Shiv Shakti International Journal of Multidisciplinary and Academic Research
ISSN: 2278-5973 (Online) | Vol. 13, No. 3, (May 2025)
https://doi.org/10.5281/zenodo.15646968

Investigating Post-Implementation Challenges for Effective Innovation Management

Sarthak Jain[1], Prof. Dr. Laura Bechthold[2] and Dirk Werth[1]
[1] August-Wilhelm Scheer Institute für digitale Produkte und Prozesse gGmbH, Saarbrücken, Germany
[2] Bavarian Foresight-Institute, Technische Hochschule Ingolstadt, Ingolstadt, Germany

Abstract

In the realm of innovation management, the post-implementation phase often presents significant, yet underexplored, challenges that can hinder the long-term success of innovation management processes. Especially small and medium-sized organizations face specific hurdles when it comes to transforming innovative ideas into marketable products. While it is commonly assumed that the challenges in the implementation and post-implementation phases are similar, this study highlights that they can differ significantly. This paper investigates the critical barriers that organizations encounter after the initial implementation of innovation management strategies, with a particular focus on small scientific institutions in Germany. The methodology employs a single case study design using a qualitative approach based on 17 in-depth interviews with managers, employees, and external experts.

The findings show that ineffective communication between stakeholders, limited transparency in decision-making, and poor resource allocation are common barriers. Additionally, insufficient involvement of key stakeholders, such as customers, leads to disengagement and reduced innovation momentum. The gap between top management's strategic goals and the operational realities experienced by employees further complicates the process, making it difficult to maintain the innovative initiatives. These challenges highlight the complexities of managing innovation beyond its early stages, emphasizing that organizations often struggle to ensure that the processes and strategies established during implementation are effectively sustained. This paper aims to provide a clearer understanding of the distinct barriers that arise during the post-implementation phase, stressing the need for greater awareness of these specific issues within the innovation management field.

Keywords: Innovation Management, Post-implementation challenges, effective communication, transparency, innovation sustainability

Introduction

Innovation is a critical driver of economic growth, organizational competitiveness, and societal advancement in today's rapidly evolving global landscape. Derived from the Latin term innovare, meaning "to introduce something new," innovation has transitioned from its early perception as a disruptive force to a cornerstone of progress and economic development (Godin, 2015). In modern business contexts, the ability to innovate has become essential for navigating technological advancements, market disruptions, and heightened competition. Organizations increasingly rely on effective innovation management to transform creative ideas into sustainable, marketable products, services, and business models. While substantial attention has been devoted to understanding and addressing challenges during the implementation phase of innovation processes, the complexities of the post-implementation phase remain underexplored (Bessant, 2003). The post-implementation phase of the innovation management process refers to the period following the initial deployment of management strategies and systems for fostering innovation, where efforts shift from initiating processes to sustaining, refining, and scaling them to ensure their long-term effectiveness. This phase, where sustaining and scaling innovation become critical, demands distinct strategies and capabilities. If neglected, post-implementation challenges can result in diminished momentum, misalignment with strategic goals, and a failure to realize the full potential

Corresponding Author: Sarthak Jain, sarthak.jain@aws-institut.de

of innovation. For small scientific institutions and medium-sized enterprises, these challenges are often exacerbated by limited resources and structural constraints (Reeves, Levin, & Ueda, 2016). Germany, renowned for its leadership in research and development (R&D), offers a compelling context for examining these dynamics. While the country ranks at the global top as regards industrial R&D investments and innovation research, it is placed only ninth in the "Knowledge and Technology Outputs" category of the Global Innovation Index 2022 (Dutta, Lanvin, León, & Wunsch-Vincent, 2022). This disparity highlights potential inefficiencies in translating innovation into scalable, impactful results. For smaller organizations, maintaining customer engagement, optimizing resource allocation, and adapting to evolving demands are additional, persistent hurdles that hinder their ability to sustain innovation. This study addresses these tensions by focusing on the post-implementation phase of innovation management, with a particular emphasis on small, industry-focused scientific institutions in Germany. Building on prior research, such as Schuhmacher et al. (2018), which explores barriers to implementing radical innovations, this paper extends the discussion to investigate challenges that emerge after implementation. By adopting a qualitative, exploratory approach and conducting in-depth interviews with key stakeholders, this study seeks to uncover the practical and operational barriers unique to this critical phase. Unlike earlier stages, the postimplementation phase presents organizations with new challenges, including maintaining innovation momentum, integrating structured feedback loops, and aligning resources with evolving operational and strategic demands. These issues require a tailored approach, as they differ fundamentally from the initial hurdles faced during implementation. Hence, this research highlights the importance of managing innovation beyond its inception, emphasizing the strategic imperative of sustaining and scaling innovation efforts over time. As businesses face declining lifespans due to their inability to innovate and adapt to dynamic environments (Reeves, Levin, & Ueda, 2016), this paper underscores the necessity of addressing post-implementation barriers. By focusing on this often-overlooked phase, the study contributes to the broader field of innovation management, offering actionable insights for resource-constrained organizations striving to sustain their competitive advantage in an increasingly dynamic global marketplace.

Research Background

Innovation management is widely regarded as essential for transforming ideas into viable products or services, yet it faces numerous challenges that organizations must navigate to implement new ideas successfully. Innovation management has been extensively studied, with a broad body of literature identifying numerous challenges that organizations face throughout the innovation lifecycle. For instance, D'Este et al. (2012) emphasize the role of resource constraints and communication gaps as significant barriers to innovation. Additionally, Sandberg and Aarikka-Stenroos (2014) highlight stakeholder engagement issues and cultural barriers, which further complicate the innovation process. These obstacles, spanning from early ideation to execution, disrupt the successful realization of innovation initiatives. Furthermore, Reeves, Levin, and Ueda (2016) argue that the inability to adapt to such challenges can significantly hinder an organization's long-term viability in a dynamic market environment. Another challenge in innovation management lies in identifying and creating opportunities within both new and existing markets in a timely manner. Tidd and Bessant (2018) suggest that many companies overly focus on novel ideas, often neglecting ways to add value for established customers, which can limit growth potential. Effective innovation requires enhancing value for current customers as well as entering new markets. Equally important is understanding customer needs and market trends; however, many organizations struggle with this aspect. Insufficient insight into customer preferences often leads to misaligned products that miss market demands (Saatçioğlu & Özmen, 2010). Without ongoing customer engagement and advanced analytics to identify trends, companies risk missing opportunities, wasting resources, and losing their competitive edge (D'Este et al., 2012). Innovation management is also hindered by external factors like market dynamics, regulatory changes, and societal shifts. Resistance from customers, restrictive regulations, and cultural barriers further complicate innovation, necessitating proactive adaptation and flexibility (Sandberg & Aarikka-Stenroos, 2014). Building on these

market-related challenges, resource constraints also present a considerable barrier in innovation management, as innovation requires substantial financial, human, and technological investments. Organizations with limited budgets often struggle to allocate resources, making it difficult to sustain innovation. Securing external funding is also challenging, especially for small firms. High costs associated with R&D, prototyping, and market entry can limit long-term efforts, pressing organizations to find creative strategies for resource optimization (Hahn et al., 2019; Sandberg & Aarikka-Stenroos, 2014). Skills and knowledge gaps hinder innovation, as employees often lack expertise in new technologies and processes. Continuous learning programs that build technical and soft skills are essential. Additionally, breaking down information silos through cross-departmental collaboration promotes knowledge sharing, fostering a more effective, innovative environment (Sandberg & Aarikka-Stenroos, 2014; D'Este et al., 2012). Compounding these issues, rapid technological advancements create further challenges. While technological progress is crucial for innovation, organizations often struggle to keep up with the pace and complexity of new developments. Continuous investment in advanced tools and skilled personnel is required to remain competitive. Smaller firms and non-profits face additional barriers due to limited access to such resources, impacting their innovation capacity and competitiveness (Cronin, 2014; Khallouk & Robert, 2020). These structural and resource challenges are often exacerbated by internal factors, such as a risk-averse organizational culture and inadequate leadership. When stability is prioritized over change, experimentation is discouraged, limiting an organization's innovation potential (Muralidharan, 2020). Furthermore, without effective leaders and a clear strategic vision, innovation efforts become fragmented, teams struggle to align, and integrating innovation into existing processes becomes challenging (Lindsay et al., 2020; Khan & Khan, 2016). Additionally, an innovative mindset among employees can be hindered by internal barriers, including rigid processes, fears of unrecognized contributions, and the "Not Invented Here" (NIH) syndrome (Lindsay, Perkins, & Karanjika, 2010). These factors can stifle creativity and prevent effective collaboration, further undermining the organization's capacity to innovate. Cultivating a culture that encourages risk-taking, idea-sharing, and adaptability is essential to address these obstacles and support long-term innovation success (Lindsay, Perkins, & Karanjika, 2010). Even after overcoming numerous challenges, integrating innovation into existing workflows remains difficult. Rigid, hierarchical structures often slow communication and hinder interdepartmental collaboration (Khallouk & Robert, 2018). Negative internal perceptions also obstruct success; when employees lack clarity on objectives or perceive increased workloads and high costs without clear benefits, resistance arises. To foster successful integration, organizations must promote adaptability, clear communication, and trust, breaking down silos and addressing employee concerns to enhance innovation and drive growth (Saatçioğlu & Özmen, 2010; Bondeson & Grönlund, 2016). Another key external challenge in innovation management is building and maintaining inter-organizational networks. Organizations increasingly rely on partnerships for resource sharing, supply chain management, and collaborative development. However, fostering cooperative, trust-based relationships instead of transactional ones is difficult, yet essential for accessing resources and driving innovation (Bessant, 2003; Gardocka-Jałowiec & Wierzbicka, 2019). While substantial research addresses innovation management challenges in the implementation phase, the post-implementation phase remains largely underexplored. Most studies focus on larger organizations or assume that obstacles encountered during implementation persist unchanged in later stages. However, sustaining innovation may require different approaches and strategies, especially for smaller organizations, as initial challenges may evolve postimplementation. Research by Zaltman et al. (1973) and Young (1985) suggests that maintaining and scaling innovation efforts over time involves distinct demands, which highlights a critical gap in existing literature. This research gap becomes even more pronounced when examining small, industry-focused scientific institutions. Limited resources often make sustaining innovation more challenging for these organizations, which typically lack the infrastructure, funding, and personnel available to larger enterprises. Established frameworks, such as Cooper's (2008) Stage-Gate model and Xu et al.'s (2007) Total Innovation Management framework, generally focus on the implementation phase and overlook the specific post-implementation needs of small, resource-constrained institutions. This

study aims to address this gap by identifying the challenges specific to the post-implementation phase in small scientific institutions in Germany. By focusing on this under-researched stage, the study seeks to provide insights that will help these institutions understand and navigate the unique factors influencing sustained innovation, offering a tailored perspective for improving long-term innovation practices.

Method

This study adopts a qualitative, exploratory methodology to examine the post-implementation phase of innovation management, specifically targeting the unique challenges faced by small scientific institutions in Germany. Given the limited research on this phase, especially for resource-constrained organizations, a qualitative approach is particularly suited for capturing detailed, subjective insights. Qualitative research offers the flexibility needed to explore complex, experience-driven aspects of innovation management, facilitating a comprehensive understanding of challenges encountered after initial implementation. To address the research questions, data is collected through two primary methods: a thorough literature review and expert interviews. This dual approach ensures a balance between theoretical grounding and practical insights, enabling a more robust understanding of the complexities of the post-implementation phase. Literature review forms the foundation by synthesizing existing studies, journal articles, and industry reports, focusing on peer-reviewed sources to maintain academic rigor. Major databases, including Google Scholar, ScienceDirect, and EBSCOhost, were used to conduct systematic searches using keywords such as “postimplementation challenges,” “innovation management,” “barriers to innovation,” and “sustaining innovation.” Boolean operators and advanced search filters helped refine the results. Initially, over 100 articles were identified based on relevance to the topic, with criteria including publication within the past 15 years with a focus on small or medium-sized enterprises (SMEs) or scientific institutions, and an emphasis on the topic of innovation. After screening abstracts for relevance and removing duplicates, a total of 15 papers were selected for detailed review. These papers were assessed for their contributions to understanding innovation management processes, barriers to implementation, and the specific challenges encountered during postimplementation phases. Key themes from the literature were categorized to align with the study’s objectives, offering a cohesive theoretical framework that contextualizes findings from expert interviews. The expert interviews serve as the primary empirical data source, offering in-depth perspectives on the operational and experiential aspects of post-implementation challenges. Participants are selected from three groups to ensure a range of perspectives: department heads within a small scientific institution in Germany who provide strategic insights, employees who indirectly experience the innovation process and can speak to its broader integration, and external innovation managers from other German companies with successful innovation management implementations. This selection captures views from strategic leaders, operational staff, and external experts, fostering a nuanced understanding of challenges in different contexts. For this research a total of 17 interviews were conducted. The interviews follow a semi-structured format, which promotes open-ended, in-depth discussions, allowing participants to share insights beyond predefined questions. Interviews are recorded with consent, transcribed verbatim, and analyzed to ensure accuracy and depth. Using a flexible conversational approach, the interviews capture rich, qualitative data that provides a realistic view of post-implementation experiences. Data analysis combines qualitative analysis of both literature and interviews to identify key themes, patterns, and insights related to postimplementation challenges. For the literature review, findings are categorized into major themes aligned with the study’s objectives, providing a cohesive theoretical framework. The interviews are analyzed using Qualitative Content Analysis (QCA), employing QCAmap software to code the text and identify recurring themes (Fenzl & Mayring, 2017). This thematic analysis helps reveal underlying meanings and patterns, ensuring a structured interpretation of complex experiences. By integrating insights from both the literature review and expert interviews, this study aims to provide a comprehensive understanding of the challenges unique to the postimplementation phase of innovation management. This qualitative approach is designed to uncover new themes and insights that are often overlooked in existing literature, bridging theoretical frameworks with practical, real-world perspectives.

Results and Discussion

This study adopts a qualitative, exploratory methodology to examine the post-implementation phase of innovation management, specifically targeting the unique challenges faced by small scientific institutions in Germany. Given the limited research on this phase, especially for resource-constrained organizations, a qualitative approach is particularly suited for capturing detailed, subjective insights. Qualitative research offers the flexibility needed to explore complex, experience-driven aspects of innovation management, facilitating a comprehensive understanding of challenges encountered after initial implementation. To address the research questions, data is collected through two primary methods: a thorough literature review and expert interviews. This dual approach ensures a balance between theoretical grounding and practical insights, enabling a more robust understanding of the complexities of the post-implementation phase. Literature review forms the foundation by synthesizing existing studies, journal articles, and industry reports, focusing on peer-reviewed sources to maintain academic rigor. Major databases, including Google Scholar, ScienceDirect, and EBSCOhost, were used to conduct systematic searches using keywords such as “postimplementation challenges,” “innovation management,” “barriers to innovation,” and “sustaining innovation.” Boolean operators and advanced search filters helped refine the results. Initially, over 100 articles were identified based on relevance to the topic, with criteria including publication within the past 15 years with a focus on small or medium-sized enterprises (SMEs) or scientific institutions, and an emphasis on the topic of innovation. After screening abstracts for relevance and removing duplicates, a total of 15 papers were selected for detailed review. These papers were assessed for their contributions to understanding innovation management processes, barriers to implementation, and the specific challenges encountered during postimplementation phases. Key themes from the literature were categorized to align with the study’s objectives, offering a cohesive theoretical framework that contextualizes findings from expert interviews. The expert interviews serve as the primary empirical data source, offering in-depth perspectives on the operational and experiential aspects of post-implementation challenges. Participants are selected from three groups to ensure a range of perspectives: department heads within a small scientific institution in Germany who provide strategic insights, employees who indirectly experience the innovation process and can speak to its broader integration, and external innovation managers from other German companies with successful innovation management implementations. This selection captures views from strategic leaders, operational staff, and external experts, fostering a nuanced understanding of challenges in different contexts. For this research a total of 17 interviews were conducted. The interviews follow a semi-structured format, which promotes open-ended, in-depth discussions, allowing participants to share insights beyond predefined questions. Interviews are recorded with consent, transcribed verbatim, and analyzed to ensure accuracy and depth. Using a flexible conversational approach, the interviews capture rich, qualitative data that provides a realistic view of post-implementation experiences. Data analysis combines qualitative analysis of both literature and interviews to identify key themes, patterns, and insights related to postimplementation challenges. For the literature review, findings are categorized into major themes aligned with the study’s objectives, providing a cohesive theoretical framework. The interviews are analyzed using Qualitative Content Analysis (QCA), employing QCAmap software to code the text and identify recurring themes (Fenzl & Mayring, 2017). This thematic analysis helps reveal underlying meanings and patterns, ensuring a structured interpretation of complex experiences. By integrating insights from both the literature review and expert interviews, this study aims to provide a comprehensive understanding of the challenges unique to the postimplementation phase of innovation management. This qualitative approach is designed to uncover new themes and insights that are often overlooked in existing literature, bridging theoretical frameworks with practical, real-world perspectives.

Overview of Challenges

The findings reveal a range of challenges encountered in innovation management, categorized based on their occurrence in the pre-implementation and post-implementation phases. These challenges align with themes identified in the literature and are enriched by the qualitative insights gathered from interviews.

By combining these perspectives, the analysis provides a comprehensive understanding of the factors affecting innovation management across its lifecycle. Table 1 provides a structured categorization of challenges faced by organizations during the innovation management lifecycle, distinguishing between challenges that are unique to the pre-implementation or post-implementation phases and those that persist across both stages. This framework is essential for understanding how barriers evolve and influence the sustainability of innovation efforts.

Table 1. Overview of challenges to innovation management

Challenges Identified	**Pre-Implementation**	**Post-Implementation**
Integration and implementation with the existing organisational structures	✔	✔
Customer and market understanding	✔	✔
Skills and knowledge gaps	✔	✔
Resources: employee time and capacity	✔	✔
Financial Resources	✔	✔
Leadership and strategic vision	✔	✔
Organizational culture	✔	✔
Negative internal perception of the process	✔	✔
Cultivating an innovative employee mindset	✔	✔
Challenges with spotting the opportunities	✔	
Technological challenges	✔	
External factors	✔	
Managing connections	✔	
Lack of Communication		✔
Lack of structure in the process		✔
Lack of agility		✔
Process too complex		✔
Lack of incentives		✔
Lack of a responsible person (point of contact with innovation process)		✔
Lack of feedback loops		✔
Stakeholder management		✔
Wrong applications of process.		✔
Not fast enough		✔

Legend - Only from Literature Review | Only from Interviews | From Both

Some challenges, such as integration with existing organizational structures, customer and market understanding, skills and knowledge gaps, resource limitations (financial and employee capacity), leadership and strategic vision, and organizational culture, persist across both phases of innovation management. These issues are consistent with findings in the literature. For example, Rese and Baier (2011) highlight how resource limitations and leadership misalignment can hinder both early-stage and ongoing innovation efforts. Similarly, Sandberg and Aarikka-Stenroos (2014) identify inadequate market understanding as a recurring barrier, noting its impact on both the conceptualization and scaling of innovations. These persistent challenges require ongoing attention and adaptation to ensure the

continuity of innovation processes. The interviews also reflect this sentiment, with one respondent emphasizing, “Leadership’s strategic vision and how it aligns with operational realities often dictates whether innovation efforts are sustained over time”. In the pre-implementation phase, foundational challenges such as technological constraints, identifying opportunities, external environmental factors, and managing connections dominate. The literature echoes these findings, with Kahn (2018) noting the importance of establishing clear technological and market opportunities as a prerequisite for successful innovation. Tidd and Bessant (2018) further argue that without careful resource planning and infrastructure preparation, innovation efforts are unlikely to gain traction. For example, one respondent stated, “The biggest challenge is ensuring that we identify opportunities that truly align with market needs. Without this, we’re building on unstable ground”. Addressing these challenges effectively is crucial for building a stable foundation for future innovation efforts. The post-implementation phase presents distinct and critical challenges, as organizations shift from initiating innovation to sustaining and scaling it. Challenges such as lack of communication, lack of structure in the process, lack of agility, and process complexity hinder the ability to adapt to evolving demands. Research by Sandberg and Aarikka-Stenroos (2014) supports these findings, highlighting the difficulties organizations face in maintaining momentum after implementation. This phase also introduces unique issues, including insufficient incentives, absence of a designated point of contact, lack of feedback loops, and stakeholder management. For instance, Zaltman et al. (1973) emphasize that the absence of iterative feedback mechanisms can stifle the evolution of innovation, while Kahn (2018) underscores the need for clear communication structures to align internal and external stakeholders. One participant described the challenge of feedback, stating, “We rely on customer feedback to adapt and improve, but without formal mechanisms in place, it’s easy to lose sight of what they actually need”. The absence of incentives and a designated point of contact also emerged as recurring issues in the interviews. These challenges resonate with the findings of Sandberg and Aarikka-Stenroos (2014), who note that organizational misalignment and insufficient role clarity can lead to stagnation in innovation efforts. As one respondent noted, “It’s critical to have someone responsible for steering the process—without that, it’s hard to maintain accountability”. Similarly, the absence of incentives was described as a demotivating factor: “Innovation processes often fail because there’s no tangible reward for employees to invest their time and energy”. This aligns with findings by Lindsay et al. (2020), who stress the importance of linking incentives to long-term innovation goals. Moreover, process complexity and the lack of agility were repeatedly highlighted. Tidd and Bessant (2018) argue that rigid processes can limit an organization’s ability to respond to dynamic market conditions, a finding corroborated by the interviews. One participant stated, “Innovation doesn’t happen in a straight line—it requires iterative loops and flexibility. Rigid processes don’t allow for that”. This highlights the need for a flexible, adaptive approach to post-implementation innovation management.

Prioritization of Post-Implementation Challenges

The findings further explore the prioritization of challenges specific to the post-implementation phase, as outlined in Table 2. This table organizes these challenges based on their level of priority: high, medium, or low, alongside the number of interviews in which they were explicitly mentioned. By providing a structured view of their relative significance, Table 2 complements the broader categorization presented in Table 1 and serves as a basis for identifying areas of immediate focus for organizations navigating this phase.

Table 2. Post-implementation challenges ranked according to the level of priority

Post-implementation Challenges	Priority	No. of Interviews
Customer involvement	High	7
Resources: employee time and capacity	High	7
Lack of knowledge among employees	Medium	4
Lack of feedback loops	Medium	4
Lack of agility	Medium	4
Resources: money	Medium	4
Lack of risk-taking mindset and experimentation	Medium	4
Wrong applications of process.	Medium	4
Lack of incentives	Low	3
Lack of communication	Low	3
Lack of a responsible person (point of contact with innovation process)	Low	3

High-Priority Challenges

One of the most critical challenges identified during the post-implementation phase is customer engagement. Organizations often struggle to sustain continuous interaction with customers, which can lead to a disconnect between innovations and the evolving needs of their users. Structured feedback mechanisms were highlighted as essential for adapting and improving processes. One external participant remarked, “Customer feedback is essential for adapting and improving our processes, but we often lack structured ways to collect it.” This challenge aligns with Zaltman et al. (1973), who emphasize the role of iterative feedback loops in sustaining innovation management processes. Resource constraints, particularly the limited availability of employee time and capacity, were also highlighted as a high-priority issue. Many respondents reported difficulties in balancing operational responsibilities with innovation tasks, often leading to burnout and disengagement. As one internal respondent explained, “It’s difficult to allocate time for innovation when regular duties already consume so much capacity.” This finding echoes Tidd and Bessant (2018), who identify resource limitations as a key barrier to sustaining innovation efforts.

Medium-Priority Challenges

The lack of sufficient training and knowledge among employees presented a medium-priority challenge. Many respondents expressed a need for greater clarity about their roles in the innovation management process, which hindered their ability to contribute effectively. One participant within the company emphasized, “We need more training to understand not just the process but also our specific tasks within it.” This finding aligns with Rese and Baier (2011), who underscore the importance of capability-building to bridge knowledge gaps and enhance engagement. Another recurring theme was the absence of formal feedback loops. Without systematic mechanisms to gather and act on feedback, organizations struggled to learn from their experiences and refine their approaches. An external expert explained, “Without proper feedback, we don’t learn from our mistakes, and the process stagnates.” This observation resonates with Sandberg and Aarikka-Stenroos (2014), who highlight feedback loops as essential for iterative improvement in innovation management. Rigid processes and a lack of agility were also identified as barriers during the postimplementation phase. Many respondents stressed the need for flexibility in innovation management, especially when responding to changing market conditions. One department head noted, “Innovation doesn’t happen in a straight line—it requires iterative loops and flexibility.” This aligns with Sandberg and Aarikka-Stenroos (2014), who advocate for adaptive strategies in innovation processes. Financial constraints were another significant challenge for smaller organizations. Budgetary limitations restricted their ability to invest in necessary tools, technologies, and personnel. An expert remarked, “We need more financial support to scale our innovations effectively.” This is consistent with

findings by Hahn et al. (2019), who stress the adverse impact of financial constraints on innovation efforts. Lastly, fostering a culture of risk-taking and experimentation was highlighted as a medium-priority issue. Many organizations lacked an environment that encouraged employees to experiment and tolerate failure, both of which are critical for innovation. Few interviewees observed, “Innovation often requires you to fail first, but our current system doesn’t incentivize that.” Lindsay et al. (2020) similarly emphasizes the importance of cultivating a mindset that supports experimentation and creativity.

Low-Priority Challenges

The absence of clear incentives for employees to engage in innovation activities was identified as a low-priority challenge. Without tangible rewards, employees often felt less motivated to invest their time and energy in innovation. One participant stated, “People don’t feel motivated to contribute if there’s no tangible reward for their efforts.” This finding is consistent with Lindsay et al. (2020), who highlight the role of incentives in sustaining employee engagement. Communication gaps, although less frequently mentioned, were another challenge impacting collaboration. Participants described difficulties in ensuring clear communication channels within their teams, which sometimes led to misalignment. One department head explained, “We often struggle to align our teams because the communication channels aren’t well-defined.” Effective communication structures remain crucial for fostering coordination and clarity in innovation processes. Finally, the absence of a designated point of contact for overseeing innovation processes was mentioned as a low-priority issue. Having a dedicated individual responsible for managing innovation efforts was viewed as beneficial but not critical. One employee remarked, “Without a clear point of contact, accountability becomes an issue.” Assigning specific roles can enhance coordination and ensure innovation efforts remain focused and well-directed. While this paper primarily focuses on the high-priority and medium-priority challenges most prominent in the post-implementation phase, it is also important to acknowledge that other less frequent challenges, such as complex processes, insufficient top management support, stakeholder management issues, and misaligned strategies, can impact the sustainability of innovation efforts. Although these were not as prevalent in the data, they still represent areas that may need attention to support long-term success in innovation management. By concentrating on these post-implementation challenges, this study provides a roadmap for small, industry-focused scientific institutions to navigate the complexities of sustaining innovation. The prioritization of challenges according to their frequency and urgency offers practical insights that can help these organizations allocate resources and attention effectively, addressing the most pressing issues first while gradually tackling lower-priority challenges as they strengthen their innovation processes.

Conclusion

Innovation management in the post-implementation phase presents distinct challenges that are critical for the long-term sustainability of innovation efforts. This study highlights that postimplementation is not merely a continuation of earlier phases but a stage requiring unique strategies and capabilities. High-priority challenges, such as maintaining customer involvement and effectively managing employee time and capacity, underscore the importance of ongoing engagement and efficient resource allocation. These factors are essential for aligning innovation processes with evolving market demands and preventing the loss of momentum. Mediumpriority challenges, including knowledge gaps, lack of feedback loops, and financial constraints, further emphasize the need for continuous learning, iterative improvements, and structural flexibility. The findings reveal that addressing these challenges requires fostering a culture that supports adaptability, collaboration, and risk-taking. Organizations must also establish clear feedback mechanisms and align strategic goals with operational realities to navigate the complexities of sustaining innovation. Small scientific institutions, in particular, must develop tailored approaches to overcome their unique resource and structural constraints, ensuring that innovation initiatives remain impactful and scalable. While this research provides valuable insights, several limitations must be acknowledged. The study’s focus on small scientific institutions in Germany may limit the generalizability of its findings to other industries or regions. Additionally, the qualitative nature of the research, while allowing for in-depth

exploration, introduces inherent subjectivity in data collection and analysis. Further, the study concentrates solely on the post-implementation phase, potentially overlooking how earlier challenges influence this stage. Expanding the research scope to include diverse organizational contexts and adopting mixed-method approaches could offer a more holistic understanding of innovation management challenges across the entire lifecycle. Despite these limitations, the study contributes to the field of innovation management by addressing the often-overlooked post-implementation phase. It provides actionable insights for resource-constrained organizations, offering a foundation for both theoretical exploration and practical strategies to enhance innovation sustainability in dynamic and competitive environments.

References

Bessant, J. (2003). Challenges in Innovation Management. In L. V. Shavinina (Ed.), The International Handbook on Innovation (pp. 761-774). Elsevier Science. https://doi.org/10.1016/B978-008044198-6/50052-8

Bondeson, A., & Grönlund, S. (2016). Opportunities and challenges in the management of an innovation laboratory: A case study of Semcon Innovation Lab. Retrieved from https://urn.kb.se/resolve?urn=urn:nbn:se:uu

Cooper, R. G. (2008). Perspective- The Stage-Gates Idea-to-Launch Process - Update What's New, and NexGen Systems. The Journal of Product Innovation Management, 25(3), 213-232. https://doi.org/10.1111/j.1540-5885.2008.00296.x

Cronin, M. J. (2014). The Challenge of Innovation. In Top Down Innovation (pp. 1-12). New York: Springer Cham. https://doi.org/10.1007/978-3-319-03901-5_1

D'Este, P., Iammario, S., Savona, M., & Tunzelmann, N. v. (2012). What hampers innovation? Revealed barriers versus deterring barriers. Research Policy, 41(2), 482-488. https://doi.org/10.1016/j.respol.2011.09.008

Dutta, S., Lanvin, B., León, L. R., & Wunsch-Vincent, S. (Eds.). (2022). Global Innovation Index 2022: What is the future of innovation-driven growth? Geneva: World Intellectual Property Organization. http://dx.doi.org/10.34667/tind.46596

Fenzl, T., & Mayring, P. (2017). QCAmap: eine interaktive Webapplikation für Qualitative Inhaltsanalyse. Zeitschrift für Soziologie der Erziehung und Sozialisation ZSE, 37(3), 333-340. Retrieved from https://qualitative-content-analysis.org/wp-content/uploads/ZSE3_2017_Fenzl_QCAmap-eine-interaktive-Webapplikation-f%C3%BCr-QualitativeInhaltsanalyse.pdf

Gardocka-Jałowiec, A., & Wierzbicka, K. (2019). Barriers to Creating Innovation in the Polish Economy in the Years 2012-2016. Studies in Logic, Grammar and Rhetoric, 59(72), 211-225. https://doi.org/10.2478/slgr-2019-0038

Godin, B. (2015). Innovation Contested: The Idea of Innovation Over the Centuries. New York: Routledge. https://doi.org/10.4324/9781315855608

Hahn, D., Minola, T., Vismara, S., & Stasio, V. D. (2019). Financing Innovation: Challenges, Opportunities, and Trends. Foundations and Trends® in Entrepreneurship, 15(3-4), 328-367. https://doi.org/10.1561/0300000085-1

Kahn, Z. A., & Khan, A. N. (2016). The Leadership and Innovation: Prospects and Challenges. Industrial Engineering Letters, 6(1), 1-4.

Khallouk, M., & Robert, M. (2018). Obstacles to management innovation in nonprofit organizations: the case of an international nongovernmental organization. Journal of Innovation Economics & Management, 21(1), 183-210. https://doi.org/10.3917/jie.pr1.0020

Lindsay, J., Perkins, C., & Karanjika, M. R. (2010). Overcoming Obstacles to Innovation. Chemical Engineering Progress, 106(9), 46-49.

Muralidharan, V. (2020). A Structured Innovation Strategy. IEEE Engineering Management Review, 48(4), 12-16. https://doi.org/10.1109/EMR.2020.3031275

Reeves, M., Levin, S., & Ueda, D. (2016). The Biology of Corporate Survival. Harvard Business Review, 94(1), 47-55.

Saatçioğlu, Ö. Y., & Özmen, Ö. N. (2010). Analyzing the Barriers Encountered in Innovation Process Through Interpretive Structural Modelling: Evidence From Turkey. Journal of Management and Economics, 17(2), 207-225.

Sandberg, B., & Aarikka-Stenroos, L. (2014). What makes it so difficult? A systematic review on barriers to radical innovation. Industrial Marketing Management, 43(8), 1293-1305. https://doi.org/10.1016/j.indmarman.2014.08.003

Schuhmacher, M. C., Germann, R. R., & Ebbes, P. (2018). Examining barriers in radical innovation projects: A qualitative study in the pharmaceutical industry. Research Policy, 47(5), 936-949. https://doi.org/10.1016/j.respol.2018.02.014

Tidd, J., & Bessant, J. (2018). Innovation Management Challenges: From Fads to Fundamentals. International Journal of Innovation Management, 22(05). https://doi.org/10.1142/S1363919618400078

Xu, Q., Chen, J., Xie, Z., Liu, J., Zheng, G., & Wang, Y. (2007). Total Innovation Management: a novel paradigm of innovation management in the 21st century. The Journal of Technology Transfer, 32(1-2), 9-25. https://doi.org/10.1007/s10961-006-9007-x

Young, J. G. (1985). What Is Creativity? The Journal of Creative Behavior, 19(2), 77-87. https://doi.org/10.1002/j.2162-6057.1985.tb00640.x

Zaltman, G., Duncan, R., & Holbek, J. (1973). Innovations and Organisations. New York: John Wiley & Sons