Journal of Policy Options · RESDO

Agile versus Traditional Project Management: Adapting to Complexity and Uncertainty in Modern Organisations

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Abstract

In an increasingly dynamic and interconnected business environment, project managers are required to respond rapidly and effectively to evolving uncertainties, technological disruptions, and emerging opportunities. Within this context, flexible project management systems have become essential for ensuring timely decision-making, continuous learning, and sustained project success. This study provides a comprehensive examination of Agile project management in comparison with traditional project management approaches, with particular attention to their underlying philosophies, operational mechanisms, and practical relevance in contemporary settings. Agile methodologies emphasise iterative development, decentralised decision-making, and continuous stakeholder engagement, enabling teams to adapt quickly to changing requirements. In contrast, conventional methods typically rely on structured planning, sequential execution, and centralised control, which may limit responsiveness in complex and uncertain environments. By analysing both historical evolution and current applicability, the study highlights how Agile practices support the distribution of responsibility and initiative across teams, fostering innovation, accountability, and resilience. The research further underscores that as project complexity and unpredictability continue to increase in the modern economy, Agile frameworks offer a more effective means of managing uncertainty while maintaining alignment with organisational objectives. The findings suggest that Agile project management is particularly well-suited for knowledge-driven industries, where flexibility, collaboration, and rapid adaptation are critical success factors. This study contributes to the existing body of knowledge by clarifying the comparative advantages of Agile over traditional approaches and by demonstrating its relevance for modern project execution. It also provides practical insights for organisations seeking to enhance performance by adopting adaptive project management frameworks that better align with contemporary business challenges.

Keywords: *Agile Project Management, Traditional Project Management, Organisational Flexibility, Project Performance*

JEL Codes: *M11, O32, D23, C38*

Article's History
Received: 25th February 2026
Revised: 17th March 2026
Accepted: 30th March 2026
Published: 31st March 2026

Citation:
Ernesto, J. (2026). Agile versus Traditional Project Management: Adapting to Complexity and Uncertainty in Modern Organizations. *Journal of Policy Options*, 9(1), 55-65.

DOI:
https://doi.org/10.5281/zenodo.22002521

1. INTRODUCTION

Due to changing technologies, growing competition, brevity of product life cycles, and ever-changing expectations of stakeholders, project management has become more and more important in organisations. Today, projects are not restricted to predictable and stable operating environments, but many organisations are forced to carry out projects in which the goals, the technology, the resources and external factors can shift through the process (Adi et al., 2026). Project management has therefore shifted from merely a scheduling, budgeting and control phenomenon to one that is more broadly concerned with organisational learning and adaptability, knowledge integration and responsiveness. This will be highlighted by the evolution of project management over time, which shows a shift from more or less standard models to ones that take into account the contextual and organisational nature of specific projects (Garel, 2013; Canciglieri et al., 2026). This shift has raised a basic question about the applicability of traditional project management approaches in situations where uncertainty and complexity are commonplace. Organisations have traditionally been provided with

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structured ways to plan and manage the activities of a project through traditional methods of project management. There are some indications that project management practices are different depending on the project conditions, project nature and needs, and organisational conditions (Besner & Hobbs, 2008; Arhinful et al., 2026). This contextual dimension is especially relevant when projects have fluctuating needs, incomplete information, or unforeseen demands from stakeholders. This has led to the emergence of greater interest in more flexible ways of doing projects. It is a development of agile project management, which was introduced in software development and knowledge-intensive environments where it was not always possible to specify requirements thoroughly beforehand. Agile focuses on incremental delivery, continuous adjustment, iterative development and frequent feedback, rather than the original project plan being a set-in-stone blueprint. Agile development is therefore not only characterised by different techniques, but also by a different way of managing uncertainty, learning and coordination. The concept of Agile software development includes adaptability, iteration, customer engagement and responsiveness as key aspects (Dingsøyr et al., 2010; Ebrahim & Karim, 2025; Farooq et al., 2026; Al-Oran et al., 2026).

Comparative research further shows that Agile methods have different practices, and different organisations can choose and mix practices based on the specific situation of a particular project (Abrahamsson et al., 2010; Akhtar & Aftab, 2026). This focus on adaptation also shifts the balance of power in project teams. Traditional management methods often heavily depend on formal management coordination, while Agile methods empower teams to make more decisions and solve problems on their own. This decentralisation is especially pertinent when decisions need to be made quickly, and information is spread out among team members, not in one hierarchical leader. The agile project management approach therefore focuses on guiding a distributed initiative, where teams can adapt to changing environments rather than sitting around waiting for broad-based sign-off in a hierarchy (Augustine et al, 2005; Jaber, 2026). This flexibility in organisation can be a key element of resiliency in the event of project-related unexpected technical, market, or stakeholder challenges. The effectiveness of such flexibility, however, relies heavily on the ability of teams to communicate, coordinate and create a common knowledge. Project teams are social and knowledge-producing systems in which the performance depends on the patterns of interaction, coordination mechanisms, leadership and collective problem solving. The study of team effectiveness shows that team effectiveness is based on many different factors, not only technical, but on a set of interrelated factors (Cohen & Bailey, 1997; Al-Ayed et al., 2025).

In software development, knowledge management is also particularly important, as project participants need to gather, share, store and utilise knowledge during the project's life cycle (Bjørnson & Dingsøyr, 2008; Haque, 2025). Agile practices reinforce this process by providing regular opportunities to reflect, provide feedback, and make adjustments, which tie project work with organisational learning. This is especially important when project teams need to continuously re-interpret information and not just follow written instructions. The difference between ‘traditional' and ‘Agile' ways of working can also be facilitated by understanding organisational learning. Project teams need to be able to review past decisions, detect gaps, and adjust future decisions when working in volatile environments. Learning is therefore integrated with the project and not just happening at the end of the project. Reflective practices make it easier for professionals to question their assumptions and decisions, which helps them to respond better in future situations (Dybå et al., 2014; Aboodi, 2025; Naseer et al., 2026; Ahmed et al., 2026). In the same way, post-project reviews offer opportunities for organisations to turn experiences from projects into general knowledge and organisational enhancements that can be used again in other projects (Dingsøyr, 2005; Alshalfan et al., 2026). These learning mechanisms serve to strengthen the principle of Agile: project performance can be improved through a series of cycles of action, feedback, reflection and adaptation (Nerur & Balijepally, 2007). The relevance and importance of adaptive methods in the context of modern software project management (SPM) have also been demonstrated by recent empirical studies on Scrum and other Agile methodologies (Rasool et al., 2023; Stavar, 2025; Karim et al., 2026; Ali et al., 2026). In such a complex organisational environment, the comparative study of project management philosophy is therefore important both practically and theoretically. This research compares Agile and traditional project management methodologies in their ability to meet the challenges of complexity, uncertainty, adaptability, collaboration and project performance in today's work environment.

2. LITERATURE REVIEW

Development of project management is an illustration of a greater change in an organisation's attitude towards planning, coordinating and controlling. The first-generation project management models were more often linked to structured planning and standard procedures, with activities proceeding sequentially and formal control being applied. These qualities were suitable for projects where project goals and project conditions were reasonably predictable. But what makes today's organisations more interesting is their tendency to embark on projects that entail technological change, changing customer needs, complex stakeholder dynamics, and fuzzy implementation environments. This shift has led to a shift from general prescriptions for project management to methods that take into account variations in project context, organisational structure, and environmental complexity. The history of project management models shows that the discipline has been evolving from relatively rigid pre-models to more formalised and standardised models which provide a benchmark for newer adaptive models (Garel, 2013; Saidi & Bakhkhat, 2025; Saleem & Audi, 2026; Kumar, 2026).

Traditional project management is still relevant in that it can provide a structured approach to project planning that can create clear responsibilities, requirements for resources, milestones, budgets, and performance expectations. These methods offer a level of predictability and a formalised method for tracking deviations from the plan for an organisation. But they could have a significant impact depending on the project and the environment. Project management practices are not universally applied in any organisation; they vary depending on the project attributes, organisational environments and management needs. This internal view goes against the idea that one project management method will work best in

all situations (Besner & Hobbs, 2008). Agile development, as a foundational overview, is a process that focuses on iterative development and responsiveness, and that acknowledges the variety of practices within the Agile paradigm (Dingsøyr et al., 2010; Shaukat et al., 2025; Yeung & Chung, 2025; Rebelo, 2025; Hussain & Ali, 2026; Sohail, 2026). When considering Agile and traditional project management, it is important to note that there are many different types of Agile methodologies. Agile cannot be seen as one cookbook recipe since various Agile methods use various mixes of practices, roles, iteration structures, and coordination mechanisms. Comparative studies of Agile software development methods have shown that the methods are quite different from each other, and have also laid out principles common to flexibility, customer involvement, iterative development and responsiveness (Abrahamsson et al., 2010; Rehman & Chowdhury, 2025; Kar et al., 2026). A principle of Agile project management is to "steer from the edges", which involves spreading responsibility and initiative among project teams instead of having it all in the manager's hands (Augustine et al., 2005).

Studies with organisational teams have shown that there are several facets of organisational team structure and functioning that affect team performance, such as interpersonal processes and task-related coordination (Cohen & Bailey, 1997). It's an insight that is directly applicable to the Agile setting, as iterative work involves a lot of interaction between team members. Agile therefore emphasises more on collaboration, communication and shared responsibility than on mainly hierarchical coordination. Another significant way in which Agile practices can deal with complexity is through knowledge management. Specialised knowledge is often spread across multiple people and organisational components of modern projects. There is always a need to learn more, share knowledge, combine knowledge, and remember knowledge in software development, since the requirements and solution of the project may be changing during its implementation. According to a systematic study of knowledge management in software engineering (Bjørnson & Dingsøyr, 2008), knowledge sharing, organisational learning and knowledge utilisation are key aspects of software project environments.

The systematic post-mortem process can be used to extract lessons from the project and what went wrong or right with it, and those lessons can be applied to future projects (Dingsøyr, 2005; Dek & Ibrahim, 2025). Thus, effectiveness in project management may be influenced by an organisation's ability to learn from the implementation as well as its initial planning. A more general theoretical basis for the distinction is offered by the concept of organisational learning. Organisations dealing with uncertainty need to be able to adjust their working practices, understand feedback and change their beliefs when evidence suggests that current working methods are not effective. Organisational learning is more about changes in organisational knowledge and practice, rather than the mere gathering of information. Argyris (1996) points to the need for organisational learning processes that involve questioning and reflecting on current practices and assumptions. This mindset is very suitable for agile project management because the iterative nature of agile development offers multiple chances for the teams to review their decisions, seek feedback, and adjust their future actions. Another look at adaptive project management is improvisation. Sometimes project teams find themselves in a situation where they have to create solutions that are not outlined in the initial plan due to incomplete information and evolving conditions. Small software companies are presented as an example of the need for improvisation when formal planning is not possible to ensure that all the issues that arise are fully covered (Dybå, 2000; Reich & Reich, 2025).

The reflective software engineer is a concept that highlights reflection as a professional attribute in order to enable software professionals to learn from practices instead of just following the rules (Dybå et al., 2014). This principle is complementary to an agile team's iterative approach and ensures action is being taken in the context of ongoing evaluation and learning. Empirical research on agile team performance has also been undertaken. Focus group studies with Agile development teams reveal that the performance of a team depends on how each member interacts, collaborates, coordinates and works together (Dingsøyr & Lindsjørn, 2013; Shaukat et al., 2025; Abbas & Uddin, 2025). The results of this study support the case that the effectiveness of Agile cannot be achieved simply by following formal Agile ceremonies or using Agile terminology, but the ability of teams to work well together is created by the conditions established in the organisation. Therefore, the difference between Agile and traditional methods and approaches needs to be comprehended at both the methodological and organisational level. If Agile decision-making is too centralised or if there is poor communication between team members, then an organisation cannot truly be Agile. Another example of the change from centralised expertise to distributed knowledge is with team-based estimation. In agile environments, experts may have a variety of technical and contextual knowledge. The ability to combine these viewpoints into project planning, rather than having it from one manager or specialist, is called collaborative estimation (Ullah et al., 2025; Prica & Bjelic, 2025; Rana, 2025).

Redundancy of knowledge can also make the organisation more resilient. Knowledge sharing and job rotation can also help lower too-reliant on a single specialist and increase the organisational capacity to adapt to changes in the project or among team members. Studies of knowledge redundancy practices with respect to software development suggest that job rotation may be a means for sharing knowledge and increasing the knowledge base of the organisation (Fægri et al., 2010; Plonsky & Herber, 2025). The escalation of commitment has shown that people and groups may persist in supporting actions or courses of action after the facts suggest that they are the wrong ones to take or that they are wrong (Bazerman et al., 1984; Novak-Rantala, 2026). However, iterative project management may be able to lessen this issue by providing opportunities to reassess priorities and results on a regular basis. When teams have a high degree of autonomy, alignment with project decisions and organisational goals continues to be important. In case-based research on software project decisions, it is argued that software project decisions need to be matched with organisational priorities (Aurum et al., 2006; Celik, 2021; Das et al., 2026). This doesn't mean that the flexibility in Agile is a total lack of accountability, but rather that decision-making is made adaptively and linked to strategic goals and stakeholder expectations. Another way to assess the impact of agile practices on organisational responsiveness is to consider team autonomy and the work

organisation of teams. In the past, the organisational model of project work focused on the involvement of organisational structure and the allocation of project tasks. Thus, work organisation affects communication, coordination and managerial control (Constantine, 1993; Yadav et al., 2025).

Technological uncertainty, changing requirements and specialist expertise are often elements of software projects. The theoretical difference between the methodologies derived from predictive planning and methodologies based on adaptability and iterative learning has been a key focus of research in the field of Agile development (Nerur & Balijepally, 2007; Tan et al., 2026). The distinction is not just related to software development, as other knowledge-intensive projects are increasingly faced with similar uncertainties. Project management systems in such environments may therefore require systems to accommodate changes in information without compromising strategic control. New studies also illustrate the ongoing importance of Agile methodologies in today's software project management. Given that there is increased organisational interest in iterative and adaptive approaches, Scrum, along with its associated practices, has received examination related to its role in software project management (Rasool et al., 2023; Hashmi et al., 2025; Luftman et al., 2026).

Advancements in computational and intelligent technologies are impacting the way information is processed, and decisions are made within organisations. As a case in point, the methodological progress in sentiment classification represents the use of intelligent analytical methods to draw meaningful insights from complex data environments (Azam et al., 2021). While these tools are not project management processes in their own right, they do accord with the overall trend of technology-driven decision-making within the organisation. As project managers are more commonly faced with environments that create information at a high rate and require it to be rapidly interpreted, the importance of adaptive management systems is growing. The study of advanced technological and experimental applications provides an example of the growing demand for specialised knowledge, technical uncertainty and changing implementation needs to be coordinated in organisations. This makes it even more compelling to use project management methods that can facilitate incremental learning and inter-team collaboration. It is therefore not just a problem of traditional software projects but also applies to complex innovation-oriented projects in which knowledge is created and developed in the process of project execution. Thus, this study makes a comparative analysis of Agile and traditional project management considering the increased complexity and uncertainty of present-day organisations.

3. NEW PROJECT MANAGEMENT THEORIES

Today's projects are more complex and uncertain, inspiring a move toward more adaptive project management. The focus of traditional models is on the need to be advanced, sequential, centralised and controlled, but such models are less effective in addressing the requirements, technology, information and stakeholder expectations when these are rapidly changing. This has led to an increased awareness in the project management field about adapting practices to organisational and environmental contexts (Besner & Hobbs, 2008). Agile project management offers an alternative to predictive planning by seeing that project requirements and solutions are constantly changing throughout the project's lifecycle. The work is conducted iteratively, and as teams receive new information, they can prioritize and rearrassess and then proceed with the work. Agile approaches focus on iteration, responsiveness, interaction with stakeholders and incremental delivery (Dingsøyr et al., 2010; Sabir et al., 2025). Agile is actually a way of coordinating, not just a set of tools, because knowledge is built step-by-step through the coordination of participants and stakeholders in a project. Comparative research showed that the various Agile methodologies are all based on adaptability, incremental development and responsiveness to change factors (Abrahamsson et al., 2010). Another aspect of Agile is the sharing of responsibility among project teams. The Agile approach is not just about making decisions in formal managerial roles, but it's more about involving the team in planning, prioritisation, problem solving, and doing. This puts decision-making in the hands of people with the relevant operational knowledge and can speed up the reaction time to the new problem (Augustine et al., 2005). Agile also places a large emphasis on value creation by measuring progress based on how valuable delivered outcomes are, instead of following an original plan. This moves the project away from management and towards meeting the needs of stakeholders, delivering outcomes and continual improvement. Agile practices implement these principles by breaking work into small cycles, keeping processes simple, delivering increments, getting feedback quickly, and reviewing often. They are highly dependent on collaboration and coordination in project groups (Dingsøyr & Lindsjørn, 2013). Iterative cycles can account for experience in future decisions, and continuous stakeholder feedback can preempt any misconceptions, technical issues, or evolving needs that could prove to be expensive. The concept of reflective practice is also beneficial for learning, as it helps project participants systematically reflect on decisions and experiences (Dybå et al., 2014). Knowledge management is thus a core issue of adaptive project management. When a project is implemented, information is produced that can not always be known in the initial planning stage. Thus, mechanisms must be in place for knowledge acquisition, sharing, integration and application (Bjørnson & Dingsøyr, 2008). Communication and group problem solving are all part of the Agile approach, which helps with this knowledge flow. Unexpected outcomes and errors are also turned into organisational learning through retrospectives, and the lessons gained from the finished projects are structured through post-mortem practices (Dingsøyr, 2005). Not planning is not the same as not doing planning – in Agile it is different. Progressive elaboration enables activities in the near-term to be planned in detail, yet provides flexibility for future activities. Knowledge distributed between different members of the project team can also be incorporated into collaborative estimation to enhance the planning (Fægri, 2010). Likewise, there is the possibility of knowledge redundancy and job rotation, which helps prevent reliance on specialist staff members and builds organisational flexibility by enabling the transfer of knowledge (Fægri et al., 2010). The chain of Agile theoretical development is part of a wider trend of context-sensitive project management. While earlier models continue

to be useful for formal planning and control, in today's context, a balance between predictability and adaptability is increasingly necessary (Garel, 2013). Agile shouldn't, therefore, be regarded as universally better than predictive methods. Traditional methods are still applicable in cases where the requirements are constant, there is extensive regulatory documentation, technological uncertainty is limited, and processes are well known. The primary challenge is the methodological fit; management practices are chosen depending on project conditions (Besner & Hobbs, 2008). Agile is especially useful for projects that involve knowledge or are innovative, where the solution may not be exactly known from the start. Experiments and consultation with stakeholders may be more suitable for decision-making than over-relying on initial specifications. Thus, agile scholarship stands in opposition to traditional notions of control, coordination and sequential development (Nerur & Balijepally, 2007; Rasool et al., 2023).

4. PATTERNS FOR ORGANIZATION AND PROJECT MANAGEMENT

Today's projects are more complex and uncertain, inspiring a move toward more adaptive project management. The focus on traditional models is on the need to be advanced, sequential, centralised and controlled, but such models are less effective in addressing the requirements, technology, information and stakeholder expectations when these are rapidly changing. This has led to an increased awareness in the project management field about adapting practices to organisational and environmental contexts (Besner & Hobbs, 2008). Agile project management offers an alternative to predictive planning by seeing that project requirements and solutions are constantly changing throughout the project's lifecycle. The work is conducted iteratively, and as teams receive new information, they can prioritize and rearrassess and then proceed with the work. Agile approaches focus on iteration, responsiveness, interaction with stakeholders and incremental delivery (Dingsøyr et al., 2010). Agile is actually a way of coordinating and not just a set of tools, because knowledge is built step-by-step by the coordination of participants and stakeholders in a project. Comparative research showed that the various Agile methodologies are all based on adaptability, incremental development and responsiveness to change factors (Abrahamsson et al., 2010). Another aspect of Agile is the sharing of responsibility among project teams. The Agile approach is not just about making decisions in formal managerial roles, but it's more about involving the team in planning, prioritisation, problem solving, and doing. This puts decision-making in the hands of people with the relevant operational knowledge and can speed up the reaction time to the new problem (Augustine et al., 2005).

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However, the structured or linear approach is still an important element in the project management continuum. It is based on a series of phases, defined activities and significant pre-work. Thus, it is well suited to projects for which project goals, the technical solution, the performance specification, and the implementation process are known. The predictability of this can be useful for routine and repetitive projects, where the manager can better know the resources, schedules, and responsibilities, as well as the deliverables, to be expected. Careful planning at the outset also aids budgeting, allocation, scheduling and managerial control, which in turn improves administrative control. Linear project management can still be useful in situations where project requirements are relatively predictable and can be anticipated in advance (Besner & Hobbs, 2008). But the benefits of a linear approach can turn into constraints in complex and uncertain environments.

Relying on a plan that isn't flexible enough to respond to new needs, expectations, technologies, or external factors could limit the ability to adjust plans as needs evolve. Any changes required to the plan may impact interdependent activities, resulting in higher costs and longer implementation timelines, and too much focus on plan adherence can be distracting from whether the project is still providing value to stakeholders. Thus, organisations need to evaluate whether the predictability of linear management is more valuable than the lack of flexibility in specific project situations (Besner & Hobbs, 2008).

Table 1: Possible Outcomes of a Project Based on the Degree of Uncertainty Surrounding

Strategy	Goal clarity	Solution clarity
Structured	High	High
Incremental	High	Medium
Adaptive	Low	High
Exploratory	Low	Low

Agile methods offer an alternative in circumstances where full up-front specification isn't feasible. Rather than setting the priorities and the solution in advance of implementation, Agile methods permit priorities and solutions to change and develop in an iterative manner. By providing frequent feedback, teams will be able to detect issues, re-think assumptions, and pivot resources to more valuable activities in contrast to traditional planning assumptions (Nerur & Balijepally, 2007).

5. INCREMENTAL METHODOLOGY

The incremental methodology is a step between predictive and adaptive project management. The solution is broken down into manageable stages, and each stage yields a usable piece of the overall solution, rather than the entire solution at the end of the planned activities. This facilitates planning discipline while allowing earlier stakeholder feedback and subsequent changes to the planning. The flexibility fits within the principle that project management practices need to reflect project-specific conditions (Besner & Hobbs, 2008). The incremental delivery minimises the risk of finding serious deficiencies at the end of the project and enables requirements to be rethought between the delivery steps (Abrahamsson et al., 2010). Incremental development also helps to build stakeholder engagement as users are able to interact with the new products and give information that is not available in the initial planning. This makes stakeholder participation a continuous development process, and it means that the teams can differentiate between assumptions and requirements that are validated during actual use (Dingsøyr et al., 2010). There are still incremental projects that need to be documented, planned, managed for dependencies and continually coordinated. Therefore, effective team interaction and a continued relationship with stakeholders are needed for their effectiveness (Cohen & Bailey, 1997). The elation and the disappointment of the team will allow them to re-evaluate their assumptions and adjust their next steps, following the organisational learning paradigm (Argyris, 1996). Emerging solutions can be further evaluated by stakeholders, which can help to uncover usability issues, technical constraints and areas for improvement, and reflective practice can help to enhance learning from previous decisions and experiences (Augustine et al., 2005; Dybå et al., 2014).

Just-in-time planning saves effort on activities that might be immaterial, and collaborative estimation brings in knowledge spread out amongst project specialists (Fægri, 2010). These can help to avoid the duplication of effort, focus resources on new priorities and create value for stakeholders where there is uncertainty. Exploratory or extreme project management is a further level of uncertainty, especially in research, development, innovative technologies and ambiguous problem spaces. In this case, the goal and how to accomplish it might both be found through experimentation. Progress is achieved by testing alternatives, narrowing down uncertainty and by a gradual identification of a viable solution instead of just completing certain predetermined activities. The project starts at point 0 and moves through a series of trials to the target point 10, as shown in Table 2. The understanding of how project knowledge is built through experimentation is shown in the movement through Trial 1, Trial 2, Trial 3 and the current position. With high-uncertainty projects, then, progress needs to be measured by reducing uncertainty as well as by the completion of activities, and also by the progress toward a feasible solution.

Table 2: Goal-Seeking in High-Stakes Projects

Stage	Position
Start	0
Trial 1	2
Trial 2	4
Trial 3	6
Current	8
Target	10

The exploratory approach has the benefit of maintaining an alternative solution for a longer time. It is not necessary to allocate resources to one solution before considering other solutions and determining which is most viable. It can be very

helpful in cases where initial hypotheses are not likely to be correct. However, exploratory projects involve a lot of risk as experimentation does not ensure a commercially or organizationally useful result. Significant resources may be used in the process of exploring options, which may not be viable. This is why exploratory management has greater uncertainty and failure tolerances than conventional project management approaches. The sequence of activities for each strategy can be helpful in understanding the difference between structured and exploratory methodologies. Table 3 reveals that the main variations between these approaches are not whether planning occurs or not, but where and when feedback happens in the project lifecycle. The structured strategy does not include any formal feedback loop, but rather is a process of definition, planning, execution, verification and release. Iterative management involves the iterative process of design, build, review, and release; the incremental approach adds feedback at the end of the build and verification process. Adaptive management focuses more on framing, learning and adjustment, while exploratory management involves experimentation and reframing as integral parts.

Table 3: Strategy for Managing Complicated and Variable Projects Stages

Approach	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Feedback
Structured	DEFINE	PLAN	EXECUTE	VERIFY	RELEASE	No
Incremental	DEFINE	PLAN	BUILD	VERIFY	RELEASE	Yes
Iterative	DEFINE	DESIGN	BUILD	REVIEW	RELEASE	Yes
Adaptive	FRAME	DESIGN	BUILD	LEARN	RELEASE	Yes
Exploratory	FRAME	TEST	LEARN	REVISE	RELEASE	Yes

These differences are further highlighted in the comparison of management and delivery phases of the two approaches shown in Table 4. Structured management focuses on a clear definition and in-depth planning before action, while incremental management promotes continuous building phases. Iterative management includes additional review cycles, and adaptive management includes learning and adjustment as part of delivery. Exploratory management is one step closer to experimentation and reframing, as it is possible the project itself may need to redefine its direction as new information emerges.

Table 4: Difficulty and Uncertainty in Project Management Strategies

Approach	Management phase 1	Management phase 2	Delivery phase	Control mechanism	Closure
Structured	Define	Plan	Execute	Continuous monitoring	Close
Incremental	Define	Plan	Build cycles	Continuous monitoring	Close
Iterative	Frame	Plan	Review cycles	Continuous monitoring	Close
Adaptive	Frame	Launch	Learn & adjust	Continuous monitoring	Close
Exploratory	Frame	Experiment	Reframe & test	Continuous monitoring	Close

6. COMMON THOUGHTS ON AGILE METHODS OF PROJECT MANAGEMENT

Agile project management principles are based on being responsive, working together, learning and adapting as the situation changes. Instead of a rigid set of procedures, Agile takes a more pragmatic approach to methodology, focusing on practices that benefit the project team and the value to the stakeholder. According to Augustine et al. (2005), in Agile, the responsibility and decision-making power can be spread across project teams, and Nerur and Balijepally (2007) believe that Agile represents a more profound change in the thinking behind traditional project management. One of the key takeaways is that project management processes should be responsive to the project characteristics. More documentation and formal controls do not necessarily lead to better management in complex environments and can inhibit timely decision-making. Besner and Hobbs (2008) highlight the contextual aspect of project management practices, and Abrahamsson et al. (2010) show that there is significant variation in how Agile is implemented across organisations. To be effective, methodologies must be organised enough to allow for coordination and accountability and flexible enough to accommodate new information.

The human dimension is also important. Project knowledge is frequently spread across specialists, and communication, collaboration, shared responsibility, and knowledge sharing are of paramount importance in Agile. Communication, coordination, cohesion and appropriate team structures are seen as key factors for team effectiveness (Cohen & Bailey, 1997), as are team interactions in Agile environments (Dingsøyr & Lindsjørn, 2013). Therefore, agile is not just a technical approach but an alternative way of organising people and distributing responsibility. Communication is especially crucial in situations where requirements are not well understood. Agile opens up frequent chances for stakeholders and teams to share information, challenge assumptions and adjust priorities. The knowledge created in these interactions becomes an organisational resource, and because of this, knowledge creation, sharing and application is a key factor in project performance (Bjørnson & Dingsøyr, 2008). The principles of Agile, namely incremental delivery, stakeholder participation, learning and adaptation, could be relevant to other knowledge-intensive projects, except for industry-specific structures, regulations and dependencies (Garel, 2013). Rather than being competing systems, agile and traditional project management can be considered a continuum. Traditional methods will continue to be suitable when goals and requirements are well known and likely to stay consistent, while Agile is more useful when requirements are likely to change, solutions need to be experimented with, or stakeholder needs are likely to shift. The major benefit it

provides teams is allowing them to adapt to new information iteratively and incrementally (Dingsøyr et al., 2010). This distinction also alters the role of the project manager, whose primary responsibility is no longer to tightly control the project, but to facilitate, remove obstacles, coordinate stakeholders, give decision-making autonomy to the team and ensure a project fits within the organisation's values (Augustine et al., 2005).

Team composition is therefore important, as in Agile environments, close interaction, shared responsibility, and access to complementary expertise will be beneficial. Redundancy in knowledge and rotation in jobs can lessen dependency on individual experts and enhance organisational resilience (Dingsøyr & Lindsjørn, 2013; Fægri et al., 2010). But Agile isn't always a better approach. It relies on the preparedness of the organisation, the ability of the team, the participation of stakeholders, and the nature of the project. If flexibility is not properly prioritised, accounted for, and controlled, it can lead to uncertainty, not flexibility. Agile is not about a lack of governance; it's about disciplined governance. The shift to Agile outside software development also helps to make the hybrid approach more feasible. You may need controls and some of the agile practices in a project that includes infrastructure, supply chains, and has a lot of external stakeholders, etc. Practices from multiple methodological traditions are often mixed within an organisation as a function of the context (Besner & Hobbs, 2008). Furthermore, if the Agile methodology is seen as a rigid set of ceremonies and tools, it can be harmful to its principles of flexibility and learning. It is important to consider its broader organisational implications – as pointed out by Nerur and Balijepally (2007) – and it is necessary to be reflective to enhance professional decision-making – as suggested by Dybå et al. (2014). Thus, teams, stakeholders, informed decision-making, and continuous learning are crucial if Agile is to be implemented effectively. Improvisation is mentioned as an important aspect of small software organisations by Dybå (2000), but the key to productive improvisation is knowledge and professional judgment. Agile is therefore most effectively interpreted as a disciplined principle of flexibility, where teams are given more flexibility, and they are accountable for making decisions in light of evidence. Abrahamsson et al. (2010) also show that Agile is not a monolithic methodology, thus allowing the selection and combination of practices based on the project requirements and the organisational abilities.

7. CONCLUSIONS

The comparison of Agile and traditional project management illustrates that the complexity and ambiguity of the current organisational landscape necessitate project management practices that can be flexible and undergo changes without affecting the goals of the organisation. Traditional project management has a place where project objectives, needs, resources, timelines, and outcomes can be reasonably predicted. Its formal documentation, sequential execution, and systematic monitoring and monitoring of execution provide predictability and control, especially for projects with relatively limited environmental variations and stable requirements. But these properties can also turn into limiting factors when projects face changing requirements, disruptive technology, uncertainty from stakeholders, or lack of knowledge. In response to these conditions, agile project management puts a different spin on project management, focusing on iterative development, continuous feedback, stakeholder participation, decentralised decision-making, and incremental value delivery. Agile methods instead try to define all the requirements of the project at the start, but as the project is implemented, the team gains new knowledge about the project, which can guide them to change future activities. This is especially relevant for knowledge-intensive projects where the ultimate answer is not known up front. This study suggests that Agile should be considered not only as a set of technical practices, but also as a management philosophy for adaptability and learning as well. The analysis also shows that organisational and human factors play an important role in the success of Agile project management. Agile teams need to be able to communicate, collaborate, accept responsibility, share knowledge and have some autonomy in making decisions. These are the traits that make Agile different from traditional organisations where more of the authority and project decisions are centralised. Organisations looking to implement Agile ways must build the necessary team competencies and management techniques – not just the Agile acronyms or ceremonies. In Agile, it is especially vital to reflect and learn from what happens in the teams, as it enables them to assess their practices and adapt them when needed. Concurrently, the results don't validate the concept that Agile is always superior to PM. The quality of a methodology is determined by the characteristics of the project, the capabilities of the organisation, the needs of the stakeholders, the regulatory situation and the uncertainty of the goals and solutions. Projects that have fixed requirements may still be suitable for predictive methods, as deviations can be managed with extensive planning. Agile methods gain more and more benefits when uncertainty, complexity and change frequency grow. For organisations with portfolios of projects with vastly different characteristics, a hybrid configuration may thus be the most suitable configuration. The main findings of this study indicate that successful modern project management does not call for being bound to a particular project management philosophy. In situations where flexibility, speed to learn, teamwork and responsiveness are essential, agile project management has great benefits, although traditional project management has also important mechanisms for predictability and control.

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Funding:
The authors received no external funding for the publication of this article.
Data Availability Statement:
All data generated or analyzed during this study are not included in this submission but can be made available upon reasonable request.
Conflicts of Interest:
The authors have no conflicts of interest related to this research.