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Artificial intelligence in Knowledge Management: Balancing AI and Human Processes in Remote and Hybrid Work

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ABSTRACT:

Tutkielma tarkastelee generatiivisen tekoälyn integraatiota organisaatioiden tietojohtamisessa etä- ja hybridityön kontekstissa. Tutkielman tavoitteena on selvittää, kuinka organisaatiot voisivat hyödyntää tekoälyä tietojohtamisessa samalla säilyttäen ihmislähtöiset tiedonluomisprosessit etä- ja hybridityöympäristöissä.

Tutkielma on narratiivinen kirjallisuuskatsaus, jossa aineistoa tarkastellaan Nonakan ja Takeuchin tiedon luomisen prosessimallin eli SECI-mallin sekä Ba-käsitteen avulla. Analyysi osoittaa, että tekoäly kykenee parantamaan eksplisiittisen tiedon yhdistämisvaiheita, mutta se ei pysty korvaamaan inhimillisiä prosesseja sosialisaatio- ja ulkoistamisvaiheissa, joissa hiljainen tieto syntyy ja kehittyy.

Tässä tutkielmassa todetaan, että etä- ja hybridityöympäristöt luovat epätasapainon tiedonluomisprosesseissa suosimalla asynkronista, generatiivisen tekoälyn välittämää kommunikaatiota samalla heikentäen synkronista vuorovaikutusta, dialogia ja epämuodollista kanssakäymistä, jotka ovat välttämättömiä hiljaiselle tiedolle. Kun organisaatiot ottavat käyttöön tekoälyä näissä jo muutenkin haastavissa konteksteissa ilman harkittuja ihmislähtöisiä käytäntöjä, tämä johtaa tiedonluomiskyvyn heikkenemiseen, ei sen edistymiseen.

Tutkielmassa esitetään konkreettisia organisaation käytäntöjä, kuten mentorointiohjelmat ja ammatillisten yhteisöjen kehittäminen sosialisaatiovaiheelle, strukturoidut reflektio- ja dialogisessiot ulkoistamisvaiheelle, sekä säilyneet inhimillisen valvonnan ja koulutuksen muodot yhdistämis- ja sisäistämisvaiheille. Tutkielma esittää, että organisaatiot voivat hyödyntää tekoälyä tehokkaasti vain, jos ne samalla rakentavat tarkoituksellisesti ihmislähtöisiä käytäntöjä, jotka säilyttävät luottamuksen, vuorovaikutuksen ja jaetun merkityksellisyyden.

Johtopäätöksenä tutkielma osoittaa, että tekoälyn omaksuminen ilman harkittuja ihmislähtöisiä käytäntöjä ei johda tietojohtamisen tehokkuuteen, vaan edistää tiedonluomiskyvyn heikkenemistä. Organisaatioiden, jotka toimivat etä- ja hybridityöympäristöissä, on tarkoituksellisesti suunniteltava kommunikaatiokäytännöt, luotava tilaa vuorovaikutukselle ja rakennettava luottamus strategisena organisaation käytäntönä, jotta tekoälyn tehokkuusedut voidaan saavuttaa samalla kun säilytetään syvä, ihmislähtöinen tiedon luominen.

KEYWORDS: Knowledge Management, Generative Artificial Intelligence, Remote Work, Hybrid Work, SECI-model, Explicit Knowledge, Tacit Knowledge

Contents

Figures

Tables

1 Introduction

Knowledge management helps individuals and entire organizations accomplish their strategic and operational goals by enabling knowledge creation (North & Kumta, 2014, p. 6). By building a learning organization, knowledge management contributes to changing the quality of competition and increasing operational efficiency (North & Kumta, 2014, p. 6). However, knowledge management is evolving as generative artificial intelligence presents new opportunities for improving its application across various industries and businesses (Alavi et al., 2024, p. 2).

Today, artificial intelligence can take on tasks and responsibilities that were exclusive to humans, which has the potential to significantly alter organizational processes and practices (Ramaul et al., 2025, p. 672). By integrating data gathered by multiple digital technologies within an organization, artificial intelligence can offer insights across many areas of organizations and even enable new integrations from the data (Ramaul et al., 2025, p. 797). This potential brings challenges as well as demand for further study (Alavi et al., 2024, p. 2). According to Bolisani & Nakash (2024, p. 544) knowledge management has been shaped by two distinct perspectives. One of them views knowledge management primarily as a technological challenge and focuses on systems that can efficiently process explicit knowledge. The other view emphasizes the human dimension and describes the core challenge as enabling people to create and share their tacit knowledge.

Recent research on generative artificial intelligence reveals how these technologies interact with fundamental knowledge processes in ways that both advance and complicate this divide. Cerchione et al. (2026, pp. 12–13) argue that generative artificial intelligence tools can simulate knowledge exchange through mimicking socialization, but these simulated conversations lack authentic interpersonal connection and depth that is essential to genuine tacit knowledge transfer. As organizations adopt AI to enhance knowledge management, they risk automating the explicit and measurable aspects of knowledge work while losing the human-centered processes that drive organizational learning and human knowledge sharing.

In the Nordic context, Antoniuk & Kolyada (2024, p. 130) explain that Northern European countries like Finland and Estonia tend to implement artificial intelligence technologies quicker because of their culture that promotes innovation. Finland, along with Sweden, are among the countries with a powerful digital infrastructure and a highly educated workforce. According to the article, these factors are linked to better integration of artificial intelligence into organizations. According to Nakash & Bouhnik (2023, pp. 1067–1068) at the same time, in the post COVID-19 society, many public and private organizations all over the world have started to embrace more flexible employment practices. Among these are remote work and the hybrid work model. The shift to working from home led to a decrease in synchronous communication like scheduled meetings and conversations but increased asynchronous communication, such as instant messaging. Puhakka et al. (2025, p. 2) note that remote and hybrid working has become a common approach in the field of knowledge work during recent years, and the degree to which remote work is available and utilized in knowledge-related jobs is unmatched. The current prevalence of remote work is no longer just the result of the COVID-19 pandemic since many employees and organizations are now discovering that hybrid and remote work represent a valuable opportunity (Puhakka et al., 2025, p. 2; Zajac et al., 2022, p. 284).

Companies limiting traffic in physical workplaces to only the personnel necessary for operations have transitioned a significant portion of the workforce to work remotely or in hybrid settings (Zajac et al., 2022, p. 284). However, remote work presents considerable challenges for knowledge processes, especially regarding the human interactions essential for transferring tacit knowledge. The remote work environment makes the incorporation of artificial intelligence into knowledge management both more appealing and riskier.

1.1 Research Questions and Objective of the Thesis

The primary objective of this descriptive study is to examine how artificial intelligence is used in organizational knowledge management and to identify human-centered

principles and organizational practices that preserve and strengthen human knowledge processes. Specifically, this thesis investigates both the opportunities and limitations of artificial intelligence in knowledge management, with particular attention to how AI affects human knowledge processes, such as tacit knowledge transfer and organizational learning. This examination is critical in remote and hybrid work environments, where these human-centered knowledge processes are already fragile to disruption by AI.

The research problem of this thesis is: How can organizations utilize artificial intelligence in knowledge management while maintaining human knowledge processes in hybrid and remote work environments? The research problem is addressed with three research questions:

1. How is artificial intelligence described and applied in organizational knowledge management?
2. What limitations and negative impacts of AI on human knowledge processes (e.g., tacit knowledge transfer and organizational learning) do the literature identify, and how are these amplified in remote/hybrid contexts?
3. What human-centered principles and organizational practices are proposed to balance artificial intelligence capabilities with human knowledge processes in remote and hybrid work settings?

The first question establishes how artificial intelligence is currently being described and applied in organizational knowledge management systems. This question provides a foundation by examining the existing landscape of artificial intelligence adoption and how AI's role is framed in knowledge work, including in distributed work arrangements. The second question examines the specific limitations and negative impacts that researchers have identified when AI systems are integrated into knowledge management, with special attention to how remote and hybrid work may intensify these risks. By examining challenges and risks, this question helps acknowledge where the technology-centered approach may undermine the human-centered elements essential to knowledge creation, especially when physical distance already strains those elements.

The third question addresses what human-centered principles and organizational practices are proposed to address these challenges.

1.2 Definitions of Key Terms

Knowledge management (KM)

Alavi & Leidner (2001, pp. 109–111) conceptualize knowledge management as the process of creating, storing/retrieving, transferring, and applying knowledge within an organization to enhance competency and performance. This shows that KM is not limited to managing documents or information systems, but it also involves knowledge application across organizational contexts (Alavi & Leidner, 2001, p. 111).

Artificial intelligence (AI)

Artificial intelligence refers to the creation of computer systems that can perform tasks traditionally associated with human intelligence. These tasks include data analysis, pattern recognition, and decision making (Stone et al., 2024, p. 1). Generative artificial intelligence uses deep neural networks to combine vast quantities of data and generate statistical predictions about the likely consequence of the input prompt, choosing the most logical continuation (Jain et al., 2026, p. 423). For example, OpenAI's ChatGPT and AnthropicAI's Claude are neural network-based GenAI chatbots (Hicks et al., 2024, p. 2).

Organizational knowledge

According to Gold et al. (2001, pp. 190–191) organizational knowledge is the shared information and expertise that is held by members of an organization. Maintaining competitiveness requires organizations to create, capture, and make this knowledge accessible. The creation of organizational knowledge depends on sharing personal experiences through collaboration that can take place both among employees of an organization and between the organization and its external partners (Gold et al., 2001, pp. 190–191).

Tacit knowledge

According to Nonaka & Takeuchi (1995, pp. 8–9, 61) tacit knowledge is subjective and difficult to express to others. It is the “know-how” gained through experiences and the implicit models that influence the way we think, such as schemata and perceptions that we carry. It exists in the moment “here and now” and is learned by doing rather than, for example, writing. To utilize tacit knowledge, it is important to transform it into explicit knowledge, a more comprehensive and organized format (Zaoui Seghroucheni et al., 2025, p. 2).

Explicit knowledge

Formal codified knowledge that is easily stored and distributed is known as explicit knowledge (Sumbal et al., 2024, p. 2740). Explicit knowledge includes forms such as drawings, written descriptions, and other representations that can be expressed in sentences (Nonaka & von Krogh, 2009, p. 636). Nonaka & Takeuchi (1995, p. 59) emphasize that explicit knowledge is codified knowledge that can be articulated into formal language, making it more transferable than tacit knowledge.

Remote and hybrid work

Remote work means performing work outside of a company’s office and usually refers to an employee working from home (Bellmann & Hübler, 2021, p. 424). According to Kaiser et al. (2022, p. 209) hybrid work refers to an arrangement where there’s a mixture of employees working from home and in the organization's office. It often involves employees alternating between home and office workspaces, which requires a blend of in-person interaction and digital communication tools to stay connected with managers and colleagues.

1.3 Structure of the Thesis

The first part of this thesis includes chapter 1, which introduces the topic and background of the study. The research objective, research questions, and key terms are

presented. The second part of the thesis consists of the literature review. It is organized around three research questions and three chapters. The final part of the thesis is the conclusion chapter, where findings that answer the research questions are summarized. In addition, the conclusions chapter addresses the limitations of the study as well as suggestions for future research.

1.4 Methodologies

This thesis is a narrative literature review to synthesize existing scholarships and develop an integrated argument about artificial intelligence's impact on human knowledge processes in remote and hybrid work settings. Narrative literature reviews can be useful when the goal is to connect different topics of research, address broader and more abstract questions, and build or evaluate theory rather than only summarize findings because narrative reviews also allow the author to identify gaps, discrepancies, and unanswered questions in the literature (Baumeister & Leary, 1997, pp. 311–316).

The literature review focused on peer-reviewed journal articles and books, with particular emphasis on recent scholarship, published primarily in 2024–2026, on generative AI and remote work. Sources were limited to only English-language publications, and were included if they addressed organizational knowledge management, tacit knowledge transfer, effects of remote/hybrid work on knowledge processes, applications or risks of generative AI in workplace contexts, trust and communication in distributed teams. Sources were excluded if they focused exclusively on technical AI development without organizational context or theoretical grounding. Sources were identified through searches conducted in the Vaasa University Tritonia Finna portal, primarily accessing via Academic Search Elite (EBSCO), ABI Inform Complete (ProQuest), and related academic databases. Selected sources were organized around the three research questions and analyzed through the lens of the SECI model and Ba theory, as introduced in chapter 2. This method made it possible to see patterns across sources and showed areas of agreement, disagreement, and gaps in the literature.

2 AI Applications in Knowledge Management

To understand artificial intelligence's role in knowledge management, it is essential to distinguish between general artificial intelligence and generative artificial intelligence. Brynjolfsson et al. (2025, p. 895) define generative artificial intelligence as a family of machine learning technologies that, by examining patterns in pre-existing data, can produce new material such as text, photos, and videos. The article further explains that large language models (LLMs) like ChatGPT and Copilot are an important class of generative AI that are trained by learning to predict the next words in a sequence based on what has come before and extracting this information from parts of the internet. Using this database of statistical word sequences, large language models can create text that is grammatically accurate and semantically relevant.

2.1 How AI Differs from Earlier Knowledge Management Systems

To understand the transformative potential of generative AI in knowledge management, it is necessary first to examine the characteristics of traditional knowledge management systems. According to Orenga-Roglá & Chalmeta (2017, p. 195) traditional knowledge management systems platforms include document management systems, intranets and other corporate portals, data warehouses, and decision support tools. The article also identifies limitations to these traditional systems since many conventional knowledge management systems are closed systems that keep integration separate from creation and thus can prevent communities from taking charge of their own information. This assumption creates significant constraints for organizational knowledge creation.

Generative artificial intelligence, and particularly platforms like ChatGPT, represent a departure from these traditional knowledge management systems. According to Sumbal et al. (2024, pp. 2748–2749) ChatGPT can offer an integrated system of internal knowledge management that benefits organizations by increasing productivity and helping with decision-making. There are also problems related to this model, such as increased ethical

and security concerns, as well as the lack of imaginative thinking and originality among knowledge workers.

2.2 The SECI Model as a Framework

The Knowledge-creating Company: How Japanese Companies Create the Dynamics of Innovation (1995) book by Nonaka & Takeuchi introduces the SECI model that is used as a framework for understanding how knowledge creation works in organizations. It is based on the idea that knowledge is produced by the interaction of both tacit and explicit knowledge (Nonaka & Takeuchi, 1995, p. 62). The SECI model provides a useful framework for analyzing how artificial intelligence interacts with organizational knowledge processes.

The SECI model describes the four modes of knowledge conversion: socialization, externalization, combination, and internalization (Nonaka & Takeuchi, 1995, p. 62). Table 1 introduces the four modes of knowledge conversion, which provides a concise overview of each stage.

Table 1. The Four Modes of the SECI Knowledge Conversion Model (Nonaka & Takeuchi, 1995, pp. 62–69).

Stage	What happens	Example	Type
Socialization	Knowledge is acquired by sharing experiences, observation, imitation and hands-on practice.	Pair work or informal knowledge sharing (coffee-room problem solving).	Tacit → Tacit
Externalization	Tacit understandings are articulated as words, images, analogies, hypotheses or models.	An expert describing a complex skill in a workshop and producing a how-to guide.	Tacit → Explicit

Combination	Existing explicit knowledge is collected, reorganized and re-combined.	Merging market reports and internal data into a new product specification.	Explicit → Explicit
Internalization	People absorb explicit knowledge through practice and experience until it becomes in-ternalized know-how.	Employees internalizing a new process after repeated use.	Explicit → Tacit

Nonaka & Takeuchi (1995, pp. 62–63) explain that socialization (tacit to tacit) happens when tacit knowledge is obtained from others by sharing experiences and thus creating tacit knowledge by obtaining shared mental models. It can be shared without using any language since tacit knowledge can be acquired by imitation, observation, and hands-on practice. In an organizational setting, socialization can happen through shared tasks and informal interactions where people naturally share their experiences (Nonaka & Takeuchi, 1995 pp. 63–64).

According to Nonaka & Takeuchi (1995, pp. 64–65) the knowledge-creation process of converting tacit knowledge into explicit concepts is called externalization (tacit to explicit). It involves putting into words, images or models of what was previously understood only on a tacit level, and this can take the form of analogies, hypotheses or conceptual frameworks. It is further explained that discussion can initiate the externalization mode of knowledge by shared concept creation process. Tacit knowledge is difficult to articulate, so the first attempts to express it are usually incomplete, but these gaps can further increase interpersonal communication because they increase dialogue and deeper reflection among individuals.

Nonaka & Takeuchi (1995, pp. 67–68) theorize that combination (explicit to explicit) knowledge conversion happens when explicit knowledge is assembled into new configurations by, for example, reorganizing existing information. Inside organizations, this

often happens through meetings, written communication and digital platforms. Using large databases to recombine information in creative ways, organizations can generate new solutions.

Based on Nonaka & Takeuchi (1995, p. 69) internalization (explicit to tacit) turns explicit knowledge into internalized tacit knowledge that individuals carry within themselves. Experiences gained through socialization, externalization, and combination become embedded into habits and mental models. As employees participate in activities shaped by socialization, externalization, and combination, they accumulate a personal asset of tacit understanding. This accumulated know-how must be socialized with other members of an organization for organizational knowledge creation to occur.

The SECI model provides a valuable lens for examining how artificial intelligence, particularly generative AI, interacts with organizational knowledge processes. Combination (explicit to explicit) is perhaps the most straightforward area where AI demonstrates clear utility. As Sumbal et al. (2024, p. 2739) explain, explicit knowledge is tangible by nature and relatively simple to express and manage using technology. By creating a link between the internal knowledge base that is available in organizations and, for example, ChatGPT, organizations can have more comprehensive information retrieval (Sumbal et al., 2024, p. 2739, 2744). The combination mode that synthesizes explicit knowledge from several sources into new configurations is supported by this. In remote and hybrid work contexts, this capability becomes particularly valuable because of AI's capacity to combine vast volumes of structured and unstructured data in ways that may match or even exceed human combination processes, and that can compensate for the lack of natural, informal knowledge sharing that happens in regular offices (Cerchione et al., 2026, p. 12).

2.2.1 The Role of Ba in Knowledge Creation

Beyond the four conversion modes, Nonaka & Konno (1998, pp. 40–41) introduce the concept of Ba. In knowledge management, Ba refers to a shared context that can be either physical, virtual, or mental, where knowledge is created and embedded. They discuss further that Ba forms the foundation of the SECI model by enabling knowledge sharing through interaction because Ba can be understood as a shared space in which relationships and meaning emerge. This space may be physical (such as an office or distributed work environment), virtual (for example, email or remote call), mental (shared experiences or values), or any combination of these. Ba provides a platform that supports the development of both individual and collective knowledge.

Nonaka & Konno (1998, pp. 41–43) explain that corresponding to the four stages of the SECI model, there are four types of Ba, each designed to support a specific mode of knowledge conversion. These contexts serve as platforms for different phases of the knowledge spiral and facilitate the associated conversion processes. By providing an appropriate environment for each stage, each type of Ba helps accelerate the creation of new knowledge. Table 2 shows the four types of Ba and which corresponding SECI mode they are designed to support (Nonaka & Konno, 1998, pp. 45–47).

Table 2. Four types of Ba (Nonaka & Konno, 1998, pp. 45–47).

Type of Ba	**Corresponding SECI Mode**	**Description**
Originating Ba	Socialization	A physical, face-to-face space where individuals share feelings, emotions and experiences.
Interacting Ba	Externalization	A collective, reflective space where dialogue metaphors help articulate tacit knowledge.
Cyber Ba	Combination	A virtual or digital space where existing explicit knowledge is combined and reorganized.

Exercising Ba	Internalization	A space where explicit knowledge is internalized through practice, simulation or action.

In the context of this thesis, the concept of Ba is particularly relevant because remote and hybrid work fundamentally alters the types of Ba available. As will be further discussed in chapter 3, generative AI can serve as a component of virtual Ba by enabling combination and supporting internalization, but it struggles to replace the originating Ba that genuine socialization requires.

2.2.2 Limitations and Critiques of the SECI Model

Gourlay (2006, p. 1422, 1430) challenges that the SECI model lacks important conceptual and empirical grounds. He criticizes the SECI model for treating tacit knowledge as if it were always convertible into explicit form because this ignores the possibility of inherently tacit knowledge, especially the type that cannot simply be externalized without loss. Gourlay (2006, pp. 1417–1418) elaborates that an important issue concerns the difficulty of operationalizing tacit-to-tacit (socialization) and tacit-to-explicit (externalization) conversion processes empirically. For example, claims that tacit knowledge is transferred or articulated are rarely supported by direct evidence demonstrating that such knowledge existed in tacit form prior to conversion or that it was genuinely converted rather than newly constructed.

Hong (2012, pp. 202–203) raises a second critique regarding the model's universal applicability across cultural and organizational contexts. Hong argues that the SECI model was developed within a Japanese organizational context and reflects assumptions about knowledge creation that may not transfer directly to other cultural settings. According to Hong, the concept of Ba in the SECI theory may reflect assumptions about relationship-building that rely heavily on the cultural context of Japanese society.

Despite these limitations, the SECI model remains valuable for this thesis. Firstly, even if the model cannot perfectly operationalize tacit-to-tacit knowledge transfer, it provides a conceptual vocabulary for identifying where knowledge creation processes are most vulnerable and why certain interventions, such as the introduction of generative artificial intelligence in remote settings, threaten human-centered knowledge creation. Lastly, even if the SECI model is culturally situated, the model's focus on physical Ba and synchronous interaction provides a useful way for examining what remote work removes and what might be lost if organizations do not intentionally preserve human-centered knowledge creation processes. All in all, the SECI model's limitations do not invalidate its utility for this thesis.

3 The Impact of AI on Human Knowledge Processes

By analyzing how AI affects each mode of knowledge conversion, socialization, externalization, combination, and internalization, this chapter identifies where and why artificial intelligence poses threats to knowledge creation. Attention is given to remote and hybrid work contexts since that is where human knowledge processes are already under strain and where reliance on AI may accelerate knowledge erosion.

Before examining how AI amplifies knowledge erosion, it is necessary to clarify what makes human knowledge creation authentic and how AI-mediated interaction differs from it in principle. Cerchione et al. (2026, p. 12) discuss how socialization can be simulated using GenAI tools by replicating the appearance of social interaction. Unlike human-to-human socialization that is based more in shared experiences and mutual trust through presence (Nonaka & Takeuchi, 1995, pp. 63–64). GenAI-mediated interaction is structurally not able to participate in the originating Ba where tacit knowledge is formed, because it cannot share human nuances that define authentic knowledge conversion (Cerchione et al., 2026, p. 12; Jain et al., 2026, p. 426).

3.1 Using SECI to Understand AI's Threat to Authentic Knowledge Creation

Since organizations are unable to produce knowledge on their own, the SECI model points out that knowledge creation begins with the interaction of tacit and explicit knowledge, with tacit knowledge held by individuals being the foundation of organizational knowledge creation (Nonaka & Takeuchi, 1995, p. 62, 85). As introduced in Chapter 2, each mode of the SECI model is supported by a specific type of Ba: originating Ba (physical, face-to-face) for socialization, interacting Ba (collective, reflective) for externalization, cyber Ba (virtual/digital) for combination, and exercising Ba (practice-based) for Internalization (Nonaka & Konno, 1998, pp. 45–47). Hybrid and remote work environments alter the availability and quality of these Ba spaces. Understanding how

generative AI disrupts each stage of this cycle, and particularly how it undermines the human authenticity required for genuine knowledge creation, is critical to identifying where human knowledge processes risk erosion in remote and hybrid work contexts.

According to Cerchione et al. (2026, p. 12) especially conversational agents that use generative AI to simulate information exchange through interactions resembling actual dialogue may convey the appearance of socialization, and yet these conversations are not based on shared human experiences, so they do not have the same epistemic dimension. This is because GenAI operates entirely within a simulated, digital space. It cannot create or participate in originating Ba, which requires physical proximity and shared time to build the shared mental models necessary for genuine tacit knowledge transfer (Nonaka & Konno, 1998, p. 46). Therefore, GenAI cannot participate in genuine socialization. The distinction is important because socialization, as Nonaka & Takeuchi (1995, pp. 62–63) describe it, occurs when tacit knowledge is obtained from others through sharing experiences, which creates shared mental models through imitation, observation, and hands-on practice.

According to Dai et al. (2026, pp. 8–9) excessive dependence on AI can obstruct tacit knowledge sharing, as genuine socialization relies on human interaction, communication, and imitation. These are all mechanisms through which tacit information spreads across organizations. Therefore, the excessive dependence on GenAI erodes interpersonal communication and compromises not only efficiency but also the quality and depth of knowledge shared, which has a negative effect on the efficient transfer of tacit information. Also, certain crucial information might be misinterpreted or missed completely since GenAI may not be able to fully grasp and replicate human tacit knowledge. As Jain et al. (2026, p. 425) note, generative AI does not possess the emotional and social understanding that characterizes human intelligence. Without these dimensions, GenAI cannot participate in the shared meaning-making that transforms isolated information into organizational knowledge.

Externalization is where tacit knowledge is articulated into explicit form through reflective dialogue (Nonaka & Takeuchi, 1995, p. 64). This is where GenAI can appear helpful, but where new risks can become known. While GenAI can transform tacit knowledge into explicit knowledge, algorithms and the quality of data may have constraints that make GenAI struggle to convert the tacit knowledge into explicit (Dai et al., 2026, pp. 8–11). This risk goes deeper than just accuracy. Nonaka & Takeuchi (1995, p. 64) describe externalization as a dialogue process where incomplete attempts at expression lead to deeper reflection and better articulation through multiple repetitions.

When GenAI, for example, generates articulation for an employee, the employee may bypass the reflective dialogue through which the established deep understanding develops, as discussed above. According to Nonaka & Konno (1998, p. 47) authentic externalization requires interacting Ba as a space for dialogue where incomplete ideas are refined. When an employee accepts an AI-generated articulation without struggle, they skip the very process that dialoguing Ba is meant to support, resulting in shallow documentation rather than deep expertise. Then, the result of bypassing reflective dialogue could be problematic since while the organization accumulates documentation, it does not accumulate expertise. It is worth noting that when the employee departs, the documentation remains but not the depth that only humans carry. In remote work, they may then lose both the human interaction and the cognitive struggle that deepens understanding.

Cerchione et al. (2026, p. 12) note that AI can efficiently integrate and analyze large amounts of explicit knowledge. The combination mode that synthesizes explicit knowledge from several sources into new configurations is supported by AI's capacity to combine vast volumes of structured and unstructured data in ways that may match or even exceed human combination processes. In remote and hybrid work, this capability may be valuable because it doesn't require synchronous human interaction. Dai et al. (2026, p. 11) identify that in the combination stage, while AI can efficiently integrate sizeable amounts of explicit knowledge, it may lack human intuition, judgment, and

pattern-recognition that can potentially lead to fragmentation and superficiality of knowledge.

Here, GenAI excels because cyber Ba is inherently virtual, and GenAI can recombine explicit knowledge from vast databases quicker than humans (Brynjolfsson et al., 2025, p. 890; Nonaka & Konno, 1998, p. 47). However, as Dai et al. (2026, p. 11) warn, the efficiency gain comes at the cost of human learning through the process, turning knowledge work into a transactional output, and this may cause erosion of innovation and deeper thought processes because the ability to perform multi-step reasoning is an important cognitive function of humans, and current language models don't have the capability to engage in that. Dai et al. (2026, p. 16) also note that AI's capacity to incorporate explicit knowledge is limited by a basic lack of human intuition and judgment. It is discussed that this can lead to surface-level knowledge, interfering with the formation of the deep connections important to genuine understanding. In the context of AI-assisted knowledge processes, this suggests to the need for human monitoring and discretion so that the combination can lead to meaningful synthesis and not just an artificially generated compilation of data. All in all, it is important that the GenAI assisted efficiency gain in combination does not come at the cost of learning that happens through the process.

Nonaka & Takeuchi (1995, p. 69) describe internalization as knowledge becoming embedded in habits and mental models through repeated practice. But there is a difference between applying a rule and internalizing understanding. In the study by Dai et al. (2026, p. 11) it is indicated that depending too much on the information produced by generative AI can lead to a decline in a person's capacity for independent active learning and thinking. According to Nonaka & Konno (1998, p. 47), exercising Ba facilitates the conversion of explicit knowledge to tacit knowledge by, for example, doing, failing, and practicing in a real-world or realistic simulated context. When a remote employee asks AI for an answer instead of struggling through a problem, they are not practicing but rather receiving a solution, which prevents the development of the tacit know-how that exercising Ba is designed to build. Dai et al. (2026, p. 11) further discusses that the knowledge produced

by generative AI can be incorrect and biased, which also deceives human learning processes. In remote work contexts, if someone gets stuck, asking AI for help instead of struggling through the problem means they might not develop the skills associated with true expertise. Thus, they might internalize explicit procedures, but not the deeper knowledge behind them.

As Nonaka & Takeuchi (1995, pp. 70–71) explain, authentic knowledge creation operates as a dynamic spiral. The continuous interactions between the four SECI modes generate expanding cycles of knowledge growth. Without authentic human engagement at each stage, this expansion cannot occur since the SECI model reveals that these modes are interdependent, so disrupting one weakens all others. When AI replaces genuine socialization, the foundation of tacit knowledge and human relationships erodes. This weakens externalization because then people have less rich tacit knowledge to articulate, and they skip the reflective dialogue that deepens understanding. When externalization becomes shallow, people internalize incomplete knowledge rather than deep expertise. When they lack genuine internalization, they contribute less authentic knowledge back to socialization with others. The result is not an expanding spiral but a contracting one since organizations accumulate data and documentation while their capacity for authentic knowledge creation, and the human expertise it requires, gradually depletes. Figure 1 shows how the four SECI modes should interlock to create an upward spiral of knowledge growth (Nonaka & Takeuchi, 1995, pp. 70–71).

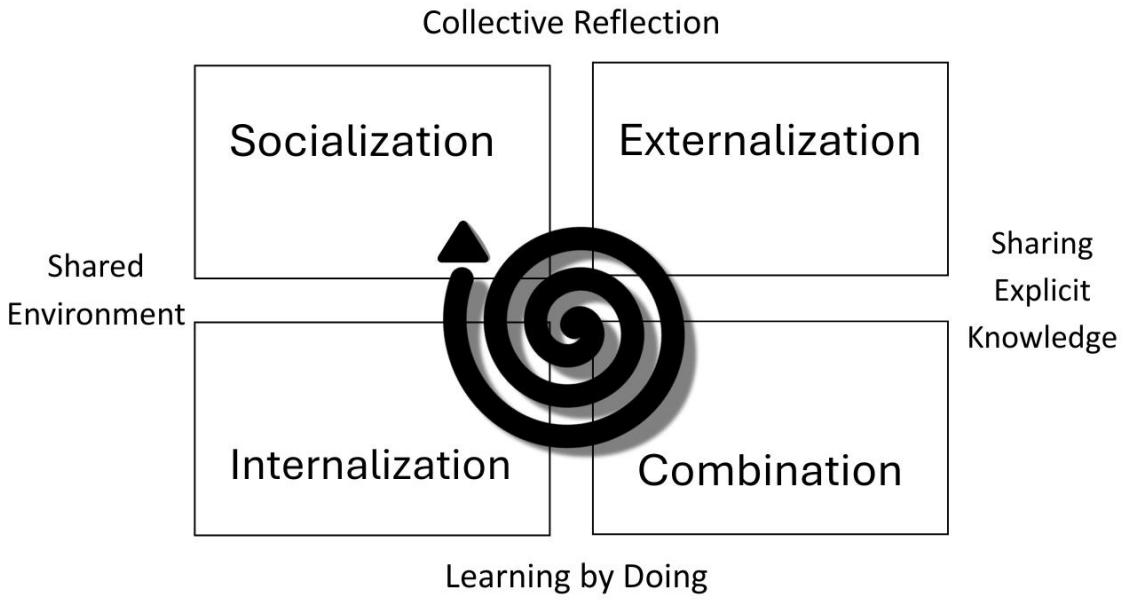

Figure 1. The Knowledge Spiral by Nonaka & Takeuchi (1995, p. 71).

3.2 Knowledge Erosion Risks in the Context of Hybrid and Remote Work

The study by Lütjens & Felfe (2026, p. 15) shows that working in a hybrid environment might gradually erode teams' daily commitment because hybrid arrangements can limit the important communication opportunities that are often used to create a sense of belonging daily. In the study, during remote workdays, employees indicate a decrease in informal interaction and knowledge sharing with colleagues (Lütjens & Felfe, 2026, p. 15). Similarly, Urrila et al. (2025, p. 14) interviewed experts who noted that remote work has less opportunities for casual knowledge sharing, one interviewee describing how working remotely could eliminate the important tacit knowledge that is shared in casual face-to-face interactions. Casual discussions are particularly significant in teams with loose connections since they offer a rare chance of perceiving the team as one significant social entity, but on the other hand, sharing knowledge in teams with a higher degree of interdependence holds more relational relevance because it shows mutual commitment towards joint results (Lütjens & Felfe, 2026, p. 15). Based on these findings, remote work

does not just reduce the quantity of knowledge sharing, but it also changes the quality of relationships that support knowledge creation.

As defined by McAllister (1995, pp. 25–26) the connections of interpersonal trust between managers within organizations consist of two main types of interpersonal trust: cognition-based trust and affect-based trust. Cognition-based trust relies on personal perceptions regarding the reliability and honesty of colleagues. Affect-based trust is founded on mutual care and consideration among individuals. According to the research by Nerstad et al. (2017, p. 440) feeling trusted by your supervisor can facilitate knowledge sharing. The way a supervisor demonstrates vulnerability appears to significantly impact how subordinates are inclined to share their knowledge. By exhibiting trust, supervisors open themselves up to vulnerability, displaying their confidence in and support for the individuals they supervise. The research uncovered that when employees perceive that the existing success metrics in their roles prioritize learning, growth, and collaboration, they experience greater trust from their supervisors, and this leads to an increased willingness to share their knowledge. The erosion of knowledge is compounded by the decline of interpersonal trust in hybrid and remote work. As Blomqvist et al. (2025, pp. 60–61) note, tacit knowledge transfer and collaboration rely heavily on interpersonal trust, particularly affect-based trust.

When viewed through the SECI framework by Nonaka and Takeuchi (1995, pp. 64–69) and the concept of Ba by Nonaka & Konno (1998, pp. 45–47), these remote work challenges directly weaken specific knowledge conversion modes. Starting from socialization (tacit to tacit), it suffers most visibly since originating Ba, the physical, face-to-face space required for spontaneous experience sharing, is reduced or eliminated. Without shared physical presence, employees may lose the mechanisms through which tacit knowledge is traditionally acquired. Externalization (tacit to explicit) is also impaired because it depends on reflective dialogue and iterative articulation. Asynchronous remote communication gives fewer opportunities for deeper discussion through which incomplete tacit understandings are gradually refined into explicit

concepts. Combination (explicit to explicit) remains relatively intact, as digital tools can effectively recombine explicit knowledge. Internalization (explicit to tacit) is weakened because remote employees have fewer opportunities for guided practice, apprenticeship, and learning-by-doing alongside experienced colleagues (Nonaka & Konno, 1998, pp. 45–47; Nonaka and Takeuchi, 1995, pp. 64–69). All in all, remote work can damage the human-centered modes (socialization and externalization) that are most essential for authentic knowledge creation.

3.2.1 How AI Amplifies Knowledge Erosion

Building on the findings above, the integration of generative artificial intelligence into knowledge management risks further eroding the established, fragile human knowledge processes in hybrid and remote work. Firstly, according to Osler (2026, p. 4) conversational chatbots such as xAI's Grok, OpenAI's ChatGPT, Anthropic's Claude, and Google's Gemini have exhibited numerous instances of "hallucinating" behaviors. By considering the relationship between humans and their AI chatbots, users may start to hallucinate with AI because these AI systems can integrate into our continuous cognitive processes that sometimes have no connection to reality (Osler, 2026, p. 3). In a remote setting, there is no colleague nearby to challenge or correct an AI-generated answer. These conversational GenAI chatbots can create deep perceptions of authenticity to inaccurate information by conveying an illusion that the information is commonly held by other people (Osler, 2026, p. 3). As a result, remote workers could be more tempted to rely on GenAI because human colleagues are less available and more vulnerable to its errors because no one is there to correct them.

Secondly, the study by van Zoonen et al. (2023, p. 515, 524) provides findings on how isolation at work can erode interpersonal trust by lowering the effectiveness of communication. The study finds that the decline in the quality of communication has a greater impact on interpersonal trust than the decrease in how often communication occurs for employees in remote work settings. According to the study, if employees then substitute

AI for human colleagues, they lose the interactions that build interpersonal, affect-based trust. Additionally, in the study by van Zoonen et al. (2023, p. 524) it appears that trust between different levels of an organization is impacted more significantly than trust among peers, indicating that trust in supervisors may be particularly unstable in remote working environments when contrasted with trust among colleagues. According to Yu et al. (2025, pp. 19–20) while AI can support the development of remotely working employees' abilities, these benefits materialize only when strong relationships with colleagues are also present.

Lastly, these three dynamics: hallucination vulnerability, trust erosion, and the loss of human interaction do not operate in isolation. Instead, they form a self-reinforcing cycle that accelerates knowledge degradation in remote and hybrid work environments. Each step of the cycle is supported by the literature reviewed above. As established, remote work reduces informal communication and opportunities for tacit knowledge exchange while eroding affect-based trust through lower communication quality (Lütjens & Felfe, 2026, p. 16; Urrila et al., 2025, p. 14; van Zoonen et al., 2023, p. 524). When human colleagues are less available or trusted, employees may turn to generative AI as a convenient substitute for knowledge and problem-solving (Yu et al., 2025, pp. 19–20). Substituting AI for human colleagues eliminates precisely the reflective dialogue and shared struggle that build deep understanding (Dai et al., 2026, p. 11; Cerchione et al., 2026, p. 12). Without regular, high-quality interpersonal communication, affect-based trust continues to decline (van Zoonen et al., 2023, p. 524), and employees lose opportunities to develop the cognitive and social skills that come from authentic knowledge work (Nonaka & Takeuchi, 1995, p. 69; Jain et al., 2026, p. 429). Organizations that introduce AI without deliberately preserving and protecting human knowledge processes risk accelerating this spiral, accumulating data and efficiency while silently depleting the very expertise that sustainable knowledge creation requires (Cerchione et al., 2026, p. 12; Dai et al., 2026, p. 11).

4 Human-centered principles and organizational practices

As artificial intelligence becomes increasingly incorporated in organizational knowledge management, it is essential to integrate technological systems in ways that support rather than undermine human knowledge processes. A perspective for understanding this relationship can be traced back to Hayek's (1945) classic argument that knowledge in society is inherently dispersed, contextual, and often tacit. Because no centralized system can fully capture this distributed knowledge without losing its situational meaning, organizations should understand that human expertise remains irreplaceable. This insight has a connection to Nonaka and Takeuchi (1995, pp. 9–11) because the very same resistance was later conceptualized in the book "The Knowledge-creating Company: How Japanese Companies Create the Dynamics of Innovation" as the distinction between tacit and explicit knowledge, arguing that the most critical organizational knowledge is personal, context-specific, and hard to formalize.

To understand the role of artificial intelligence in knowledge creation, it is useful to begin with the SECI model of knowledge creation, which conceptualizes knowledge as a dynamic process involving conversions between tacit and explicit knowledge (Nonaka & Takeuchi, 1995). In AI-augmented environments, this means that the issue is not only whether AI can process information efficiently, but whether it can support the social and interpretive processes through which knowledge is created. Recent research suggests that AI does not automatically improve organizational performance or knowledge creation because its effects depend on how well it is rooted in existing social processes such as knowledge sharing, collaboration, and collective interpretation (Olan et al., 2022, pp. 612–613). From this perspective, GenAI should be understood as something that can support human-centered knowledge processes rather than replace them. GenAI appears most effective when it augments human expertise by handling large volumes of information, while humans have the largest responsibility for contextual judgment and meaning-making (Kolbjørnsrud, 2024, p. 58; Zhang et al., 2025, pp. 1619–1646).

4.1 Why Human Presence and Connection Matter

The importance of human presence in knowledge creation becomes especially clear when considering what is lost if artificial intelligence replaces, rather than complements, human involvement. Knowledge creation is social and relies on interaction, shared experience, and mutual understanding rather than just information processing (Nonaka & Toyama, 2003, pp. 2–3). Related knowledge management research similarly shows that meaningful knowledge emerges through practice, dialogue, and situated interaction (Shehzad et al., 2024, p. 129).

This social nature of knowledge creation is conceptualized in the SECI model. In particular, the socialization phase showcases that tacit knowledge is shared through direct experience, observation, and informal interaction between individuals (Nonaka & Toyama, 2003, pp. 4–6). Because tacit knowledge is embedded in action, routines, and context, it cannot be fully articulated, but it is instead developed through participation in shared practices like working with coworkers and dealing with problems together (Farnese et al., 2019, pp. 3–6).

Research on human–AI collaboration suggests that AI is most effective in the explicit dimension of knowledge work, where it can process large volumes of structured information, identify patterns, and recombine existing knowledge elements (Jarrahi, 2018, pp. 580–582; Liu, 2024, pp. 6–7, 17). This aligns with the combination phase of the SECI model, which is concerned with the integration of explicit knowledge. At the same time, the literature indicates that AI remains limited in the social and experiential processes through which tacit knowledge is developed, since these processes depend on interaction, context, and shared experience rather than information processing alone (Jarrahi, 2018, pp. 579–580; Raisch & Krakowski, 2021, pp. 198–200). Liu's (2024, pp. 6–7, 17) findings further support this distinction by showing that AI can improve innovation outcomes through explicit knowledge processing and recombination but not independently generate new knowledge without human knowledge-creation processes. All in all, these

studies suggest that AI complements explicit knowledge dynamics, while tacit knowledge development continues to depend on human presence.

Empirical research on AI and innovation supports this distinction. Lius's (2024, pp. 6–7, 17) study on AI and product innovation efficiency demonstrates that AI improves innovation outcomes by accelerating explicit knowledge processing and recombination but does not independently generate new knowledge without the presence of human knowledge creation processes. According to this view, AI enhances explicit knowledge dynamics but remains dependent on human presence for the creation and transformation of tacit knowledge. This asymmetry also supported by research into human–AI collaboration. GenAI excels in analytical tasks, scalability, and information synthesis, yet lacks the experiential understanding, contextual awareness, and relational sensitivity required for tacit knowledge development (Jarrahi, 2018, pp. 579–580; Raisch & Krakowski, 2021, pp. 198–200). This shows that AI systems complement rather than substitute human cognitive and social capabilities. Studies on hybrid intelligence similarly emphasize that the most effective knowledge outcomes emerge from the integration of human judgment, creativity, and contextual interpretation with AI's computational capabilities, rather than from the automation of knowledge work (Dellermann et al., 2019, pp. 640–642).

The limitations of AI may become more visible in relation to human capabilities such as contextual judgment and meaning-making. These capabilities are essential for generating knowledge and for interpreting its relevance and applying it in specific organizational contexts. Without sustained human involvement, knowledge risks becoming decontextualized and detached from the situational, ethical, and relational dimensions that give it meaning (Jarrahi, 2018, pp. 579–580; Raisch & Krakowski, 2021, pp. 198–200). Knowledge is not extracted from information, but constructed through ongoing social interaction, and that shows the limits of purely data-driven approaches (Orlikowski, 2002, pp. 249–250).

Recent work in AI-enabled knowledge management further clarifies what is lost when human interaction is replaced rather than augmented. Cerchione et al. (2025, pp. 12–16) describe simulated socialization where GenAI mediates communication and knowledge sharing without fully reproducing the interpersonal interaction through which tacit knowledge is developed. The article suggests that while these systems can facilitate communication and the distribution of information, they remain limited in enabling the deeper exchanges required for tacit knowledge creation. This indicates that an increasing reliance on GenAI-mediated interaction may begin to shift organizational learning away from social learning processes toward more superficial forms of information exchange.

Similar concerns appear in recent attempts to revisit the SECI model in the context of artificial intelligence. Zhang et al. (2025, pp. 1627–1631) argue that AI tends to strengthen explicit knowledge processes while simultaneously weakening the social and contextual conditions necessary for tacit knowledge creation. The analysis links this imbalance to the erosion of Ba, which Nonaka et al. (2000, pp. 8–12) define as the shared context for knowledge creation emerging through interaction, trust, and contextual engagement. In increasingly AI-mediated environments, knowledge exchange may continue without the sustained interpersonal connection required to maintain this shared space. As a result, the conditions that support socialization become weaker, limiting the organization's capacity to generate genuinely new knowledge (Nonaka et al., 2000, pp. 8–12; Zhang et al., 2025, pp. 1627–1631). Brown & Duguid (1991, pp. 54–55) underline that expertise resides in informal interactions and shared practices that characterize communities of practice. The work shows that tacit know-how comes out through collaborative engagement processes that technological systems cannot fully replicate.

These discussions suggest that human presence is not an optional addition to knowledge management but a foundational requirement. In particular, the socialization of tacit knowledge depends on sustained interpersonal interaction, trust and shared experience. Without these elements, knowledge processes risk becoming fragmented, decontextualized and less meaningful. (Nonaka & Toyama, 2003, pp. 4–5; Brown & Duguid, 1991,

pp. 47–48). From an organizational perspective, this suggests that AI should be implemented as a complementary tool that enhances knowledge processes while preserving their social foundations. Maintaining a balance between technological efficiency and human-centered interaction is essential if organizations are to protect the depth, context, and generative potential of their knowledge creation processes in AI-enabled environments (Jarrahi, 2018, pp. 584–585; Raisch & Krakowski, 2021, pp. 194–197).

4.2 Implementation in Remote and Hybrid Contexts

Remote and hybrid work environments have significantly reshaped how knowledge is created, shared, and interpreted within organizations. Nonaka & Toyama's (2003, pp. 6–8) concept of Ba provides a useful lens: knowledge emerges within a shared space, physical, virtual, or social, where individuals interact, interpret, and co-create meaning. In remote contexts, such spaces become fragmented, and the increasing reliance on asynchronous and AI-mediated communication risks weakening the social embeddedness of knowledge processes. As a result, the social embeddedness of knowledge processes may gradually weaken.

4.2.1 Communication Practices in Remote and Hybrid Work

Communication practices are a central mechanism through which knowledge processes are shaped in remote and hybrid contexts (Gibbs et al., 2021, pp. 3–4, 18–23). The distinction between synchronous and asynchronous communication is important because these forms of communication support different types of interaction and knowledge exchange (Zsifkovits et al., 2025, p. 3). According to (Flynn-Wilson & Reynolds, 2021, pp. 46–55) synchronous communication enables real-time feedback and co-construction of meaning. It is especially important for building trust, maintaining engagement, and supporting complex or ambiguous knowledge exchange. However, research also suggests that synchronous communication alone does not always lead to effective knowledge

sharing because its effectiveness depends on shared norms and participants' willingness to engage actively. In hybrid teams, synchronous communication has also been linked to stronger organizational commitment and improved knowledge sharing, especially when it includes informal factors (Lütjens & Felfe, 2026, pp. 7–9).

According to Zsifkovits et al. (2025, pp. 10–12) asynchronous communication, in contrast, supports flexibility, documentation, and participation across time and space. It is particularly compatible with GenAI-augmented workflows. Research shows that asynchronous formats can achieve similar cognitive learning outcomes compared to synchronous formats, but they are associated with lower intrinsic motivation and weaker affective engagement. Additionally, heavy reliance on asynchronous communication reduces opportunities for informal interaction and spontaneous knowledge exchange, which are essential for tacit knowledge transfer (Begemann et al., 2024, pp. 1–2; Puhakka et al., 2025, pp. 1–4).

Studies on remote and hybrid work show that digital communication tools can increase connectivity and coordination across distributed teams, but they may also reduce the visibility of colleagues' activities and limit opportunities for informal encounters and spontaneous interaction (Begemann et al., 2024, pp. 6–8; Lütjens & Felfe, 2026, pp. 13–15). These dynamics become particularly relevant in AI-augmented work environments. Viewed this way, remote and GenAI-mediated communication settings not only facilitate organizational knowledge processes but also limit them by reducing the circumstances in which social interaction, trust development, and shared understanding happen (Begemann et al., 2024, pp. 6–8; Lütjens & Felfe, 2026, pp. 13–15). As a result, organizations need to design communication practices that preserve efficiency while still maintaining opportunities for informal exchange and collaborative interpretation.

4.2.2 SECI-Guided Human-Centered Practices for Remote and Hybrid Work

The challenges identified above can be addressed by implementing concrete organizational practices aligned with the SECI model. In remote and hybrid contexts, these practices must compensate for the reduced availability of informal interaction and ensure that all phases of knowledge creation are adequately supported. At the same time, these environments place increasing demands on individual agency. Research shows that self-leadership becomes more important in remote work, as employees must rely more on self-regulation, intrinsic motivation, and proactive behavior in the absence of constant social interaction (Kim et al., 2026, pp. 12–14). The following practices, mapped to the SECI model, address this challenge by reinforcing the social foundations of knowledge creation while lowering the risks associated with over-reliance on AI-mediated processes.

The socialization phase (tacit-to-tacit) is particularly vulnerable in distributed environments because evidence shows that decreased informal interaction leads to lower levels of informal learning and weaker relational ties (Nonaka & Konno, 1998, pp. 43–46; Puhakka et al., 2025, pp. 9–11). Similarly, hybrid work studies emphasize that daily informal communication improves knowledge sharing and organizational commitment (Lütjens & Felfe, 2026, pp. 1–5). To address this, organizations must deliberately create opportunities for interaction, such as mentorship programs, communities of practice, and informal synchronous encounters. Studies on hybrid knowledge sharing practices further indicate that structured yet informal interaction remains a key enabler of knowledge exchange in distributed environments (Lütjens & Felfe, 2026, pp. 1–5, p. 15).

As stated by Kim et al., (2026, pp. 12–14) remote work requires individuals to actively construct their own opportunities for interaction. Self-leadership practices, such as self-initiated communication and expanding social boundaries beyond immediate teams, have been identified as critical for sustaining engagement and knowledge exchange in hybrid environments. From a knowledge management perspective, this accentuates that socialization is no longer only an organizational responsibility but also increasingly dependent on individual agency. However, relying solely on individual initiative is

insufficient because organizations must deliberately recreate conditions for originating Ba, where trust-based relationships and shared experiences can emerge, even in virtual settings (Nonaka & Konno, 1998, p. 43–46).

The externalization phase (tacit-to-explicit is also shaped by the remote context. Because externalization requires individuals to articulate tacit insights into communicable forms, it often depends on digital and asynchronous tools in distributed work settings (Nonaka & Konno, 1998, pp. 43–46). GenAI may assist this process by summarizing material and structuring information, but research also suggests that over-reliance on such systems can reduce reflection and produce knowledge outputs that are less contextualized (Zhang et al., 2025, pp. 1634–1637). Accordingly, externalization appears most meaningful when organizations combine asynchronous preparation with synchronous discussion, for example through guided conversations or collaborative documentation practices.

The combination phase (explicit-to-explicit) is more readily supported in remote and AI-mediated environments because studies on AI-augmented workflows suggest that such systems can improve productivity and reduce cognitive load when they are transparently designed and aligned with user needs (Nonaka & Konno, 1998, pp. 43–46; Odogwu et al., 2025, pp. 628–629, 633). However, research on employee innovation indicates that effective knowledge recombination also depends on autonomy and not just access to information (Gibbs et al., 2024, pp. 26–28). This shows the importance of maintaining human oversight and judgment in AI-supported knowledge processes.

The internalization phase (explicit-to-tacit) involves learning and the development of individual competencies (Nonaka & Konno, 1998, pp. 43–46). In remote and hybrid contexts, this phase is challenged by the lack of informal feedback and observational learning opportunities. Evidence from educational and organizational research shows that while asynchronous learning supports knowledge acquisition, synchronous interaction enhances engagement and supports deeper understanding (Zsifkovits et al., 2025, pp. 11–13; Flynn-Wilson & Reynolds, 2021, pp. 52–54). Effective practices include structured

onboarding programs, mentoring relationships, and regular feedback sessions that combine asynchronous content with synchronous interaction (Kim et al., 2026, pp. 3–7).

Overall, remote and hybrid work environments create a structural imbalance in knowledge processes by favoring explicit and AI-mediated knowledge while weakening tacit and socially embedded knowledge. Addressing this imbalance requires deliberate, human-centered organizational practices that reintroduce interaction, reflection, and shared experience into digital workflows. By aligning these practices with the SECI model, organizations can leverage the benefits of AI and remote work while preserving the social foundations of knowledge creation (Zhang et al., 2025, pp. 1638–1642).

5 Conclusions

This final chapter combines the thesis findings to answer the central research problem: What human-centered principles and organizational practices are necessary to balance artificial intelligence capabilities with human knowledge processes in remote and hybrid work settings?

The research questions introduced in Chapter 1 are raised to discuss how organizations could balance AI capabilities with human knowledge processes in remote and hybrid work settings. Chapter 2 is connected to the first research question, “How is artificial intelligence described and applied in organizational knowledge management?” As established in chapter 2, generative AI is increasingly positioned as an integrated knowledge management solution that surpasses traditional systems in efficiency and scale. The SECI model provides a useful analytical framework, revealing that AI excels particularly in the combination phase (explicit-to-explicit knowledge recombination). However, this capability should not be mistaken for comprehensive knowledge management. AI systems, when embedded in knowledge management, primarily accelerate information processing and retrieval rather than foster the conditions under which tacit knowledge emerges.

The second research question, “What limitations and negative impacts of AI on human knowledge processes do the literature identify, particularly in remote/hybrid contexts?” is discussed in chapter 3. The research discussed reveals that remote work can risk weakening the human-centered stages of the SECI model, where authentic tacit knowledge is created and transferred. When organizations add AI technologies to these already-fragile contexts, they may introduce apparent solutions that substitute technological efficiency for human expertise development. These actions risk creating an imbalance when AI-mediated processes become the norm, particularly in already-fragile remote and hybrid working arrangements. Organizations may accumulate data and documentation while their ability to produce authentic knowledge decreases.

Chapter 4 discusses the third research question, “What human-centered principles and organizational practices are proposed to balance artificial intelligence capabilities with human knowledge processes in remote and hybrid work settings?”. As found in chapter 4, AI can enhance explicit knowledge work, but it cannot fully replace the human interaction, dialogue, and contextual judgment through which tacit knowledge is created and transferred. The discussion reveals that remote and hybrid work environments create a structural imbalance that favors asynchronous, AI-mediated communication while weakening the synchronous, dialogical, and informal interaction essential to tacit knowledge creation.

Addressing this requires intentional, human-centered organizational practices. These include practices that intentionally design communication frameworks to align synchronous and asynchronous activities with SECI stage requirements; practices that preserve and create originating Ba through structured yet informal mentorship, communities of practice, regular synchronous engagement, and practices that support externalization through guided reflection and collaborative documentation combining asynchronous preparation with synchronous interpretation.

Furthermore, externalization should be supported through guided reflection and collaborative documentation, combining asynchronous preparation with synchronous interpretation. Practices should prioritize trust-building as a foundational organizational practice, recognizing that trust becomes more critical when visibility and spontaneous interaction are constrained. Finally, it is important to develop self-leadership and individual agency, while also providing organizational structures that enable interaction and do not leave knowledge creation to chance. These practices may prove to be useful conditions for sustainable knowledge creation and not just additional to AI adoption.

This thesis applies the SECI model and Ba concept to AI-augmented knowledge work in remote and hybrid contexts. It discusses that without deliberate human-centered practices, technological efficiency and knowledge depth risk becoming contradictory rather

than complementary, challenging the assumption that tools that process information faster necessarily enhance knowledge creation. The evidence presented demonstrates that generative artificial intelligence's strengths may undermine the conditions necessary for knowledge work. Without intentional organizational practices that prioritize human interaction and tacit knowledge creation, integrating generative artificial intelligence into knowledge management in remote and hybrid work environments risks accelerating knowledge erosion rather than enhancing efficiency.

5.1 Limitations of the Study

This thesis is a narrative literature review that relies on theoretical analysis. Therefore, empirical studies are needed to measure whether organizations adopting AI without human-centered practices experience knowledge erosion. No organizations or employees were studied directly, so the conclusions are reasoned from published research and theory. The generalizability of the findings is limited without reviewing how organizational settings differ when applied to various other cultural contexts. This thesis relies on the SECI model that has its limitations, as discussed in chapter 1. It means that the analysis in this thesis acquires similar blind spots and limitations.

As an analysis of generative AI's impact on knowledge processes in remote and hybrid work, this thesis relies heavily on recent scholarship. While this is necessary to address contemporary AI systems, it also means the long-term effects of AI adoption on organizational knowledge remain unknown. The constant development of GenAI's capabilities means that the finding might become dated as new technologies are developed. Several important sources in this thesis are 2025-2026 in-press articles, so the framing may still shift. It should also be noted that this thesis's restriction to only English-language sources create a language bias and potentially excludes relevant sources and views from non-English-speaking regions.

5.2 Suggestions for Future Research

This thesis identifies gaps that future research should address. Firstly, which specific practices (mentorship, communities of practice, structured reflection) most effectively preserve knowledge creation in remote and hybrid settings, and what are the implementation challenges? Case studies of organizations deliberately balancing AI adoption with human-centered knowledge management practices over time would provide concrete evidence of what works.

Lastly, which specific practices identified in Chapter 4 (mentorship programs, communities of practice, structured reflection sessions, and synchronous communication frameworks) are most effective at preserving knowledge creation in remote settings? What are the implementation challenges? How do organizational size, industry, and workforce composition affect which practices are usable? Empirical research on implementation would help organizations design knowledge creation strategies for their specific contexts.

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