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Adopting Agile Methodologies for Improved Product Management

Sunil Chahal
Concepts Information Technology Inc.
https://orcid.org/0009-0006-4594-9318

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Abstract

Purpose: The purpose of this research is to investigate the adoption of agile methodologies in the context of product management and assess their impact on product development processes, organizational culture, and overall business performance. The study aims to provide valuable insights into the challenges, benefits, and best practices associated with implementing agile practices in product management, ultimately contributing to the enhancement of product management strategies in contemporary organizations.

Methodology: Descriptive research enables the exploration of various variables, such as organizational size, industry, and cultural factors, which may influence the adoption of Agile. It allows for an in-depth analysis of these characteristics and their impact on Agile practices. Thematic analysis serves as a robust method for uncovering insights and patterns within qualitative data, allowing for a nuanced exploration of the adoption of agile methodologies in the realm of product management. It provides a systematic and transparent approach to data analysis, enabling the research to contribute valuable findings to the field.

Findings: Identification of common obstacles and challenges faced by organizations during Agile adoption, such as resistance to change, cultural alignment, and scaling Agile beyond individual teams. Recognition of the benefits of Agile, including increased product innovation, faster time-to-market, improved customer satisfaction, and enhanced adaptability to changing market conditions. Exploration of the concept of hybrid product administration systems is highlighting the advantages and disadvantages of combining Agile and traditional methodologies. The examination of the impact of Agile on fostering creativity and innovation within product development teams is done.

Unique contribution to theory, practice, and policy: The study enriches the theoretical understanding of agile implementation models, hybrid systems, and the relationship between agile practices and creativity within teams. It provides a foundation for further theoretical exploration in the field. The research offers practical recommendations for organizations seeking to adopt agile methodologies in product management, providing insights into overcoming challenges, achieving a balance in hybrid systems, and fostering a culture of collaboration and creativity. The findings have potential policy implications for regulatory bodies and governments interested in promoting agile adoption. The research suggests the need for industry-specific guidelines and government support to facilitate agile implementation and innovation.

Keywords: *Agile methodology, product management, agile adoption, hybrid systems, creativity, innovation, organizational culture, policy implications, best practices.*

Introduction

Agile methodology is an approach to project management that includes breaking the project into aspects and foregrounding continuous improvement and collaboration. Teams conform to a cycle of executing, planning, and evaluating. Agile is not effective without a long-range goal and range. As per the view of López-Alcarria et al. (2019), Agile mainly breaks notable initiatives down into tiny components, fulfilling those quickly and efficiently. Agile methodologies aim at delivering usefulness to the customers quickly. This refers to the fact that managers of projects need to aim at customers closely to understand the needs of the customers.

Background information

In today's dynamic and rapidly evolving business landscape, the traditional approaches to product management and development are facing unprecedented challenges. To address these challenges, organizations are increasingly turning to agile methodologies as a means to improve their product management processes (Julian *et al.* 2019). This background information explores the evolution, principles, and benefits of adopting agile methodologies in the realm of product management. The concept of Agile methodologies traces its origins to the early 2000s when a group of software developers came together to address the limitations of traditional software development approaches. This gathering led to the creation of the Agile Manifesto in 2001, a foundational document that articulated the values and principles of agile development (Zasa *et al.* 2020). The manifesto emphasized individuals and interactions, working solutions, customer collaboration, and responding to change over processes and tools and comprehensive documentation.

Prior to the emergence of Agile, the Waterfall model was the dominant approach to software development. Waterfall was characterized by a sequential and linear process, where each phase of development had to be completed before moving on to the next. This approach often resulted in lengthy development cycles, limited customer involvement, and difficulties in accommodating changing requirements. One manager of Agile is collecting reviews early and frequently to make sure the products provide the projected advantages to the users (Locatelli *et al.* 2023). This methodology is effective as it understands that the process of product development is not linear, it develops frameworks that enable them to successfully respond to risk, change, and uncertainty. As per the concern of Hayat et al. (2019), to adopt the agile methodology, we need to develop collaboration among the members of the project, stakeholders, and customers. To effectively adapt to agile, everyone needs to board before starting. In addition, communicated with the key players of markets, stated the agile fulfilled, and fulfilled their concerns.

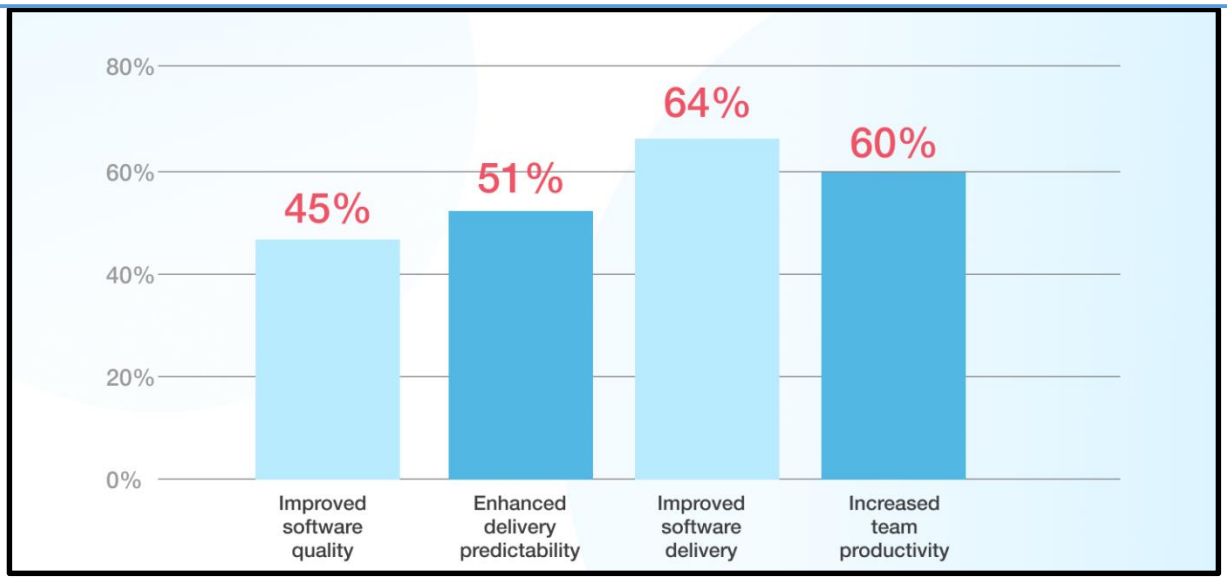

Figure 1: Benefits of adopting agile methodology.

(Source: influenced by Hayat et al. 2019)

The above graph represents the advantages of using the agile methodology to enhance the management of products. It has been identified in the graph that 45% of the software quality has been improved and 51% chances to increase the delivery predictability of the products (Gerster *et al.* 2019). Furthermore, the delivery of the software has been enhanced by 64% and the 60% productivity of the team also increased.

Problem Statement

The adoption of Agile methodologies for improved product management is a crucial strategy for businesses in today's rapidly changing market environment. However, to effectively implement Agile practices, organizations often face various challenges and obstacles that need to be addressed. This problem statement highlights the key issues and concerns related to adopting Agile methodologies in product management (Amorim *et al.* 2021). Many organizations recognize the benefits of Agile methodologies in improving their product management processes, including faster time-to-market, enhanced product quality, and increased customer satisfaction. Nevertheless, the successful adoption of Agile is not without its challenges.

One of the foremost challenges is resistance to change within the organization. Employees and stakeholders who are accustomed to traditional project management approaches may be reluctant to embrace Agile practices (Mergel *et al.* 2021). This resistance can hinder the effective implementation of Agile methodologies. Implementing Agile requires a deep understanding of its principles and practices. Many organizations lack the necessary in-house expertise and struggle to find or train Agile coaches and Scrum masters who can guide teams in adopting Agile effectively. Agile methodologies demand a significant cultural shift within an organization. Traditional

hierarchical structures and command-and-control management styles may not align with the collaborative and self-organizing nature of Agile teams (Khoza and Marnewick, 2021). Changing the organizational culture to support Agile values can be a complex and time-consuming process.

Integrating Agile practices with existing project management and product development processes can be challenging. Organizations must find ways to harmonize Agile with other methodologies or frameworks they may be using, such as Waterfall or DevOps. In some cases, organizations adopt Agile practices selectively, leading to incomplete adoption (Al-Saqqa *et al.* 2020). This fragmented approach can result in mixed methodologies and inconsistent outcomes, making it difficult to realize the full benefits of Agile. While Agile methodologies are typically well-suited for small teams and projects, scaling Agile to larger enterprises or complex products can be challenging. Ensuring alignment and coordination across multiple Agile teams and maintaining consistency becomes a significant concern (Gerster *et al.* 2020). Traditional metrics for project management may not be suitable for Agile projects. Organizations struggle to define and measure success in Agile terms, which can make it challenging to demonstrate the value of Agile adoption to stakeholders.

Allocating resources, including personnel and budget, to Agile initiatives can be a complex task. Organizations may grapple with how to allocate resources effectively between Agile and non-Agile projects. Sustaining Agile practices beyond the initial adoption phase is essential for long-term success. Organizations must find ways to maintain the Agile mindset, prevent regression to old habits, and continuously improve Agile processes (Almeida *et al.* 2020). Adopting Agile may require new tools and technology to support Agile practices, such as collaborative software, project management tools, and communication platforms. Choosing and implementing these tools can be a challenge.

While Agile methodologies offer significant benefits for improved product management, organizations encounter various challenges related to resistance to change, cultural shifts, lack of expertise, and the need to integrate Agile with existing processes (Salvato and Laplume, 2020). Addressing these issues is essential for successful Agile adoption and realizing the full potential of Agile methodologies in product management.

Research Aim

The ultimate aim of the research is to adopt an “agile methodology” to enhance the management of products.

Research Objectives

- To understand the typical obstacles to implementing Agile management of products, and how may these obstacles be successfully overcome.
- To analyze the advantages and disadvantages of hybrid product administration systems, and how can businesses achieve the proper balance.

- To evaluate in what ways does Agile promote or stifle creation in creation of products, and what tactics can businesses employ to encourage creativity within Agile groups of people.
- To discuss the rules and restrictions that are specific to a certain industry affect the uptake and achievement of Agile in item administration.

Research Questions

1. What are the common challenges in transitioning to Agile product management, and how can these challenges be effectively addressed?
2. What are the benefits and drawbacks of hybrid approaches in product management, and how can organizations strike the right balance?
3. How does Agile support or hinder innovation in product development, and what strategies can organizations use to foster innovation within Agile teams?
4. How do industry-specific regulations and constraints impact the adoption and success of Agile in product management?

Literature review

Framework of Agile Methodology to Boost Product Management

Agile is the vital term for a wide range of techniques and methodologies, sharing concepts and describing their value. The highly used frameworks of agile are Scrum, Hybrid, Kanban, XP, and Bimodal.

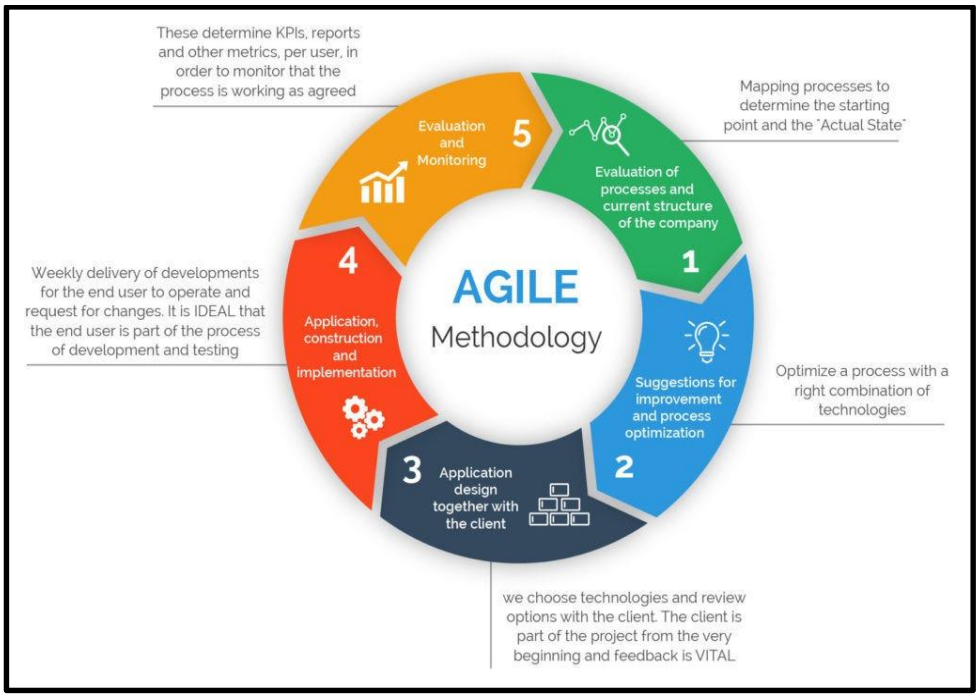

Figure 2 Framework of Agile Product Management

(Source: influenced by Al-Saqqa et al. 2020)

The above figure describes the framework that has been used in product management with the help of agile methodology. This framework includes the following components:

Scrum: It is the framework focused on the philosophy of agile for continuous enhancement that provides things done. It begins with the presumption that the team should learn more and be engaged to develop the product on time. According to Al-Saqqa et al. (2020), The main feature of this framework is that the whole work scope is divided into tiny development cycles and the duration of the sprint is from a weak to four weak. In addition, the group needs to follow the work plan strictly for every sprint (Locatelli *et al.* 2023). Besides, the employees engaged in the project have some major roles which are predefined. This methodology has been highly used by 58% of organizations while another 18% of the organizations joined it with some other techniques.

Kanban: Kanban is a framework of production that supports learning agile management of products. As per the view of Zorzetti, et al. (2022), It was made by Toyota" to enhance the efficiency of manufacturing. It runs the six principles that never pass defective products. The second is clasp only which is required and the developed the required quantity. In addition, the product level should be enhanced. The fifth principle is to fine-tune the production and the last is to rationalize and stabilize.

Advantages of using the agile methodology in product management improvement

Product management in agile increases the whole process of product development flexibility. As per the software development through the traditional method, the need list is provided to the developers, and there have been no further changes made. Apart from this delaying the delivery of software increases the risk of failure because of the lack of communication through indirect communication between the users and developers. As per the view of Alshurideh et al. (2023), The product becomes victorious when it has been liked by the customers. Agile management of product evaluates the characteristics that have been developed by the continuous learning front of the clients. This can be possible through direct and indirect feedback from customers.

In addition, it helps to continually adjust the roadmaps short-term to fulfill the needs of the customers (Locatelli *et al.* 2023). Then customers have a requirement they want immediate givers. This puts high pressure on product managers to deliver the required features to fulfill those needs.

Balancing Theory

This theory was developed by "Fritz Heider" and provides a high range of negative or positive psychosocial relationships among networks and individuals of many relationships. It is the responsibility of the product managers to ensure that the developed products are achievable and feasible within the range of the actual world. As per the concern of Fernandes, et al. (2021), the product leader must be attainable with the available resources that the group has at the end.

Managers of products also consider the demands of the customer and develop strategies to fulfill them.

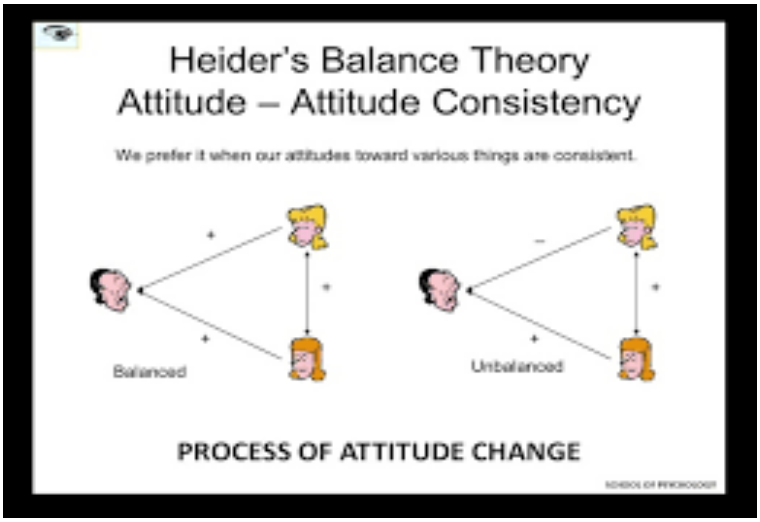

Figure 3: Components of Agile methodology

(Source: Influenced by, Fernandes, et al. 2021)

The above figure demonstrates that there is a need to develop a balance between the customer, employees, and the stakeholders to improve the management process for the product. The head of product needs to implement groundbreaking ideas, and innovativeness that will enhance the features of the product (Müller & Klein, 2018). However, managers are required to be realistic about what provides advantages and what can be achievable.

Relevance of the theories

The adoption of Agile methodologies for improved product management is highly relevant in the context of today's fast-paced and ever-changing business landscape (Cooper and Sommer, 2020). Several management and organizational theories underscore the significance of Agile practices in enhancing product management processes.

Innovation Theory: Agile methodologies align with the concept of continuous innovation. By allowing for rapid iterations and frequent customer feedback, Agile fosters an environment where innovation can thrive (Almeida and Espinheira, 2021). Organizations can adapt to emerging market trends, technologies, and customer preferences more effectively, thereby staying competitive.

Systems Theory: Systems theory emphasizes the interconnectedness of various components within an organization. Agile methodologies promote cross-functional collaboration and holistic approaches to problem-solving (Alzoubi *et al.* 2022). Agile teams work as interconnected systems, optimizing the entire product management process.

Theory of Constraints: Agile helps identify and alleviate bottlenecks or constraints in product development. By focusing on delivering value incrementally and addressing impediments promptly, Agile enables organizations to enhance their product management process's flow and efficiency.

Organizational Learning Theory: Agile encourages a culture of continuous learning and improvement. Teams reflect on their practices at the end of each iteration, fostering a mindset of adaptive learning (Malik *et al.* 2019). This aligns with the theory of organizational learning, where organizations that adapt and learn faster are more likely to succeed.

Display of research gaps

As organizations increasingly recognize the potential benefits of adopting Agile methodologies for product management, a growing body of research has emerged in this domain. However, several research gaps persist, offering opportunities for further exploration and inquiry. While many studies have explored the advantages of Agile adoption, there is a need for in-depth investigations into the challenges and obstacles organizations face during Agile implementation. Agile methodologies often require a cultural shift within organizations to promote collaboration, autonomy, and transparency. Research can delve deeper into the cultural aspects of Agile adoption, examining how different organizational cultures impact the successful implementation of Agile practices (Ewel, 2020). As organizations scale Agile practices to manage complex products or multiple teams, new challenges emerge. Research can explore strategies for scaling Agile effectively, the impact on product management, and the role of leadership in large-scale Agile transformations. Some organizations adopt a hybrid approach that combines Agile with other project management methodologies.

Traditional project management metrics may not align with Agile principles. Research can focus on identifying appropriate metrics for Agile product management and how performance is measured in Agile environments (Islam and Storer, 2020). Investigating the relationship between Agile methodologies and product innovation is essential. Research can delve into the application of Agile methodologies in specific industries, such as healthcare, finance, or manufacturing. Agile emphasizes customer collaboration, but the extent and methods of customer involvement can vary.

Managing a portfolio of products within an Agile framework presents unique challenges. Research can explore best practices for Agile portfolio management and the alignment of product strategies with Agile principles. The shift towards remote work has accelerated due to global events. Research can examine how Agile methodologies adapt to remote work settings, including the impact on team dynamics, communication, and product management practices (Zorzetti, *et al.* 2022). Exploring these research gaps and addressing the emerging research questions will contribute to a deeper understanding of the complexities, opportunities, and nuances of adopting Agile methodologies for improved product management. Additionally, it will provide valuable

insights for organizations seeking to navigate the evolving landscape of product development and management.

Research questions arising from the gaps.

- What are the common challenges in transitioning to Agile product management, and how can these challenges be effectively addressed?
- What are the benefits and drawbacks of hybrid approaches in product management, and how can organizations strike the right balance?
- How does Agile support or hinder innovation in product development, and what strategies can organizations use to foster innovation within Agile teams?
- How do industry-specific regulations and constraints impact the adoption and success of Agile in product management?

Methodology

Research Design

A descriptive research design is the most suitable approach for investigating the adoption of Agile methodologies for improved product management. This research design aims to provide a comprehensive and accurate portrayal of the current state of Agile adoption, its challenges, benefits, and impact on product management practices within organizations. A descriptive research design allows researchers to collect data on the current practices and trends related to Agile adoption in product management (Udokporo *et al.* 2020). This approach provides a snapshot of how organizations are currently implementing Agile methodologies.

Data Collection Instruments

This study employs the secondary method to produce the attributes of the adoption of an agile strategy. Secondary methods include retrieving already exited data from frown sources rather than audience targeting (Müller & Klein, 2018). Apart from this thematic analysis has also been developed in research for analyzing the gathered qualitative data that includes reading through a data set and identifying patterns called the themes. According to Moi & Cabiddu, (2022), secondary sources include published articles, magazines, journals, statistical synopsis, articles, and books. These quotations are the most reasonable and protect the time of the researcher.

Data Analysis

The quantitative thematic analysis benefits virtually represent the churning prophecy to increase product management. As the data already exists the researcher does not require extra time to develop it, they only need to identify the effective source and compare it. Thematic analysis is the chosen method for data analysis in the study "Adopting Agile Methodologies for Improved Product Management." This approach enables a systematic examination of qualitative data to identify, analyze, and report recurring themes and patterns within the dataset (Annosi *et al.* 2020).

The results of the thematic analysis are reported in a comprehensive manner, offering a structured presentation of the key themes, supported by excerpts or quotations from the data to illustrate and substantiate each theme's relevance.

Findings

Theme 1: Process of Adopting Agile Methodology in Product Management

There have been various processes including adopting agile for the product leaders. These include:

Encourage experimentation: No processes are ventured, and everything is proposed to alter if the changes put value. For starting a unique prince, there is a need to revisit proposed changes and existing workflows (Müller & Klein, 2018). A meeting of retro is helpful to communicate through proposing and processing unique ideas based on past performance.

Customize sprints: There has been no law that states that a team has to work in sprints for two weeks. Based on the scope or team size of one four or six weeks, mission effectively fit. A Sprint of one week makes it smoother to account for future bugs and to divide tasks into smaller chunks to adapt the changes.

Trust the group members: It belongs to the roles of leadership. Leaders of the team have increased task priority to aim at existence; hence the micromanagers have not belonged to it (Tripathi, et al. 2021). Trusting teams are necessary to develop personal processes and identify the practices that fulfill them to get the work done efficiently and effectively.

Consider the customers: Any product team is joined to the behaviors and the needs of the customers. Leaders of products are helped in analyzing the products and are highly family with the journeys of the customers. Hence adapting agile to suit the team, while conspiring the feedback of the customers.

Theme 2: Benefits of using Agile methodology in product management.

The main advantage of using the agile methodology is that it enhances the quality of the product and promotes accountability and transparency among the group members. Hence, organizations can ensure the control of quality through the agile methodology by identifying any possible challenges in the process of developing products. According to Stormi & Korhonen, (2019), stakeholders provide feedback over time that leads to casualty of the product standards before releasing it into the market. Furthermore, these methods decrease the costs as there are low requirements for delays and reworks. In addition, it encourages the iterative cycles for development which support waste minimization, increase efficiency, and ensure the decree cost. Apart from this, agile methodology is helpful to enhance the satisfaction of the customers and the customers are provided with more updates and frequent products. This increases transparency and develops a strong connection between the customer and the company (Müller & Klein, 2018). Teams are motivated to work, fostering ownership and a collaboration sense. Teams can be encouraged to take high authority and be able to make effective decisions.

Theme 3: key principles of product management Through Agile methodology

This methodology utilizes the iterative development cycle to increase efficiency and minimize waste. In addition, it focuses on the feedback of stakeholders to make sure that products are highly performed in the target market (Locatelli *et al.* 2023). An agile strategy helps organizations to move quickly and faster to launch the product into the market. With the help of an insistent process of development, it emphasized the smaller important pieces of the production (Müller & Klein, 2018). Besides this, it delivers value to customers in the most effective way. recompensed fast to changes and new markets, as the expectation of the customers has been increasing with time.

Discussion

Agile methodology has various benefits that have been identified to manage the product effectively and develop it with high quality. The customers are highly satisfied with the organisation after adopting this technology as it helps to get the quality product (Moyón, et al. 2020). Collaboration among the team members is essential to enhance the product's features and help to achieve beneficial results. Several frameworks are present in agile surgery to manage the product.

The highly used agile framework is scrum by many organizations. The major key factors of agile are metrics, communication, and teamwork (Müller & Klein, 2018). The transparency in the overall production function can be identified with the help of these technologies. Apart from this, executive visibility has also been improved with the agile methodology. A product development roadmap is necessary to fulfil the demand of the customers effectively and increase the lifespan of the product (Moi & Cabiddu, 2021). The technology implementation helps to monitor the overall performance effectively by the head of product development. The workers have also been motivated to work hard and achieve great success. In addition, there is a need to consider the competitors and look at their product features and prices and procure better products.

Understanding and Overcoming Obstacles to Agile Implementation

Implementing Agile management of products can be challenging due to various obstacles. Some common hurdles include resistance to change, lack of top-level support, inadequate training, and organizational culture misalignment (Moyón, et al. 2020). To overcome these obstacles, organizations must cultivate a culture of openness to change, provide comprehensive training, secure executive sponsorship, and adapt Agile principles to their unique context. Successful Agile implementation often requires a phased approach, starting with pilot projects to build confidence and gradually scaling across the organization.

Analyzing Hybrid Product Administration Systems: Balancing Advantages and Disadvantages

Hybrid product administration systems, combining traditional and Agile approaches, offer flexibility but also introduce complexity. The advantages include leveraging existing processes and accommodating regulatory requirements. However, disadvantages may arise from conflicts

between the two approaches and the risk of losing some Agile benefits. Achieving the right balance involves defining clear roles, responsibilities, and workflows, integrating tools and communication channels, and fostering a culture that values adaptability.

Promoting Creativity within Agile Teams:

Agile methodologies can both promote and stifle creativity in product development. The iterative nature of Agile allows for constant feedback and adaptation, fostering creativity by encouraging experimentation and innovation. However, strict adherence to Agile rituals and a focus on short-term goals can limit creative thinking (Moi & Cabiddu, 2021). To encourage creativity, businesses should create a psychologically safe environment where team members feel comfortable sharing ideas, allocate time for brainstorming and exploration, and balance Agile processes with strategic thinking.

Impact of Industry-Specific Rules and Restrictions on Agile Uptake:

The adoption and success of Agile in product administration can be influenced by industry-specific rules and restrictions. Highly regulated industries like healthcare and finance may face challenges in complying with stringent regulations while maintaining Agile flexibility (Müller & Klein, 2018). To navigate these challenges, organizations must work closely with regulatory bodies, seek exemptions when possible, and adapt Agile practices to meet compliance requirements. Industry-specific Agile frameworks, such as SAFe (Scaled Agile Framework), can also provide guidance in these contexts.

Conclusion

This report has concluded that agile product management is a reparative approach to maintaining the development of software that emphasizes continuously incorporating and releasing reviews of the customers. The agile method divides the work of the production into smaller pieces to make it easier as well as the efficiency of the work enhanced. The overall report discussed the adoption process and the framework of the research. In addition, secondary thematic analysis that has been developed in the research helps to compare and contrast different authors' point of view and provide high insight of project tropic. The demand of the customer for the product can be easily and on time fulfilled.

Recommendations

This research on "Adopting Agile Methodologies for Improved Product Management" has yielded valuable insights that can inform theory, policy, and practice in the field of Agile product management. Organizations should consider adopting Agile methodologies to enhance product management practices. To facilitate a successful transition, they should invest in comprehensive training for employees at all levels, from executives to teams. For organizations opting for hybrid product administration systems, it is essential to strike the right balance between Agile and traditional approaches. Define clear roles and responsibilities, establish seamless workflows, and

promote adaptability. Agile methodologies emphasize customer feedback and continuous improvement. Organizations should prioritize gathering customer insights and integrating them into product development cycles.

Contribution to theory, policy, and practice

This research contributes to the theoretical understanding of Agile implementation models and strategies. It explores the obstacles faced during implementation and provides recommendations for overcoming them. Regulatory bodies and policymakers should consider providing industry-specific guidelines for Agile adoption, especially in highly regulated sectors. These guidelines can help organizations navigate compliance while leveraging Agile' s benefits. The practical implications of this research are substantial. Organizations that adopt Agile methodologies can expect improved product management practices, including faster time-to-market, enhanced customer satisfaction, and better adaptability to changing market conditions.

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