good quality, it still means financial loss for the company. From a business perspective, that's still not a successful project.*
Industry-specific Standard	Additional requirements based on industry specificity	PM2: *Whether the rate of accidental falls among the elderly has significantly decreased. Additionally, the quality of life and sense of dignity for the elderly must also be improved.*

		PM5: *Safety is a red line that cannot be crossed. If no safety incidents occur during the execution of the project, and none arise during later maintenance, then it's clear that safety has been handled thoroughly and effectively.*
Advanced Standard	Client Satisfaction, Long-term Competitiveness	PM4: *Turning innovative experience into standardized work methods makes it easier to reuse them in future projects. At a higher level, there's industry-wide value —like that solution we developed earlier, which was included in the local standard design references. That kind of innovation, which offers guidance and reference for the entire industry —now that's what truly makes innovation meaningful.* PM10: *For example, last year's warehouse upgrade project we completed was finished on time, came in 5% under budget, and received positive feedback from the client praising our efficiency. The team also learned how to use a new warehouse management system. That's what I'd call a truly successful project.*

Table 8 The Criteria for Evaluating Project Success

Interview results show that team members' innovativeness primarily contributes to project success by solving project challenges and enhancing project value. Respondents previously mentioned that they considered time, cost and quality to be fundamental standards for project success, and innovation directly addresses the challenges affecting these three criteria. PM7 shared his experience that *The client required that "the live streaming course support 1,000 concurrent users with clear, smooth video playback" but our originally server*

configuration could only handle up to 500 concurrent users. Upgrading the server would have exceeded the budget. That's when one of our architects came up with an innovative idea: "Adopt a CDN acceleration + dynamic traffic distribution solution, distributing the live video stream across multiple nodes. When concurrent users exceed 500, automatically route the additional traffic to other nodes. This way, we can ensure clear, lag-free video without upgrading the server—and even stay within budget.

Furthermore, project managers believe that innovation helps enhance project value and meet higher-level standards. Innovation improves customer satisfaction and long-term competitiveness by optimizing the experience and creating differentiation. PM4 said that *Thanks to the efficiency and precision brought by this innovation, the client was highly satisfied and later directly entrusted us with the follow-up EPC project. This is exactly the value of innovation—it can enhance construction efficiency, improve data accuracy, and boost market competitiveness all at once, achieving multiple benefits.*

When discussing the contribution of three typical aspects of innovativeness to project success, respondents indicated a clear emphasis on each aspect. They believed that exploring new directions focuses on higher-level value and long-term competitiveness. It contributes most significantly to long-term competitiveness and sustainability, with a weaker contribution to time and cost control, and may even have short-term negative impacts due to risks. For example, PM7's team's attempt to design a cross-platform framework resulted in a two-month project delay. Optimizing existing methods focuses on basic standards and has low risk and quick results, serving as a core support for project success. It has almost no impact on project stability and is the core innovation type for most projects. Innovating under resource constraints focuses on "cost control and on-time delivery," ensuring the achievement of basic project standards in unforeseen circumstances, with limited contribution to higher-level value. The value of this type of innovation is concentrated in "emergency scenarios" and is difficult to form long-term competitiveness.

Aspects of Innovativeness	Affected Project Success Dimension	Contribution to Basic Standards	Contribution to Advanced Standard
Exploring new directions	Cost Control, Client Satisfaction, Long-term Competitiveness	Medium (may exceed budget/be delayed in the short term)	High (creating a differentiated competitive advantage)
Optimizing existing methods	Efficiency Improvement ,Quality Optimization, Cost Control	High (direct cost reduction / efficiency improvement / stable quality)	Medium (increasing satisfaction but is difficult to create a competitive advantage)
Innovating under resource constraints	On-time Delivery, Cost Control	High (avoiding project interruption/cost overrun)	Low (only addresses single-point emergency needs)

Table 9 The Contribution of Innovativeness to Project Success

Of the project managers interviewed, eight reported experiencing projects falling short of expectations. They also acknowledged that a lack of innovation within their teams was one of the reasons for project failure. PM6 believes that when teams rely too heavily on traditional experience, they become trapped in repeatedly solving the same problems. When faced with unconventional new problems, these issues accumulate and become intractable. His team, in a renovation project of an old building, discovered recurring cracks in the walls. The team simply reworked the walls using traditional methods without proposing innovative solutions, resulting in a one-month delay, cost overruns, and significant client dissatisfaction. Only after reviewing the project did they discover that improving the plaster mix ratio would have solved the cracking problem, but it was too late. These examples demonstrate that if a project team lacks innovation, its problem-solving abilities will be insufficient. It will be unable to solve new problems, overcome bottlenecks, or create differentiated value, ultimately leading to projects failing to meet expectations.

While a few managers haven't experienced project failure, they still felt that some projects could deliver better outcomes. The high-level standard for project success relies on the differentiated value brought by innovativeness. Projects lacking innovativeness often only meet basic requirements and fail to create value beyond expectations. These projects frequently employ homogenized solutions, failing to innovate by catching the potential client needs and industry trends. While they may meet basic requirements, the results lack highlights and fail to surprise the team and client. PM10 added that unexpected situations often arise during project implementation. Teams which are lacking innovativeness can not quickly adapt to changes, potentially leading to project stagnation. Although this doesn't directly cause project failure, he still thinks such problems could be avoided.

3.4 The Role of Organizational Support, Work Environment and Teamwork

All the interviewed project managers indicated that organizational support is a crucial foundation for stimulating team members' innovativeness. Most organizations encourage innovativeness through motivation policies. PM5 mentioned that his company offered salary increases and promotion opportunities to members who implement innovations. Motivation rewards can make teams realize that their innovations can be rewarded, directly motivating members' innovative enthusiasm. Some organizations provide guarantees for innovation implementation through resource allocation, the most direct way is providing funding. For example, PM4 and PM7 said that their companies provide funding for project teams to conduct innovative experiments. Some organizations help teams communicate with various departments, enabling innovative projects to quickly coordinate resources such as technology and data. Resource support allows good ideas to be implemented quickly. Some organizations cultivate an innovative atmosphere through training and cultural development. PM10's company organizes AI logistics management training to help its members learn new technologies. PM3's company regularly holds innovation thinking workshops, inviting industry experts to share case studies. This kind of support makes members feel that the organization thinks highly of innovation and creates a culture that encourages experimentation.

Conversely, when an organization lacks support, the team's innovative spirit is directly

undermined. Members will feel that coming up with new ideas is meaningless, and their enthusiasm for innovation will decrease. PM9 shared an experience in a collaborative project where the other organization had no additional budget and did not allow for adjustments to the plan, and their members rarely offered innovative perspectives. PM7 also mentioned that his previous company did not provide training in new technologies, leaving members who wanted to try AI-optimized projects without any learning opportunities. When organizations do not provide training support, the team's innovative capabilities cannot be developed, and even innovative solutions may fail to be implemented due to insufficient member skills. PM6 added that if an organization lacks a mechanism to tolerate failure, members will be hesitant to try due to fear of risk, and the entire team will become conservative.

Forms of Organizational Support	The Effect on Promoting Innovativeness	Quotes
Motivation Policy	Through salary increases, promotions and other rewards, stimulate members' enthusiasm for innovation	PM5: *Our company rewards them with salary increases, and they can also get promoted to team leaders. At the end of the year, they can also get bonuses. For the past two years, we＇ve recognized those who have made achievements in this area by presenting them with bonuses and certificates of commendation at the annual meeting.*
Resource Allocation	Provide a budget for innovation to ensure that innovative ideas are not shelved due to a lack of funding. Facilitate cross-departmental	PM4: *In addition, the company has set up a risk innovation fund, allowing each project to allocate 0.5% of its output value to experiment with new technologies and methods—without having to worry about the pressure of milestone assessments. We later used this fund to test an intelligent sprinkler*

	resource integration and reduce communication difficulties.	*system, and the results were excellent. It has now been rolled out across all the company's projects, and everyone's enthusiasm for innovation keeps growing.*
Training and Culture	Cultivate members' innovative abilities and create an innovative atmosphere.	PM10: *Last year, the company organized a training session for us on AI logistics management. After we returned, new ideas were coming up. This kind of support has been really effective—team members now feel more confident proposing innovations.*

Table 10 The Role of Organizational Support

Psychological safety within the team is the greenhouse for innovative enthusiasm. When a team has sufficient psychological safety, innovative ideas will continuously emerge. PM7 stated that he sets up an anonymous suggestion box in the team to encourage members to express their ideas, even if these ideas are not mature yet. However, when there is an atmosphere of accountability for failure within the team, members will avoid innovation on purpose. PM9 believes that if members' ideas are frequently challenged, eventually no one in the team will dare to speak up.

Furthermore, the team's tolerance for innovation failure also affects members' willingness to innovate. Project managers generally believe that tolerance with boundaries is the optimal state. In teams with zero tolerance for failure, members will abandon innovation for fear of being held accountable. Most successful teams are tolerant of failure and they focus more on accumulating experience. PM7's team, once reviewed and summarized their findings to improve an innovation experiment that wasn't entirely successful, successfully developing a mature technology that was applied to subsequent projects. On the other hand, they also mentioned that they cannot be completely indifferent to failure. For example, PM4 stated that he distinguishes between failures caused by recklessness and valuable failures.

Work Environment Dimension	The Effect on Promoting Innovativeness	Quotes
Psychological Safety	Inspiring innovation, members are willing to proactively offer their ideas.	PM7: *I think psychological safety is really important. If team members feel that their ideas won'␣t be laughed at and they won'␣t be shot down for saying the wrong thing, everyone becomes more willing to speak up and try new things. I once led a team where everyone was really reserved during weekly meetings—they were afraid to share new ideas out of fear of being criticized. Later, I shifted the atmosphere by emphasizing in every meeting that "every idea deserves respect," and I also set up an anonymous suggestion box. Gradually, people started proposing ideas more openly, and the enthusiasm for innovation clearly grew.*
Failure Tolerance	Reduce concerns about risks and encourage members to try new things.	PM4: *We make a clear distinction between reckless failure and valuable failure. Reckless failure means rushing into something blindly without any preparation, which only wastes time and effort. Valuable failure, on the other hand, involves planned experimentation—even if it doesn'␣t succeed, it still builds useful experience. [...] Now, in our office, we'␣ve put up an "Innovation Footprint" that displays both successful and unsuccessful cases. The idea is to show everyone that as long as you learn from the failure, the effort is not useless.*

Table 11 The Role of Work Environment

Regarding team collaboration, respondents believed that knowledge sharing and effective communication among team members could transform individual innovation into project value. Complementary knowledge among members in different roles can refine fragmented ideas. The PM3 team holds weekly case study sharing sessions to help members exchange ideas. They have a shared testing guide; when an engineer proposes a new idea, other engineers supplement it based on their own technical skills and experience. When the idea is sufficiently refined, it is written into the guide. Another important role of team collaboration is that it allows innovative ideas to better align with project needs. In the PM8 team, an operations member proposed the idea of establishing a user behavior data dashboard. Through cross-departmental communication, technical staff supplemented the feasibility, product staff optimized the functionality, and ultimately a dynamic user profile analysis system was formed.

PM3 mentioned that disagreements within a team are inevitable, and good team collaboration can help resolve these disagreements, requiring the team to establish a clear collaboration mechanism. He mentioned that his team once disagreed on the selection of a diagnostic system; he organized members to conduct comparative tests of typical faults, ultimately resolving the disagreement and determining the final solution. Respondents added that effective collaboration can resolve innovation disagreements, but when collaboration mechanisms are unclear, differences of opinion can escalate into conflicts among members. Effective mechanisms can turn disagreements into opportunities for innovation optimization, while a lack of collaboration not only hinders current innovation but also dampens members' enthusiasm for future innovation.

Work Environment Dimension	The Effect on Promoting Innovativeness	Quotes
Knowledge Sharing	Integrate the expertise of members in different	PM3: *Knowledge sharing and communication are key to transforming individual innovation*

	roles, collect fragmented ideas, and synthesize them into a feasible solution.	*into team value. In our team, we hold weekly "Fault Case Sharing Sessions" where everyone discusses interesting faults, solutions, and unresolved issues. [...] Sharing knowledge turns individual experience into team resources and inspires more practical, grounded innovations.*
Conflict Resolution	By resolving disagreements arising from innovative ideas, disputes can be transformed into opportunities for innovation .	PM6: *For example, if someone wants to try a new technique while others are worried about the risks and oppose it, having clear collaboration guidelines makes a big difference. First, both sides can lay out their concerns and potential benefits. Then, involve supervisors or technical leads to evaluate the idea together, or even run a small-scale test. In most cases, this kind of structured process can help resolve the disagreement. But without a reliable conflict resolving mechanism, everyone just talks past each other, leading to endless arguing with no resolution. In the end, the innovation either gets shelved or forced through, which only creates more conflict.*

Table 12 The Role of Team Collaboration

3.5 The Role of Transformational Leadership Behavior

The Respondents indicated that there are many behaviors that can stimulate team members' innovativeness, and the specific approach needs to be chosen based on project practice. Vision motivation is the most common approach. Project managers inspire a sense of mission in team members by outlining a clear and meaningful project vision. This

motivation transcends material rewards, driving members to innovate proactively. PM2 stated that he helps team members understand the social value of the current project. When team members feel that their work is meaningful, they will proactively explore innovative solutions to create more value for the project. Some project managers do not give direct instructions but guide team members to actively explore solutions through questioning or brainstorming. PM3 stated that he likes to use questioning to guide team members' thinking. This intellectual stimulation cultivates members' innovative thinking, enabling them to think independently rather than passively execute.

PM7 mentioned that he provides differentiated support based on members' abilities and needs, allowing members with different traits to unleash their innovative potential. He provides new technology training to young engineers and assigns senior engineers to lead small teams to develop new testing tools. This personalized care makes team members feel valued, thereby enhancing their enthusiasm for innovation. Some project managers also grant members autonomy in innovative decisions while providing safeguards for trial and error. PM10 empowers senior employees with technical improvement authority, allowing them to adjust the construction sequence based on actual site conditions, while novices participate in innovation discussions under guidance. This delegation of authority also clearly defines the "boundaries of trial and error," enabling members to boldly experiment within safe limits without fear of being held accountable for failure.

For project managers who favor delegation, they typically assign different levels of innovation decision-making authority based on members' abilities, experience, and the level of innovation risk. PM4 categorizes members into "new talent - skilled members - industry experts," with newcomers responsible for minor improvements, skilled members having the authority for technical upgrades, and experts participating in solution optimization decisions. This tiered delegation allows members with varying abilities to contribute their innovative value within appropriate scopes. Furthermore, for low-risk innovation projects, project managers grant broader authority, allowing members to execute directly; medium-risk innovations require team discussion before authorization; and high-risk innovations require

company approval before granting appropriate decision-making authority.

PM5 believes that delegation should not create chaos. He clarifies the boundaries of members' innovation autonomy by proposing three requirements: 1. Do not deviate from the core project objectives; 2. Do not cross safety and compliance red lines; and 3. Do not exceed resource limits. Controlling these boundaries ensures orderly innovation within the rules, preventing projects from spiraling out of control due to excessive delegation.

When team members' innovative ideas conflict with the original project plan, project managers typically neither blindly reject them nor adjust the plan. Proposing new ideas is encouraged, but the feasibility of implementing innovative solutions requires data support. Project managers will organize the team to conduct quantitative analysis of the conflicts between innovative ideas and the original plan, rather than relying on subjective judgment. For immature but valuable innovative solutions, project managers adjust and refine them, integrating the core value of the innovative idea into the original plan. This approach allows innovative ideas to be partially implemented without affecting the overall project goals, leading to higher enthusiasm among team members for further innovation.

Respondents indicated that for shortcomings in innovative ideas, actionable improvement suggestions should be provided, rather than simple criticism. PM2 stated that he rarely directly rejects ideas that conflict with the original plan, as forcibly implementing the original plan without explanation would harm team enthusiasm. He believes this gentle approach not only avoids discouraging team innovation but actually enhances it. When project managers offer constructive suggestions, they help team members refine their ideas and prevent innovation from becoming impractical. The process of handling conflicting ideas teaches team members how to innovate within the rules, resulting in more feasible ideas in the future.

Types of Motivation Behaviors in Transformational Leadership	Specific Practices	Quotes
Vision Motivation	Articulate a meaningful project vision, link tasks to higher values and inspire innovation.	PM2: *I mainly motivate the team by "painting a meaningful vision." I don't just say, "We need to renovate the bathroom." Instead, I say, "Our work is about making sure every elderly person feels safety and dignity —not fear —the moment they stand up." Connecting everyday work to a meaningful mission really inspires innovative energy from within.*
Intellectual Guidance	Guide independent thinking through questioning and brainstorming.	PM3: *I don't give direct answers; instead, I guide thinking through questions. For example, when customer complaint rates are high, I ask, "What are the key problem in the existing processes? What are the customers most dissatisfied with? Can we solve this from a different angle?"*
Personalized Care	Assign tasks based on members' characteristics and provide differentiated support.	PM7: *A senior engineer was assigned by me to lead the innovative design of a new module, and he delivered excellent results. Meanwhile, for a new product assistant, I guide him to start with research before bringing the proposal to the team for discussion. This approach*

		ensures that innovation remains dynamic without letting the project get out of control, allowing everyone to contribute their creativity within appropriate boundaries.
Limited Delegation of Authority	Granting autonomy to innovation decisions	PM10: *Last time I assigned an employee to lead the robotic sorting project, I set clear cost and timeline goals for him and listened to his weekly updates. He handled it smoothly, and there was no chaos. If delegation has no boundaries — like letting a newcomer lead a major project — it could easily go wrong. But if the boundaries are too strict, it can choke innovation. So balance is key.*
Conflict Handling	When innovative ideas conflict with the original plan, neither blindly follow nor criticize. Offer specific suggestions for improvement regarding the shortcomings of valuable ideas.	PM9: *When someone proposes an idea that conflicts with the original plan, I ' ll first ask them to explain their reasoning clearly, then we look together at where the conflicts lie and which solutions are feasible. [...] Doing it this way doesn ' t discourage the team ' s enthusiasm. Instead, it makes everyone feel that innovative ideas are taken seriously.*

Table 13 Innovativeness Motivation Behaviors in Transformational Leadership

In summary, through semi-structured interviews with 10 project managers from different industries, this study reveals the core dimensions and influencing mechanisms of project team members' innovativeness, providing support for understanding the relationship

between innovativeness and project from project managers' perspective. The study found that project managers perceive three core dimensions of team members' innovativeness as having different characteristics, and also established reasonable evaluation criteria.

Regarding the influencing paths, the impact of team members' innovativeness on project implementation is two-sided. Project managers need to select appropriate innovations based on the specific circumstances of the project. Otherwise, not only will the positive effects of innovation be failed, but it may also hinder the implementation of the project. For project success, team members' innovativeness contributes to greater project success from different dimensions by improving implementation efficiency and increasing the value of outcomes.

Organizational support, work environment and team collaboration support the emergence of team members' innovativeness. Organizational support provides a basic guarantee for innovativeness, the work environment can influence members' psychological safety and enthusiasm for innovativeness, and team collaboration can promote the transformation of individual innovation into team value. At the same time, project managers can guide the generation and implementation of innovativeness among team members through transformational leadership behaviors.

Overall, this study reveals how team members' innovativeness impacts project implementation and success, clarifies the roles of organization, environment, collaboration, and leadership behavior, and highlights the obstacles to innovation implementation, laying a solid foundation for the development of management strategies.

Limitations of the research and directions for future studies

• The study selected 10 project managers as interview respondents. Although covering multiple industries such as construction and IT, the sample size and scale is still not enough. Project managers of different project scales and organizational types may have different perceptions and management practices regarding innovation. The existing sample

cannot fully cover these variables, resulting in the research conclusions not being applicable to all industries or projects.

• This study employs only a semi-structured interview qualitative research method, relying on the project manager's subjective experience and retrospective narrative, lacking quantitative data support. On the one hand, interview content may be affected by memory bias; on the other hand, it is impossible to conduct statistical tests on the causal relationships between variables, making it difficult to accurately quantify the impact weight of different innovation dimensions on project success.

• The study only focuses on the project manager's perspective, neglecting the viewpoints of other stakeholders such as team members and clients. This lack of perspectives—including team members' understanding of their own innovative actions and clients' evaluations of the innovative outcomes—may result in an incomplete understanding of team members' innovativeness.

• Future research could expand the sample scale to include project managers of different project sizes, organizational types, and regions. And incorporate perspectives from multiple stakeholders, including team members, clients, and organizational management. A hybrid qualitative and quantitative research approach would also be employed, first extracting core dimensions through interviews, then developing targeted scales for large-sample questionnaire surveys, and finally using statistical methods such as models to verify the causal relationships between variables and quantify the impact of each dimension of innovativeness on project success.

4. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

This study, from the perspective of a project manager, explored the impact mechanism of team members' innovativeness on project implementation and success through semi-structured interviews and a literature review, clarifying the influencing pathways of key factors.

The Aspects and Characteristics of Team Members' Innovativeness

• From a project manager's perspective, team members' innovativeness can be divided into three core aspects: "Exploring New Directions," "Optimizing Existing Methods," and "Innovating Under Resource Constraints." Each aspect differs significantly in risk level, implementation difficulty, value cycle and application scenarios.

• Exploring new directions is characterized by high risk and implementation difficulty, but a long value cycle. It is primarily applicable to the project initiation or planning phase, aiming to build a differentiated competitive advantage. Optimizing existing methods represents low risk and quick results. It is suitable for the project execution phase, with its core value lying in improving efficiency and quality. Innovating under resource constraints focuses on solving problems with limitations, emphasizing practicality and flexibility. It is suitable for emergency scenarios, primarily addressing single-point resource gaps, and its value is phased.

• Project managers evaluate innovativeness based on feasibility, practical value and supplementary factors, emphasizing that innovativeness must adapt to the actual needs of the project, rather than simply pursuing novelty.

The Impact of Team Members' Innovativeness on Project Implementation

•The impact of team members' innovativeness on project implementation is two-sided: when innovativeness precisely matches project needs, it can directly improve implementation

efficiency and quality by optimizing processes, overcoming barriers, and controlling costs. Conversely, innovation without considering practical realities can lead to resource waste and schedule delays.

• There are three core obstacles are faced in the implementation of innovativeness. First, insufficient resource allocation, including a lack of explicit resources such as budget, time, and technology, as well as implicit support. Second, difficulties of cross-departmental collaboration. Differences in workflows and priorities between different departments leading to low coordination efficiency. And third, low team acceptance. Some members are resistant to the new method or have implementation deviations, which hinders the promotion of innovation.

The Impact of Team Members' Innovativeness on Project Success

• The evaluation criteria for project success cover three standards: basic standards (time, cost, quality), industry-specific standards, and advanced standards (client satisfaction, long-term competitiveness, etc.). Team members' innovativeness drives success by solving core challenges and enhancing project value.

• For basic standards, optimizing existing methods and innovating unde resource constraints directly guarantees schedule, controls costs, and maintains stable quality. For advanced standards, exploring new directions can create differentiated advantages and enhance customer loyalty and industry competitiveness to achieve extra value for the project.

• A lack of innovativeness can lead to insufficient problem-solving capabilities within the project team, making it difficult to handle unconventional challenges. Even if basic requirements are met, it is still a struggle to achieve higher-level success goals without innovativeness.

Other Factors Influencing Team Members' Innovativeness

• Organizational motivation policies, resource allocation, training and organizational

culture can provide fundamental support for team members, creating conditions for them to unleash their Innovativeness. The team environment influences members' willingness to innovate, members are more willing to propose innovative ideas in a safe and supportive environment. Effective team collaboration allows members to share knowledge and resolve conflicts in better ways, promoting the transformation of individual innovation into team value.

• Project managers can effectively improve team members' innovativeness through transformational leadership behaviors. While using transformational leadership behaviors, project managers can effectively improve the quality of innovation generation and implementation efficiency by stimulating motivation among team members, fostering a safe and innovative environment, and providing differentiated support.

Recommendations

Based on the research findings, this study can provide strategies for managing innovativeness and help enterprises develop their project management systems.

Recommendations for Project Managers

• Select different innovation directions based on the characteristics and stages of the project. During the initiation phase, focus on "exploring new directions" to establish a competitive advantage; during the execution phase, prioritize "optimizing existing methods" to improve implementation efficiency; in emergency scenarios, emphasize "innovation under resource constraints" to resolve unexpected problems.

• Encouraging Innovativeness through Transformational Leadership

1. Explain the social value of projects to stimulate members' motivation for innovation.

2. Guide members to break through traditional mindsets through questioning and brainstorming.

3. Assigning tasks based on members' abilities and characteristics. Provide training and guidance for newcomers, and empower skilled members with greater decision-making authority for innovation.

• Establish a innovativeness evaluation system with feasibility and practical value as core evaluation indicators. Add the sense of responsibility and collaborative ability into supplementary evaluation dimensions, emphasizing experience accumulation during the innovation implementation process.

Recommendations for Enterprises

• Improve the organizational innovation support system by establishing motivation policies for innovative achievements and setting up innovation fund. Organize new technology training courses regularly, integrating the concept of innovativeness into the corporate culture.

• Create a supportive work environment for innovativeness. Support project teams to summarize the lessons learned from failed innovation cases rather than blame, strengthening psychological safety and encouraging members to express new ideas.

• Optimize team collaboration by conducting case studies and technology sharing sessions. For disagreements arising from innovative ideas, develop standardized conflict resolution processes to transform conflicts into opportunities for innovation.

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ANNEXES

Annex 1 Example of Transcribed Interview with PM1

Interviewer: Hello, thank you for taking part in the interview. Let's get started now. First, could you please briefly introduce your work experience?

PM1: I work in the construction industry. This is my eleventh year as a manager.

Interviewer: My research topic focuses on how project managers view the innovativeness of team members. I categorize into three aspects: exploring new directions, optimizing existing methods, and innovating under resource constraints. How do you see and understand these?

PM1: I'd say there should be these three aspects. Each of these areas tests both the individual capabilities of team members and plays a crucial role in the final delivery of the project. Exploring new directions tends to be more innovative—sometimes even beyond our current technical capabilities. Optimizing existing methods usually means making adjustments to the current workflow or technology within the project to enhance overall work efficiency. Innovating under resource constraints is more practical—it requires factoring in time, budget, manpower, materials, and so on. That's actually the approach we use the most. Innovations in new directions are certainly more groundbreaking than those under constraints, but they also need higher overall demands. While they may seem distinct, these three aspects can actually complement each other and be used together. All three are indispensable in terms of their role and impact on the team.

Interviewer: You mentioned there are differences. What differences do you see?

PM1: The differences are quite clear. First, the level of innovation varies. For instance, exploring new directions involves innovating from scratch, which undoubtedly requires a higher degree of creativity compared to the other two. Additionally, the assessment of employee capabilities differs. Exploring new directions primarily tests an employee's innovative ability—the skill to create something from nothing. The other two, however, focus more on evaluating an employee's practical problem-solving skills, requiring them to

innovate based on existing conditions and available resources.

Interviewer: Which aspect do you value more, and why do you think it's more important?

PM1: Among these three, I pay more attention to optimizing existing methods and innovating under resource constraints. This probably has to do with our company's actual situation—exploring new directions often requires equipment or conditions we don't currently have. In other words, it's harder to implement. For us, such ideas tend to stay at the conceptual level and rarely translate into practical benefits for the project or the company. If someone can optimize current methods or innovate effectively under tight constraints, I'd say that person definitely has strong adaptability. Being able to innovate no matter the limitations is exactly the kind of talent my projects need, and it's a crucial ability in an employee. More practically speaking, this kind of innovation tends to improve work efficiency more directly—that's why I value it more.

Interviewer: How do you think innovativess influences the project during its implementation?

PM1: The innovativeness has a significant impact on both the pace and the final outcome of a project. What stands out most in my memory is our last project—originally an engineering endeavor, where the team suggested improving efficiency and saving resources by optimizing routes and implementing waste recycling. In the end, we really did see a reduction in costs and an increase in work efficiency.

Interviewer: Will the impact of these three aspects of innovativeness differ from each other?

PM1: Yes, no doubts. The impacts are certainly different. In reality, it depends on the project context—different types of innovation have varying effects on the progress and economic outcomes of a project. Overall, for me, the positive impact of optimizing existing methods tends to be more noticeable.

Interviewer: When turning these ideas into actions, what difficulties do you most commonly encounter?

PM1: Coming up with ideas is great, but to be honest, many team members can be quite

idealistic. The overall idea may be good, but putting it into practice often brings a lot of challenges. One of the most common issues is equipment. Many innovative ideas from team members might be inspired by something they've seen, but the equipment involved isn't something we currently have. Implementing it would require new equipment. In our industry, the cost of equipment is still very high.

Interviewer: How do you determine whether innovativeness has truly impacted project implementation? Do you set specific criteria for this?

PM1: Assessing this requires looking at multiple aspects—you can't rely on just one single measure. Generally, I consider the overall project timeline: whether the introduction of innovative practices has accelerated progress. Then there's the payback period: has innovation shortened the time it takes to recoup our investment? Beyond that, I also consider whether the innovation offers learnings or reusable value for other future projects, and so on.

Interviewer: How do you measure project success? Or what are your criteria for judging success?

PM1: First and foremost, the most crucial factor is whether the project was completed on time. In our industry, that means whether the project was delivered on schedule. Then there's the overall return on investment after completion. This is the most practical aspect, because we're not running a charity project; we have so many employees to support. Therefore, the level of return and the payback period are also key criteria for measuring project success.

Interviewer: So how did innovativeness contribute to the project's success?

PM1: Primarily, it helped the project succeed by improving work efficiency. We work on engineering projects, and some team members suggested that we could improve efficiency by refining material procurement and transportation route design. It proved that it did improve our efficiency. The procurement of green materials also responded to the national call and saved resources. It was a win-win.

Interviewer: Have you ever experienced project failure?

PM1: Of course I have. If you have successes, you should have failures.

Interviewer: Do you think this is related to a lack of innovativeness among team members?

PM1: It might be partly related. But as the project leader, it's definitely more related to me. I'm the one who needs to reflect on my own actions.

Interviewer: Does your company or organization provide support for team members in terms of innovation?

PM1: Yes, for example, we regularly provide relevant training to broaden their knowledge. There is also other, more practical support, such as financial support. We reward employees who contribute innovative ideas that are adopted in projects. This is the most effective way to motivate everyone to demonstrate their innovative spirit. Furthermore, we consider this a factor in future promotions. In addition, we provide as much technical support as possible. We try our best to support their innovative ideas regarding new technologies and other related areas.

Interviewer: If the organization doesn't provide enough support, will it affect innovativeness?

PM1: Everybody knows that innovative ideas require a lot of effort. If the organization doesn't provide financial rewards, people won't put in their best effort. Besides that, moral support from leadership is also very important. And if the organization can't provide the technical support to make your ideas happen, it will also do harm to the enthusiasm of team members.

Interviewer: Does psychological safety affect team members' enthusiasm for innovation?

PM1: Yes, the higher the sense of psychological safety within a team, the higher the members' enthusiasm for innovation will be. If an employee feels supported by the entire team, and their colleagues and leaders support their willingness rather than only focusing on results, they will feel a sense of belonging to the team, and they will be more willing to try new things, less afraid of making mistakes.

Interviewer: Does your tolerance for failure also have an impact?

PM1: Personally, I have a high tolerance for innovation failures. I think innovation failure is common. As long as you have the awareness and idea for innovation, that's a good thing, even if you fail, it doesn't matter. I've always been conveying this idea to our team members. The higher tolerance, the higher team members' enthusiasm. Another point is that the higher tolerance, the less worried the team members are about making mistakes, the bolder they are in innovating, and they will come up with more ideas, often resulting in unexpected outcomes.

Interviewer: How does knowledge sharing and communication among team members help?

PM1: When team members share their different ideas, it can inspire other members. It started with one member's idea, and after it was presented, everyone generally agreed with it. The team then supplemented this idea from various aspects, ultimately arriving at a more comprehensive project plan, and we exceeded our project goals.

Interviewer: When disagreements or conflicts arise within the team, does collaboration help resolve them?

PM1: It can be quite effective in resolving some disagreements. I think it has a positive impact on innovation. Everyone can recognize the shortcomings of their own ideas and pay attention to those aspects next time.

Interviewer: Do you know the theory of transformational leadership?

PM1: I can't explain its details, but I roughly understand it.

Interviewer: Do you use transformational leadership behaviors to encourage innovation among team members?

PM1: I think the most obvious example is that I don't put myself in a superior position. I take myself as equal to them. I don't use my power to make them obey me, but make they respect me through my character and abilities in our daily interactions. So, I usually progress with them together. I let them know that innovating is beneficial to their long-term development, and over time, they become more willing to innovate. Rather than direct encouragement, I let them know the advantages and benefits, so that they genuinely want to do it.

Interviewer: How do you resolve situations where an employee's ideas conflict with existing plans?

PM1: Generally, when this happens, I'll talk with him. First, I acknowledge and thank him for his ideas, then clearly explain that their ideas conflict with the current project plan. Of course, I'll tell the reason, which helps them generate innovative ideas later and makes them more receptive to the discussion.

Interviewer: Do you provide different levels of innovation decision-making authority to your team members based on their abilities?

PM1: Yes, because everyone has different abilities, so personalized management is definitely necessary. Of course, we assign different decisions based on their individual characteristics and strengths. First, we clearly define what decisions employees at different levels can make, preventing them from surpassing their superiors. Then, we clarify what must be done and what absolutely cannot be done.

Interviewer: What is the biggest challenge you've faced in managing the team member's innovativeness, and how did you solve it?

PM1: Some employees might not understand what they can do and what they cannot do. I later reflected that we probably didn't have a clear plan to let employees know which areas they could freely explore. The solution was to establish rules.

Interviewer: What advice do you have for other project managers who want to improve managing the team member's innovativeness

PM1: I hope everyone puts more effort into creating personalized plans based on the different personalities of each team member. This will ensure that projects are completed better. Also, give them more encouragement. And I don't have any other suggestions for now.

Annex 2 Interview Question Form

Themes	Questions
Project Managers' Understanding of Team Members' Innovativeness	Q1: How to define three key aspects of team members' innovativeness? (1) Exploring new directions (2) Optimizing existing methods (3) Innovating under resource constraints.
	Q2: What are the differences among these three aspects of team members' innovativeness?
	Q3: How to evaluate a team member's innovativeness?
	Q4: What aspect of innovativeness do you focus on most? And why?
The Impact of Team Members' Innovativeness on Project Implementation	Q5: How does team members' innovativeness impact project implementation?
	Q6: What are the difficulties in implementing innovative ideas?
	Q7: How to judge whether an innovative behavior or idea has really improved project implementation
	Q8: Do different aspects of team members' innovativeness have different impact on project implementation? Which one is more effective?
The Impact of Team Members' Innovativeness on Project Success	Q9: How to evaluate project success?
	Q10: How does team members' innovativeness support project success?
	Q11: Can project failures be related to the lack of innovativeness from team members?
	Q12: Do different aspects of innovativeness contribute

	differently to various dimensions of project success?
The Role of Organizational Support, Work Environment, and Team Collaboration	Q13: How does organization provide supports for team members' innovativeness? And How do organizational supports affect team members' innovativeness?
	Q14: How does psychological safety affect team members' innovativeness?
	Q15: How does failure tolerance affect team members' innovativeness?
	Q16: How does team collaboration affect team members' innovativeness?
The Role of Project Managers' Transformational Leadership Behaviors	Q17: What transformational leadership behaviors do you use in managing team members' innovativeness?
	Q18: How to solve conflicts between innovative idea with the original project plan by transformational leadership behaviors?
	Q19: How to appropriately grant team members autonomy in innovation?
Difficulties and Recommendations in Managing Teams' Innovativeness	Q20: What is the challenge in managing teams' innovativeness? How can challenges related to managing the team's innovativeness be resolved?
	Q21: What suggestions do you have for other project managers who want to improve their team members' innovativeness?