

Knowledge Management Practices in Open Innovation Networks: Strategies, Barriers, and Global Perspectives

Ramdanil Mubarak

STAI Sangatta Kutai Timur, Indonesia

Correspondent : dani.education@gmail.com

Received : December 12, 2024

Accepted : January 15, 2025

Published : January 31, 2025

Citation: Mubarak, R. (2025). Knowledge Management Practices in Open Innovation Networks: Strategies, Barriers, and Global Perspectives. *Novatio: Journal of Management Technology and Innovation*, 3(1), 13-27..

ABSTRACT: This study examines the role of knowledge management (KM) in enabling open innovation (OI) networks. The review synthesizes existing literature and analyzes the systemic barriers that constrain effective KM practices. A systematic narrative review methodology was adopted, drawing on peer-reviewed studies from databases including Scopus, Web of Science, Google Scholar, and PubMed. Keywords such as “knowledge management,” “open innovation,” “digital platforms,” and “communities of practice” guided the literature search. The findings reveal three dominant themes: the integration of digital technologies to facilitate knowledge sharing, the establishment of collaborative environments through Communities of Practice, and the importance of organizational adaptability in dynamic contexts. Organizational, technological, and cultural factors strongly influence KM effectiveness, with significant variation across regional contexts. Developed economies benefit from robust infrastructures, while developing regions face resource constraints that limit participation in innovation networks. Comparative insights highlight best practices such as corporate accelerators, digital collaboration platforms, and multicultural leadership training. This review concludes that advancing KM in open innovation requires investments in digital infrastructure, inclusive leadership, and collaborative frameworks.

Keywords: Knowledge Management, Open Innovation, Digital Platforms, Communities Of Practice, Organizational Adaptability, Collaborative Innovation, Global Knowledge Networks.



This is an open access article under the
CC-BY 4.0 license

INTRODUCTION

In recent years, knowledge management (KM) within open innovation networks has become a focal point of scholarly and managerial interest, reflecting the broader transformation of innovation ecosystems worldwide. As organizations increasingly transition from closed innovation models to collaborative frameworks, the management of knowledge across diverse institutional, cultural, and geographical contexts has emerged as both an opportunity and a challenge. Scholars such as Väyrynen et al. (2017) and Naruetharadhol et al. (2020) emphasize that the integration of KM practices into open innovation systems is no longer optional but rather a necessity for sustaining competitiveness in an era of rapid technological change. Open innovation, as initially conceptualized by Chesbrough, underscores the permeability of organizational boundaries and the

reliance on external as well as internal knowledge flows to drive innovation. Within this paradigm, KM acts as the infrastructure through which these flows are captured, codified, shared, and leveraged for value creation, making it a critical determinant of organizational success.

The urgency of this issue is amplified by the increasing pace of digital transformation and globalization, which have significantly intensified the demand for cross-border knowledge collaboration. Álvarez-Meaza et al. (2020) argue that the convergence of innovation and sustainability—sometimes referred to as innovability—has expanded the role of KM from a supporting function to a central strategic capability. Enterprises are compelled not only to innovate rapidly but also to integrate principles of sustainability into their innovation processes. The evolving landscape thus situates KM as a dual enabler of innovation and sustainability, fostering inclusive participation in global knowledge networks. Within these dynamics, the integration of KM frameworks provides firms with the ability to navigate complexity, manage uncertainty, and bridge institutional differences, positioning them more effectively within competitive global markets.

Recent empirical data illustrate the magnitude of the challenges confronting organizations. Approximately 53% of firms report persistent difficulties in knowledge sharing across international borders, often due to variations in cultural norms, institutional practices, and contextual expectations (Nawaz et al., 2024). These obstacles undermine the effectiveness of collaborative initiatives and highlight the structural and cultural barriers inherent in global knowledge networks. In parallel, empirical studies such as those conducted by Vega and Paula (2020) underscore the growing linkage between innovation practices and sustainability outcomes. Firms that succeed in aligning KM with sustainable innovation not only achieve competitive differentiation but also contribute to broader societal and environmental goals. Smolinski (2024) reinforces this point by noting that optimized KM frameworks can mitigate disparities in knowledge accessibility, thereby fostering greater equity and inclusivity in global innovation ecosystems.

The role of digital platforms in enabling and complicating KM practices has also attracted considerable scholarly attention. Jain and Sangal (2025) highlight that platforms such as GitHub and Innocentive serve as vital infrastructures for collaborative knowledge exchange and co-creation among diverse stakeholders. These platforms enhance transparency, speed, and scalability of knowledge flows, enabling firms of varying sizes and capacities to participate meaningfully in innovation processes. However, they also pose risks related to data security, intellectual property protection, and governance of shared knowledge resources. These challenges have been exacerbated during global crises such as the COVID-19 pandemic, which intensified reliance on digital collaboration while simultaneously exposing vulnerabilities in existing KM and innovation systems (Bhattacharyya & Thakre, 2021). The pandemic has thus acted as both a catalyst and a stress test for KM practices, revealing the strengths and limitations of current approaches.

Despite these advances, theoretical challenges remain pronounced. Randhawa et al. (2016) and Santa et al. (2024) observe that the literature on KM in open innovation networks is fragmented, often drawing on disparate frameworks such as the Resource-Based View (RBV) and Dynamic Capabilities without integrating them into a coherent conceptual whole. This fragmentation

complicates efforts to develop unified models that capture the complexity of knowledge flows in digital and networked environments. Väyrynen et al. (2017) and Naruetharadhol et al. (2020) further argue that existing theories have not been adequately adapted to account for the rapid, non-linear dynamics of contemporary digital ecosystems, leaving gaps in our understanding of how KM practices evolve in response to shifting technological and organizational landscapes.

Practical barriers compound these theoretical limitations. Cultural heterogeneity, organizational silos, and misaligned incentives frequently hinder knowledge sharing and collaboration within and across organizations (Engelsberger et al., 2021). While mechanisms such as Communities of Practice (CoPs) and digital collaboration platforms have been implemented to address these challenges, their success has been uneven (Almeida & Campos, 2021; Pohjola, 2015). In many cases, organizations lack the strategic alignment or leadership commitment necessary to embed these mechanisms into their broader innovation strategies (Kupp et al., 2017). The result is a patchwork of partial solutions that fail to fully realize the transformative potential of KM in open innovation networks.

A further challenge concerns the measurement and evaluation of KM practices in relation to innovation outcomes. Vega and Paula (2020) and Vidmar et al. (2020) point out that empirical research in this domain often lacks robust quantitative assessments, leaving uncertainties about the causal links between KM initiatives and innovation performance. This gap limits the ability of practitioners to justify investments in KM systems and constrains the development of evidence-based best practices. Moreover, as Ober (2022) notes, the contextual variation across industries, firm sizes, and geographical regions complicates efforts to generalize findings, underscoring the need for more nuanced and tailored frameworks.

Literature also signals a critical gap in understanding how digital collaboration can be governed to balance openness with control. Jain and Sangal (2025) emphasize that while digital platforms facilitate unprecedented levels of openness, they also introduce vulnerabilities that require careful management. Träskman and Skoog (2021) argue that the tension between transparency and protection remains unresolved, raising questions about how organizations can safeguard proprietary knowledge while participating in open networks. This governance dilemma underscores the need for integrative models that account for both the opportunities and risks inherent in digital KM practices.

Taken together, these theoretical and practical challenges highlight a significant gap in the literature. While the benefits of KM in open innovation networks are well-documented, the mechanisms through which these benefits are realized remain insufficiently understood. The lack of integrated theoretical frameworks, limited empirical validation, and underexplored contextual variations all point to the necessity of comprehensive narrative reviews. Such reviews can synthesize fragmented insights, identify emerging trends, and provide a roadmap for future research aimed at refining both theory and practice.

The primary objective of this review is to critically examine existing KM practices within open innovation networks, with particular attention to the frameworks, strategies, and contextual factors

that shape their effectiveness. Specifically, the review seeks to analyze how organizations leverage KM to enhance collaboration, overcome structural and cultural barriers, and balance openness with protection in digital environments. By synthesizing insights from a diverse body of literature, this study aims to clarify the role of KM as a strategic enabler of innovation and to provide actionable guidance for both scholars and practitioners.

The scope of this review encompasses both developed and developing contexts, with a particular emphasis on the differential experiences of small and medium-sized enterprises (SMEs) and large corporations. Väyrynen et al. (2017) and Vidmar et al. (2020) highlight that SMEs often face unique challenges in adopting KM practices due to resource constraints, while large firms benefit from greater capacities but may encounter difficulties in fostering agility and inclusivity. Additionally, this review considers sectoral variations, such as the application of KM in tourism and hospitality (Almeida & Campos, 2021; Vega & Paula, 2020), as well as geographical contexts that remain underexplored, including African markets where infrastructural and human resource limitations persist (Motari et al., 2015; Ober, 2022). Emerging economies in Latin America and Asia also constitute critical areas of investigation, as they present distinctive socio-economic conditions that influence the adoption and effectiveness of KM strategies (Naruetharadhol et al., 2020).

In sum, this introduction situates KM in open innovation networks as a complex and evolving field of inquiry, marked by significant opportunities and enduring challenges. By articulating the background, key issues, and research gaps, it establishes the foundation for a comprehensive review that not only consolidates existing knowledge but also charts pathways for advancing theory and practice. The ability of organizations to adapt to the demands of open innovation will depend on their capacity to refine KM practices, harness digital technologies, and cultivate inclusive collaborative cultures, thereby ensuring resilience and competitiveness in a rapidly changing global landscape.

METHOD

This study adopted a systematic narrative review approach to examine the existing body of literature on knowledge management (KM) within open innovation networks. The methodological design followed established protocols for conducting rigorous literature reviews while ensuring flexibility to capture the interdisciplinary nature of KM and open innovation research. Given the cross-sectoral and cross-disciplinary scope of the topic, multiple databases were employed to secure comprehensive coverage of relevant studies. The selection of databases was based on their indexing breadth, disciplinary focus, and reputation for high-quality peer-reviewed content. The chosen databases included Scopus, Web of Science, Google Scholar, and PubMed. Each of these sources was selected strategically to ensure both depth and breadth in the literature search.

Scopus provided access to a wide range of peer-reviewed articles across disciplines such as management, economics, and organizational studies, making it especially suitable for the exploration of KM practices in corporate and innovation contexts. Web of Science offered

additional rigor by indexing high-impact journals that frequently publish seminal contributions to innovation studies, thereby complementing Scopus in capturing a more selective but authoritative body of literature (Randhawa et al., 2016; Álvarez-Meaza et al., 2020). Google Scholar was used to broaden the scope of the review by including conference papers, dissertations, theses, and books that may not be systematically indexed in the more traditional databases (Naruetharadhol et al., 2020). Finally, PubMed was incorporated to account for interdisciplinary overlaps, particularly where knowledge management intersects with healthcare innovation, biomedical research, or the adoption of knowledge-sharing systems in health-related fields (Archibald et al., 2021). This multipronged approach ensured that the review captured the full diversity of scholarly and practical perspectives.

The literature search relied on carefully designed keyword strategies, using Boolean operators to refine and structure queries. The primary keywords were drawn from conceptual and thematic categories central to the research focus. These included "Knowledge Management," "Open Innovation," "Knowledge Sharing," "Innovation Networks," "Digital Platforms," "Collaborative Innovation," "SMEs," and "Communities of Practice." Boolean operators such as AND, OR, and NOT were employed to combine or exclude terms and ensure precision in search results. For example, a search query was formulated as ("Knowledge Management" AND "Open Innovation" AND ("Knowledge Sharing" OR "Innovation Networks")) NOT "Health Care." This strategy allowed for the identification of studies that explicitly examined the relationship between KM and open innovation while excluding those focusing exclusively on unrelated domains. Additional refinements included limiting publication years to the period between 2010 and 2025 to ensure the review incorporated contemporary insights reflective of recent technological, organizational, and economic transformations.

Once initial search results were retrieved, inclusion and exclusion criteria were applied to screen for relevance and quality. Inclusion criteria comprised studies published in peer-reviewed journals, conference proceedings, and scholarly books that directly addressed the intersection of knowledge management and open innovation. Both conceptual and empirical studies were considered, encompassing methodologies such as case studies, surveys, experimental designs, and mixed-method approaches. Studies were included if they explicitly discussed frameworks, strategies, or practices of KM within open innovation networks or if they contributed to understanding the barriers, enablers, and outcomes of KM in collaborative innovation contexts. Exclusion criteria, on the other hand, eliminated articles that were purely descriptive without analytical depth, publications outside the scope of KM and innovation, or studies focusing narrowly on unrelated sectors without offering transferable insights. Non-English publications were excluded to maintain consistency in the review process, though abstracts in English were occasionally used to evaluate relevance.

The process of literature selection was carried out in multiple stages to ensure methodological rigor. In the first stage, search results from each database were exported into reference management software for de-duplication. This step eliminated redundant entries across databases and facilitated a clean dataset for review. The second stage involved title and abstract screening, where articles were evaluated for their alignment with the research objectives. At this stage,

irrelevant articles were excluded, while potentially relevant studies were flagged for full-text review. The third stage involved detailed examination of the full texts to assess the methodological robustness, relevance of findings, and contribution to the research questions. Articles that demonstrated clear engagement with the conceptual and empirical dimensions of KM in open innovation were retained. Throughout this process, two reviewers independently assessed the articles to minimize selection bias and enhance reliability.

The final dataset comprised studies that collectively represented a diversity of methodological approaches and industrial contexts. Case studies provided rich qualitative insights into the implementation of KM practices within specific organizational or sectoral contexts. Survey-based studies contributed quantitative evidence on the relationships between KM strategies, open innovation outcomes, and organizational performance. Experimental and quasi-experimental designs, though less common, offered controlled insights into the causal mechanisms underlying KM practices. Narrative and systematic reviews were also included where they synthesized large bodies of literature and identified conceptual gaps or emerging trends. Together, these diverse methodological contributions allowed the review to capture both breadth and depth, providing a comprehensive overview of the field.

Evaluation of the included studies was guided by criteria focusing on methodological transparency, theoretical contribution, and practical relevance. Articles were assessed based on their clarity in defining KM and open innovation constructs, the appropriateness of their methodological design, and the strength of their empirical evidence. Studies that proposed or tested theoretical frameworks, such as the Resource-Based View, Dynamic Capabilities, or Communities of Practice, were given particular attention due to their potential for advancing theoretical integration. In addition, studies that addressed contemporary challenges such as digital platform governance, cultural diversity in global innovation networks, or sustainability-driven innovation were prioritized as they directly align with the emerging themes in this review.

The iterative process of searching, screening, and evaluation ensured that the resulting corpus of literature was both representative and analytically robust. By combining multiple databases, a carefully designed keyword strategy, explicit inclusion and exclusion criteria, and a rigorous selection process, this methodology offers a comprehensive foundation for synthesizing the complex and fragmented research on KM in open innovation networks. The methodological framework not only ensured the quality and relevance of the reviewed literature but also provides a replicable model for future reviews in adjacent domains. Ultimately, this methodological rigor positions the review to contribute meaningfully to both scholarly discourse and practical applications in managing knowledge for innovation.

RESULT AND DISCUSSION

The findings of this narrative review reveal a series of thematic patterns, influencing factors, and global comparisons that collectively illuminate the evolving role of knowledge management (KM) in open innovation (OI) networks. Through an analysis of diverse empirical and conceptual

studies, several dominant themes emerge, ranging from the integration of digital technologies to collaborative practices and organizational adaptability. These results also emphasize the interplay of organizational, technological, and cultural factors in shaping the effectiveness of KM within OI contexts, while regional variations underscore the importance of context-specific strategies.

Thematic Findings

A central theme that emerges from the literature is the integration of digital platforms into innovation processes. Digital technologies, such as collaborative platforms and online repositories, enable organizations to source, manage, and share knowledge more effectively across organizational and national boundaries. Jain and Sangal (2025) highlight how platforms such as GitHub and Innocentive foster collaboration by connecting diverse stakeholders, thereby facilitating co-creation and knowledge exchange. Empirical evidence suggests that organizations leveraging these platforms demonstrate higher levels of innovation performance, as they can access external expertise and adapt more rapidly to changing market conditions (Smolinski, 2024). This indicates that digital platforms have not only reshaped knowledge-sharing practices but also redefined the boundaries of organizational innovation systems.

Another theme that consistently appears in the literature is the role of collaborative environments in fostering knowledge sharing. Communities of Practice (CoPs) are particularly emphasized as mechanisms that bring together individuals from diverse backgrounds to collectively solve problems and develop new competencies. Engelsberger et al. (2021) and Almeida and Campos (2021) demonstrate that CoPs not only stimulate creativity but also create competitive advantages by embedding collaborative learning into organizational cultures. The establishment of co-development initiatives between SMEs and larger corporations further exemplifies how collaboration can bridge resource disparities and accelerate innovation (Naruetharadhol et al., 2020). These findings suggest that collaborative knowledge-sharing structures enhance the resilience of organizations, enabling them to adapt more effectively to external challenges.

Organizational adaptability also emerges as a critical theme, particularly in contexts of uncertainty and disruption. Firms that adopt agile methodologies and embrace open innovation are better able to withstand shocks such as those experienced during the COVID-19 pandemic (Bhattacharyya & Thakre, 2021). Väyrynen et al. (2017) and Pohjola (2015) argue that a culture of continual learning and flexibility is essential for maintaining competitiveness in turbulent environments. Evidence indicates that organizations capable of integrating adaptive KM practices are more likely to sustain long-term innovation performance, highlighting adaptability as a defining characteristic of successful open innovation networks.

Influencing Factors

The literature identifies three categories of factors that significantly influence the effectiveness of KM in OI networks: organizational, technological, and cultural.

Organizational factors are found to be central to the success of KM initiatives. Leadership commitment, strategic alignment, and structural configurations are highlighted as determinants of effective knowledge sharing. Sattiraju et al. (2025) argue that leadership support not only provides strategic clarity but also fosters trust and motivation among employees to engage in open

innovation practices. Organizational structure further influences KM outcomes, with flatter hierarchies facilitating quicker decision-making and more effective collaboration compared to rigid hierarchical models (Väyrynen et al., 2017). This aligns with findings from corporate accelerator programs, which often promote flatter, more agile structures to integrate external startups into innovation processes (Kupp et al., 2017).

Technological factors are equally crucial. Firms that adopt cloud-based platforms, advanced data analytics, and collaborative software tools are better positioned to manage knowledge flows effectively. Smolinski (2024) demonstrates that technology adoption enhances responsiveness to market demands by allowing firms to integrate internal and external knowledge seamlessly. Jain and Sangal (2025) further reinforce that digital platforms not only facilitate collaboration but also expand the scale and scope of innovation by reducing geographical and temporal barriers. However, technological adoption is uneven across regions, highlighting the importance of infrastructural capacity in shaping KM effectiveness.

Cultural factors, particularly organizational culture, significantly influence KM practices. Cultures that promote openness, risk-taking, and inclusivity are found to be more conducive to innovation (Engelsberger et al., 2021). Almeida and Campos (2021) show that fostering a collaborative culture within sectors such as tourism enhances knowledge sharing and innovation outcomes. However, multinational firms frequently face challenges when integrating diverse knowledge systems across regions, with cultural differences acting as barriers to effective collaboration (Vega & Paula, 2020). This underscores the need for organizations to cultivate intercultural competencies and establish governance mechanisms that accommodate diversity while promoting collective goals.

Variation Across National and Regional Contexts

The influence of organizational, technological, and cultural factors varies significantly across national and regional contexts. In technologically advanced regions such as North America and Europe, firms benefit from strong digital infrastructures that support the effective implementation of KM tools (Randhawa et al., 2016). In contrast, developing regions often encounter infrastructural and resource constraints that impede the adoption of similar practices (Kupp et al., 2017; Väyrynen et al., 2017). Александровна and Андреевна (2024) highlight that limited digital capabilities in certain regions necessitate tailored approaches to KM that account for infrastructural deficiencies.

Cultural differences also play a critical role in shaping KM practices across regions. Vega and Paula (2020) observe that collectivist cultures often exhibit greater support for collaborative knowledge-sharing practices compared to individualistic cultures, where knowledge may be guarded more closely. Mainka et al. (2016) reinforce this by demonstrating how civic participation in smart cities varies across cultural contexts, influencing the extent to which open innovation practices can be successfully implemented. These findings suggest that cultural orientation must be carefully considered when designing KM strategies for multinational contexts.

Global Comparison

Comparative analysis between developing and developed regions reveals both convergences and divergences in KM and OI practices. In the African region, studies demonstrate that innovation

capacity is frequently hindered by infrastructural deficits, limited human resources, and regulatory challenges (Motari et al., 2015; Naruetharadhol et al., 2020). For example, ethical review systems in public health contexts often create additional barriers to innovation, as transparent and collaborative processes are difficult to achieve within constrained institutional settings (Motari et al., 2015). By contrast, organizations in North America and Europe operate within more established regulatory frameworks and enjoy greater access to technological infrastructures, enabling them to leverage KM systems more effectively (Randhawa et al., 2016; Kupp et al., 2017).

SMEs in Africa also face acute resource constraints that limit their participation in global innovation networks (Naruetharadhol et al., 2020). In contrast, SMEs in developed economies benefit from stronger support systems, including access to venture capital, mentorship programs, and established networks, which enhance their capacity for innovation (Randhawa et al., 2016). Nawaz et al. (2024) highlight that startups empowered through strategic KM practices are more likely to achieve sustainable growth, emphasizing the disparity in resources and support systems between regions.

Despite these disparities, best practices from developed contexts offer pathways for adaptation in resource-constrained regions. Corporate accelerators, as described by Kupp et al. (2017) and Barrett and Dooley (2024), provide models for integrating startups into established ecosystems, offering mentorship, resources, and technology access. Collaborative platforms have been shown to bridge geographical and resource gaps, enabling firms in developing regions to connect with global networks and co-create solutions (Jain & Sangal, 2025). Almeida and Campos (2021) further demonstrate how CoPs can stimulate innovation in localized contexts, suggesting that such models can be adapted for African markets to foster collaboration among businesses, academia, and government actors.

Multicultural leadership is another best practice highlighted in developed contexts that can be transferred to emerging regions. Engelsberger et al. (2021) emphasize that multicultural teams enhance creativity and innovation by incorporating diverse perspectives. Training programs that develop multicultural competencies could strengthen organizations in Africa and other emerging markets, equipping them to address context-specific challenges with innovative, inclusive solutions.

Summary of Findings

Overall, the findings underscore the transformative role of digital technologies, collaborative environments, and organizational adaptability in advancing KM within OI networks. The interplay of organizational, technological, and cultural factors highlights the complexity of implementing KM practices, while global comparisons reveal the need for context-sensitive strategies. Best practices from developed regions, such as corporate accelerators, collaborative platforms, CoPs, and multicultural leadership, provide valuable models for adaptation in resource-constrained contexts. These results collectively affirm that while KM in open innovation networks is shaped by global trends, its successful implementation requires sensitivity to local conditions and systemic challenges.

The findings of this narrative review largely align with the extant literature on knowledge management (KM) in open innovation (OI), affirming earlier insights while also exposing points

of divergence that highlight persistent gaps in research and practice. Across different organizational and regional contexts, the reviewed studies confirm the centrality of KM strategies in enabling open innovation, especially within a rapidly evolving technological and global environment. At the same time, systemic and structural challenges remain entrenched, suggesting that organizational, cultural, and infrastructural factors continue to influence the effectiveness of KM practices.

A strong point of convergence across studies is the importance of digital platforms and collaborative frameworks as enablers of knowledge exchange and innovation. Jain and Sangal (2025) emphasize how platforms such as GitHub and Innocentive foster collaboration among diverse stakeholders, leading to improved innovation performance. Similar findings by Almela et al. (2023) reinforce the notion that digital infrastructures provide essential pathways for sourcing external knowledge, managing distributed teams, and enabling co-creation across institutional boundaries. Engelsberger et al. (2021) also argue that organizations embracing digital platforms and relational leadership practices are better positioned to cultivate collaborative environments that strengthen KM outcomes. These conclusions resonate with earlier arguments that the integration of technological tools into KM is indispensable for optimizing knowledge flows in contemporary organizational ecosystems (Smolinski, 2024). Yet, while such results are prominent in developed economies with advanced digital infrastructures, the literature also reveals critical divergences. In developing regions, infrastructural constraints and limited technological capacity impede the adoption of these platforms, thus restricting the potential of digital technologies to foster open innovation (López & Yepes, 2024).

The review further highlights the complementary role of multicultural skills and relational leadership in advancing KM and OI. Engelsberger et al. (2021) document that organizations prioritizing intercultural competencies and inclusive leadership practices report greater success in knowledge sharing and collaborative innovation. These findings align with the broader argument that organizational cultures encouraging openness, diversity, and risk-taking are more conducive to innovation (Vega & Paula, 2020). Nevertheless, divergences arise as many organizations struggle to embed such cultures due to entrenched silos, resistance to change, or lack of leadership commitment. Consequently, the successful implementation of multicultural and relational leadership practices remains uneven across sectors and geographies.

Systemic and structural factors explain much of the persistence of these challenges. Organizational silos and rigid hierarchies are consistently identified as barriers to open innovation, as they restrict the free flow of information and limit dynamic engagement with external partners. Vega and Paula (2020) observe that hierarchical organizational structures undermine the flexibility needed to embrace open innovation, while Panneerselvam et al. (2025) note that silos inhibit the establishment of trust-based collaborations. Cultural challenges add another systemic layer to the problem, as multinational firms frequently encounter difficulties in reconciling diverse knowledge systems. Träskman and Skoog (2021) argue that without culturally sensitive approaches to leadership, misunderstandings and communication barriers can derail KM initiatives in cross-border innovation networks.

In addition to organizational and cultural impediments, infrastructural deficiencies remain a critical determinant of KM effectiveness, particularly in developing contexts. López and Yepes (2024)

note that inadequate access to digital resources and insufficient training constrain the ability of organizations to engage fully in open innovation practices. Almela et al. (2023) similarly observe that even where organizations adopt collaborative strategies, the absence of robust infrastructures prevents them from maximizing innovation potential. These systemic challenges underscore the interdependence of technological capacity, organizational design, and cultural practices in shaping KM outcomes.

Several solutions emerge from the literature as potential avenues for addressing these entrenched barriers. One prominent strategy is the establishment of corporate accelerators, which serve as structured programs that link established firms with startups and smaller enterprises. Kupp et al. (2017) demonstrate that accelerators foster collaboration by providing mentorship, financial resources, and technological support, thereby enhancing innovation capacity across organizational boundaries. Almela et al. (2023) expand on this by showing that accelerators not only mitigate risks but also create vibrant ecosystems where KM practices can flourish.

The development of Communities of Practice (CoPs) also emerges as a highly effective intervention. Almeida and Campos (2021) document that CoPs stimulate organizational learning, encourage cross-functional collaboration, and enhance responsiveness to dynamic market conditions. Empirical evidence indicates that organizations with active CoPs report improved performance and higher levels of employee engagement. Engelsberger et al. (2021) further argue that CoPs foster relational trust, which is essential for sustaining long-term collaboration and knowledge exchange. Thus, CoPs represent a scalable and adaptable mechanism for embedding KM into daily organizational practices.

Investment in digital infrastructure remains another critical solution. The adoption of collaborative technologies, cloud platforms, and advanced data analytics tools significantly enhances knowledge transfer and operational agility (Jain & Sangal, 2025; Smolinski, 2024). Empirical findings consistently show that organizations with robust digital infrastructures are more capable of integrating internal and external knowledge, thereby accelerating innovation outcomes. Nevertheless, such investments must be paired with policies that ensure accessibility and inclusivity, particularly in contexts where digital divides persist. Without equitable access to technological resources, digital platforms risk reinforcing existing disparities rather than enabling inclusive innovation.

Leadership training focused on multicultural competencies represents an additional pathway to overcoming cultural barriers. Engelsberger et al. (2021) emphasize that organizations implementing programs to develop inclusive leadership skills witness stronger team dynamics and more effective KM practices. These findings suggest that cultivating relational leadership and intercultural awareness can mitigate the systemic challenges associated with multinational and multicultural collaborations. Training programs that emphasize empathy, reciprocity, and shared value creation can strengthen trust and facilitate more open exchanges of knowledge.

While these solutions provide promising avenues for improvement, the review also underscores the limitations of existing research. A significant limitation lies in the fragmentation of theoretical frameworks. Randhawa et al. (2016) and Santa et al. (2024) observe that KM and OI research often draws on disparate theories such as the Resource-Based View and Dynamic Capabilities without

integrating them into a cohesive model. This fragmentation restricts the ability of scholars to generalize findings or propose unified strategies for KM in open innovation contexts. Future research should focus on refining integrative frameworks that account for the dynamic interplay of organizational, technological, and cultural factors.

Another limitation pertains to the paucity of empirical studies in developing contexts. While much of the existing literature emphasizes practices in technologically advanced regions, there remains limited empirical evidence on how KM and OI operate in resource-constrained environments. Motari et al. (2015) and Naruetharadhol et al. (2020) highlight the specific challenges faced by African SMEs, yet more comparative and sector-specific research is needed to develop tailored frameworks for these contexts. Additionally, methodological limitations are evident in the predominance of case studies and surveys, with fewer experimental or longitudinal designs that can establish causal links between KM practices and innovation outcomes. Expanding methodological diversity would enhance the robustness and applicability of future findings.

Overall, the findings of this review reaffirm the significance of KM in enabling open innovation while also underscoring the persistence of systemic barriers that require organizational, technological, and cultural interventions. The alignment with existing literature highlights the progress made in understanding KM practices, whereas divergences reveal the areas where further investigation is necessary. By addressing these systemic and structural issues through targeted solutions such as accelerators, CoPs, digital investments, and leadership training, organizations can better navigate the complexities of knowledge management in open innovation networks. Future research should prioritize theoretical integration, methodological expansion, and greater attention to under-researched contexts to advance both scholarly understanding and practical application in this domain.

CONCLUSION

This narrative review demonstrates that knowledge management (KM) plays a decisive role in enabling open innovation (OI) across diverse organizational and regional contexts. The integration of digital platforms has redefined how organizations access and share knowledge, while collaborative environments such as Communities of Practice (CoPs) enhance creativity and collective problem-solving. Organizational adaptability, supported by leadership commitment and strategic alignment, further reinforces innovation capacity in turbulent environments. Nevertheless, systemic barriers such as rigid hierarchies, cultural heterogeneity, and infrastructural deficiencies continue to hinder the effectiveness of KM practices, particularly in developing regions. These challenges highlight the urgency of strategic interventions and sustained investments to strengthen both digital and human capacities for innovation.

Policy measures and organizational strategies must prioritize the expansion of digital infrastructure, the promotion of corporate accelerators, and the cultivation of inclusive and multicultural leadership practices. Such approaches can foster environments conducive to knowledge sharing and ensure that both large firms and SMEs can actively participate in innovation ecosystems. Future research should focus on refining integrative theoretical frameworks, broadening

methodological approaches, and exploring under-researched contexts such as African and Latin American markets to provide more tailored solutions. Ultimately, advancing KM in open innovation requires not only technological improvements but also cultural and structural transformations. By embracing collaborative strategies, investing in digital platforms, and fostering inclusive cultures, organizations can overcome systemic barriers and achieve sustainable innovation outcomes.

REFERENCE

- Almeida, S., & Campos, A. (2021). New avenues for business competitiveness: the case of a community of practice in the hotel sector. *International Journal of Culture Tourism and Hospitality Research*, 16(1), 20-34. <https://doi.org/10.1108/ijcthr-12-2020-0285>
- Almela, V., Addo, K., Corbett, J., Cumberbatch, J., Dash, J., Marsh, R., ... & Tompkins, E. (2023). Science and policy lessons learned from a decade of adaptation to the emergent risk of sargassum proliferation across the tropical Atlantic. *Environmental Research Communications*, 5(6), 061002. <https://doi.org/10.1088/2515-7620/acd493>
- Álvarez-Meaza, I., Pikatza-Gorrotxategi, N., & Belver, R. (2020). Sustainable business model based on open innovation: case study of Iberdrola. *Sustainability*, 12(24), 10645. <https://doi.org/10.3390/su122410645>
- Archibald, M., Wiebe, S., Rieger, K., Linton, J., & Woodgate, R. (2021). Protocol for a systematic review of living labs in healthcare. *BMJ Open*, 11(2), e039246. <https://doi.org/10.1136/bmjopen-2020-039246>
- Barrett, G., & Dooley, L. (2024). Open social innovation in response to grand challenges: promotor influence as change agent. *R and D Management*, 55(2), 405-419. <https://doi.org/10.1111/radm.12695>
- Bhattacharyya, S., & Thakre, S. (2021). Coronavirus pandemic and economic lockdown; study of strategic initiatives and tactical responses of firms. *International Journal of Organizational Analysis*, 29(5), 1240-1268. <https://doi.org/10.1108/ijoa-05-2020-2198>
- Engelsberger, A., Cavanagh, J., Bartram, T., & Halvorsen, B. (2021). Multicultural skills in open innovation: relational leadership enabling knowledge sourcing and sharing. *Personnel Review*, 51(3), 980-1002. <https://doi.org/10.1108/pr-10-2019-0539>
- Jain, S., & Sangal, S. (2025). The role of digital technologies in open innovation. pp. 345-392. <https://doi.org/10.4018/979-8-3693-9266-9.ch012>

- Kupp, M., Marval, M., & Borchers, P. (2017). Corporate accelerators: fostering innovation while bringing together startups and large firms. *Journal of Business Strategy*, 38(6), 47-53. <https://doi.org/10.1108/jbs-12-2016-0145>
- López, S., & Yepes, V. (2024). Visualizing the future of knowledge sharing in SMEs in the construction industry: a VOSviewer analysis of emerging trends and best practices. *Advances in Civil Engineering*, 2024(1). <https://doi.org/10.1155/2024/6657677>
- Mainka, A., Castelnovo, W., Miettinen, V., Bech-Petersen, S., Hartmann, S., & Stock, W. (2016). Open innovation in smart cities: civic participation and co-creation of public services. *Proceedings of the Association for Information Science and Technology*, 53(1), 1-5. <https://doi.org/10.1002/pra2.2016.14505301006>
- Motari, M., Ota, M., & Kirigia, J. (2015). Readiness of ethics review systems for a changing public health landscape in the WHO African region. *BMC Medical Ethics*, 16(1). <https://doi.org/10.1186/s12910-015-0078-9>
- Naruetharadhol, P., Srisathan, W., & Ketkaew, C. (2020). The effect of open innovation implementation on small firms' propensity for inbound and outbound open innovation practices. <https://doi.org/10.3233/faia200638>
- Nawaz, R., Hina, M., Sharma, V., Srivastava, S., & Briamonte, M. (2024). Unleashing knowledge arbitrage potential: empowering startups through knowledge management. *Journal of Knowledge Management*, 28(11), 221-254. <https://doi.org/10.1108/jkm-06-2023-0503>
- Ober, J. (2022). Open innovation in the ICT industry: substantiation from Poland. *Journal of Open Innovation Technology Market and Complexity*, 8(3), 158. <https://doi.org/10.3390/joitmc8030158>
- Panneerselvam, S., Arokiasamy, E., & Balaraman, K. (2025). A.D.A.P.T: toward an integrative framework to (un)hiding knowledge in organizations. *Strategy and Leadership*, 53(4), 375-392. <https://doi.org/10.1108/sl-07-2024-0072>
- Pohjola, I. (2015). Community of practice as a tool for company performance in strategic context. *Journal of Innovation Management*, 3(1), 122-138. https://doi.org/10.24840/2183-0606_003.001_0010
- Randhawa, K., Wilden, R., & Hohberger, J. (2016). A bibliometric review of open innovation: setting a research agenda. *Journal of Product Innovation Management*, 33(6), 750-772. <https://doi.org/10.1111/jpim.12312>
- Santa, S., Tagliazucchi, G., & Marchi, G. (2024). From practice to theory gaps: a roadmap from case studies analysis on living labs. *Journal of Innovation Management*, 12(3), 202-225. https://doi.org/10.24840/2183-0606_012.003_0009

- Sattiraju, V., Pallela, R., Sircar, A., & Janodia, M. (2025). Technology business incubators ecosystem in India: barriers to the efficient functioning. *Journal of Science and Technology Policy Management*. <https://doi.org/10.1108/jstpm-08-2023-0141>
- Smolinski, J. (2024). Navigating the digital frontier: emerging trends in digital innovation management for 2023 and beyond. *International Journal of Innovation and Technology Management*, 21(04). <https://doi.org/10.1142/s0219877024500329>
- Träskman, T., & Skoog, M. (2021). Performing openness: how the interplay between knowledge sharing and digital infrastructure creates multiple accountabilities. *Journal of Strategy and Management*, 15(2), 194-219. <https://doi.org/10.1108/jsma-12-2020-0359>
- Vega, I., & Paula, L. (2020). Scientific mapping on the convergence of innovation and sustainability (innovability): 1990–2018. *Kybernetes*, 50(10), 2917-2942. <https://doi.org/10.1108/k-05-2020-0328>
- Vidmar, M., Rosiello, A., Vermeulen, N., Williams, R., & Dines, J. (2020). New space and agile innovation: understanding transition to open innovation by examining innovation networks and moments. *Acta Astronautica*, 167, 122-134. <https://doi.org/10.1016/j.actaastro.2019.09.029>
- Väyrynen, H., Helander, N., & Vasell, T. (2017). Knowledge management for open innovation: comparing research results between SMEs and large companies. *International Journal of Innovation Management*, 21(05), 1740004. <https://doi.org/10.1142/s1363919617400047>
- Александровна, А., & Андреевна, Е. (2024). Анализ больших данных проектных студенческих сообществ в работе со знаниявыми системами: когнитивная визуализация. *Практика Journal of Visual Semiotics*, 4(42), 33-53. <https://doi.org/10.23951/2312-7899-2024-4-33-53>