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Toward a Unified Theory of Knowledge Sharing: Artificial Intelligence, Epistemic Justice, and Platform-Mediated Tacit Knowledge in the Digital Age

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Abstract

Knowledge sharing is undergoing a paradigm shift driven by three converging forces: the integration of artificial intelligence (AI) into knowledge management systems, the platform-mediated reconstitution of tacit knowledge, and the rise of open science and epistemic justice movements. This study aims to examine whether existing frameworks, particularly Nonaka and Takeuchi's SECI model, remain adequate for explaining knowledge sharing under these conditions, and to propose an integrative alternative. The study employs a conceptual research design based on a theoretical synthesis of peer-reviewed literature published between 2018 and 2025. The results show that AI is shifting knowledge repositories from passive storage to active brokering, that the tacit-explicit boundary behaves as a variable permeability shaped by relationships, platforms, culture, and AI, and that platform governance functions as knowledge governance that determines whose knowledge flows. Based on these findings, the study proposes the Dynamic Knowledge Flow Model (DKFM), which consists of four layers (knowledge substrate, AI augmentation, platform mediation, and epistemic justice) and three dynamic properties (endogenous boundary reconstitution, bi-directional causation between layers, and organizational culture as a binding medium). The DKFM reframes knowledge sharing as a system rather than a dyadic transaction. The study concludes with practical implications for knowledge management and six priority directions for future research.

Keywords: knowledge sharing; artificial intelligence; tacit knowledge; epistemic justice; knowledge management

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INTRODUCTION

How knowledge moves between people, and whether it can move at all, is among the oldest problems in the social sciences. From Polanyi's (1966) observation that "we know more than we can tell" to Nonaka and Takeuchi's (1995) conversion-based account of organizational knowledge creation, scholars have grappled with a persistent tension: knowledge is the most valuable resource a collective possesses and also the most difficult one to share.

Over the past two decades, knowledge management (KM) has matured into an interdisciplinary field. It has produced robust evidence on how organizational culture enables or inhibits knowledge sharing (Kim & Park, 2020; Park & Kim, 2018), clarified the antecedents

of knowledge-sharing behaviour such as leadership, incentives, and interpersonal trust, and accumulated a substantial body of work on the differences between tacit and explicit knowledge transfer (Lartey et al., 2022; Oranga, 2023). These contributions remain foundational.

Foundational, however, is not the same as sufficient. Existing frameworks were built for stable organizational environments, human-to-human transfer, and closed institutional knowledge systems. Three shifts now challenge these assumptions. First, AI is being integrated into KM at a depth that changes the repository from a passive store into an active agent (Bencsik, 2021; Thakuri et al., 2024). Second, digital platforms are making previously untransferable experiential and relational knowledge more articulable and portable (Castaneda Zapata & Ramirez Rojas, 2022; Nguyen & Sharma, 2024). Third, open science advocates and epistemic justice theorists argue that the KM literature has privileged certain knowledge producers, validation mechanisms, and sharing circuits at the expense of others (Cummings et al., 2024; Maciuliene, 2022).

Each shift has produced its own sub-literature, but they have rarely been examined together. The research gap addressed here is the absence of a unified theoretical account that explains not only *how* knowledge is shared, but *whose* knowledge is shared, *through what* mediation, and *toward what* ends.

Accordingly, this study pursues three objectives: (1) to analyze the three disruptive forces reshaping knowledge sharing using peer-reviewed evidence from 2018–2025; (2) to propose the Dynamic Knowledge Flow Model (DKFM), which reconceptualizes knowledge sharing as a multi-layered, AI-augmented, platform-mediated, and justice-sensitive process; and (3) to derive a prioritized agenda for future research. The novelty of this study lies in integrating AI augmentation, platform mediation, and epistemic justice into a single model that extends, rather than discards, the SECI framework.

METHOD

This study is a conceptual (theoretical) paper. It does not collect primary data; instead, it develops a theoretical model through a structured synthesis of existing peer-reviewed literature. The literature search was systematic in its strategy but was not conducted as a formal systematic review.

The study proceeded in four stages:

1. **Literature identification.** Peer-reviewed journal articles, conference papers, and book chapters published between 2018 and 2025 were collected on knowledge sharing, tacit-explicit knowledge transfer, AI in knowledge management, digital platforms, open science, and epistemic justice. Classic works (Polanyi, 1966; Nonaka & Takeuchi, 1995; Grant, 1996; Alavi & Leidner, 2001) were included as theoretical anchors.
2. **Thematic mapping.** The literature was grouped into four themes: established foundations of knowledge sharing, AI as a knowledge broker, platform mediation of tacit knowledge, and open science and epistemic justice (Table 1).
3. **Theoretical synthesis.** Findings within and across themes were compared to identify where existing frameworks, particularly the SECI model, fail to account for current conditions.
4. **Model construction.** The synthesized propositions were integrated into the Dynamic Knowledge Flow Model (DKFM), which was then compared with the SECI model and Alavi and Leidner's (2001) systems-based framework, and used to derive a research agenda.

Table 1

Thematic Mapping of the Reviewed Literature

Theme	Focus	Key sources
Foundations of knowledge sharing	Tacit-explicit continuum; leadership, climate, and culture as enablers	Chugh (2018); Park & Kim (2018); Kim & Park (2020); Castaneda Zapata & Ramirez Rojas (2022); Lartey et al. (2022); Wicaksana & Isfania (2022); Luo et al. (2023); Oranga (2023)
AI as knowledge broker	AI-augmented KM systems, recommender systems, online knowledge sharing	Bencsik (2021); Estherita & Vasantha (2024); Nguyen & Sharma (2024); Thakuri et al. (2024)
Platform mediation of tacit knowledge	Platforms as intermediaries; digital transformation; personalization vs. codification	Abbate et al. (2019); Aji & Priyono (2021); Oliveira et al. (2021); Jewapatarakul & Ueasangkomsate (2024)
Open science and epistemic justice	Knowledge co-creation, platform openness, communities of practice	Fuster Morell & Espelt (2018); Maciuliene (2022); Wang et al. (2022); Cummings et al. (2024)

Because the study involves no human participants or personal data, no ethical clearance was required. The model's propositions are offered for subsequent empirical testing rather than as tested results.

RESULTS

Established Foundations of Knowledge Sharing

The most fundamental distinction in knowledge sharing theory is between tacit knowledge, which is intuitive, embodied, and context-dependent, and explicit knowledge, which is codified and transmissible through language and documents. Nonaka and Takeuchi's (1995) SECI model dynamized Polanyi's (1966) distinction into four conversion processes: socialization (tacit to tacit), externalization (tacit to explicit), combination (explicit to explicit), and internalization (explicit to tacit).

Recent evidence confirms that this asymmetry persists. Approximately 90% of organizational knowledge is estimated to be tacit (Oranga, 2023), making externalization both the most valuable and the most friction-laden pathway. Chugh (2018), interviewing academics at four Australian universities, found that human, social, and cultural factors, rather than technological tools, primarily determine tacit knowledge transfer. Lartey et al. (2022) similarly identify corporate culture, individual characteristics, technology, and internal factors as the main barriers. Most strikingly, Castaneda Zapata and Ramirez Rojas (2022), surveying 270 participants in Colombia's financial sector, found that explicit knowledge sharing relates to strategic clarity, culture, training, and IT support, whereas tacit knowledge sharing relates

only to organizational culture. Technology designed for explicit knowledge may therefore be ineffective for tacit knowledge.

Organizational enablers are also well documented. Transformational leadership affects organizational learning both directly and through knowledge sharing climate (Park & Kim, 2018; n = 209), and organizational climate partially mediates the link between leadership and knowledge-sharing behavior (Kim & Park, 2020; n = 282). In 259 Indonesian public-sector employees, knowledge sharing predicted organizational agility, an effect strengthened by organizational culture (Wicaksana & Isfania, 2022). Luo et al. (2023) further found that digital media can weaken the negative effect of workplace exclusion on knowledge sharing, suggesting that platform architecture is not a neutral conduit but shapes who can share and with whom.

A parallel literature on open science frames knowledge as transparent, accessible, and developed through collaborative networks (Vicente-Saez & Martinez-Fuentes, 2018; UNESCO, 2021; Wang et al., 2022). Maciuliene (2022) conceptualizes open science as an ecosystem of co-creation among Quadruple Helix actors (government, academia, industry, and civil society), while Abbate et al. (2019) show that digital platforms act as co-creator intermediaries that constitute, not merely facilitate, knowledge co-creation.

Three Disruptive Forces

AI as an active knowledge broker. Historically, KM technology has been passive infrastructure: databases, intranets, and expertise directories that store and retrieve knowledge. Bencsik (2021) proposes a "sixth generation" of KM in which AI actively participates in knowledge identification, creation, transfer, and application, and can support each step of the KM process. A PRISMA-based review of AI and KM studies from 2013–2023 concludes that AI's value lies in enabling better-informed decisions rather than replacing knowledge workers, with data security and ethics as boundary conditions (Thakuri et al., 2024). AI-based content management and recommender systems lower the friction of finding and sharing knowledge (Estherita & Vasantha, 2024), and among 350 frontline employees, organizational innovation amplified the path from transformational leadership to online knowledge sharing (Nguyen & Sharma, 2024). The unit of analysis must therefore expand beyond human-to-human dyads to include human-AI, AI-AI, and AI-mediated human interactions.

Platforms and the reconstitution of tacit knowledge. The classical view holds that tacit knowledge resists digitization, but emerging evidence qualifies this. In Indonesia, equity crowdfunding platforms act as knowledge brokers that externalize entrepreneurs' experiential knowledge and distribute it to SMEs (Aji & Priyono, 2021), consistent with Grant's (1996) view that capabilities generating new knowledge underpin sustained advantage. In Thai food manufacturing SMEs, knowledge acquisition was a critical mediator of digital transformation, and digital organizational culture was a prerequisite for it (Jewapatarakul & Ueasangkomsate, 2024). Oliveira et al. (2021) found that personalization strategies support tacit sharing while codification strategies support explicit sharing, but that once tacit knowledge is made explicit it becomes much easier to circulate digitally. The tacit-explicit boundary is thus a variable permeability shaped by relationship quality, platform architecture, organizational culture, and AI capabilities.

Open science, epistemic justice, and the politics of knowledge flow. Despite institutional calls for openness, scientific knowledge creation remains closed and fragmented in practice (Maciuliene, 2022). Cummings et al. (2024) define epistemic network justice as access to helpful epistemic peers and show that communities of practice can act as agents of more equitable knowledge practices. This challenges KM's traditional treatment of knowledge

sharing as interest-neutral: credibility, network access, language, and institutional affiliation filter what actually flows. In a study of 100 collaborative platforms in Barcelona, only about one-third exhibited open practices, and technological, knowledge, and governance openness were positively correlated (Fuster Morell & Espelt, 2018). Platform governance is, in effect, knowledge governance.

The Dynamic Knowledge Flow Model (DKFM)

The DKFM integrates these three forces. It retains SECI's core insight that knowledge sharing involves conversion between tacit and explicit forms, but reconceptualizes the conversion space as a multi-layered, dynamic system rather than a two-dimensional matrix. Table 2 summarizes its four layers.

Table 2

Components of the Dynamic Knowledge Flow Model

Layer	What it represents	Main function	Grounding
1. Knowledge substrate	The tacit-explicit continuum of a knowledge ecosystem (organization, community, or platform network)	Treats tacit and explicit knowledge as governed by different conditions and mechanisms	Castaneda Zapata & Ramirez Rojas (2022)
2. AI augmentation	Recommender systems, NLP extraction, semantic analysis, predictive analytics, large language models	(a) Lowers friction in codification and combination; (b) assists tacit-to-explicit externalization	Bencsik (2021); Estherita & Vasantha (2024)
3. Platform mediation	Digital platforms and their governance architecture	Determines which conversion pathways are enabled, which knowledge is visible, and who has access	Abbate et al. (2019)
4. Epistemic justice	A normative overlay on the entire system	Asks whose knowledge enters, through what credentialing, for whose benefit, and with what exclusions	Cummings et al. (2024)

The model is distinguished by three dynamic properties. First, **endogenous boundary reconstitution**: as AI, platform mediation, and epistemic inclusion improve, more tacit knowledge becomes articulable and more articulable knowledge becomes cheaply shareable. The shift is not linear, because AI may also create new tacit knowledge embedded in model weights that is even harder to transfer. Second, **bi-directional causation between layers**:

epistemic justice shapes whose knowledge enters the substrate, which shapes what AI learns from, which shapes what platforms circulate; simultaneously, platform governance shapes who joins the justice conversation, and AI shapes the economic feasibility of platforms for marginalized communities. Third, **organizational culture as the binding medium**: consistent with prior evidence (Kim & Park, 2020; Lartey et al., 2022; Park & Kim, 2018; Wicaksana & Isfania, 2022), culture determines how much of each layer's potential is realized. Organizations with psychological safety and digital-ready, inclusive cultures will actualize the model far more fully than those where knowledge hoarding is the norm.

Table 3

Comparison of the DKFM With Existing Frameworks

Aspect	SECI (Nonaka & Takeuchi, 1995)	KM systems view (Alavi & Leidner, 2001)	DKFM (this study)
Role of technology	Supporting, largely implicit	IT as an enabler of KM processes	AI as an actor with its own learning logic
Conversion pathways	Four SECI modes	Not the central focus	SECI modes plus AI-assisted externalization
Scope	Firm-centric knowledge creation	Organizational KM systems	Platform-mediated, multi-stakeholder ecosystems across organizational boundaries
Power and equity	Treated as interest-neutral	Not addressed	Explicit epistemic justice layer
Platform governance	Not addressed	A design choice	A political-economy decision with distributional consequences

Discussion and Implications

Theoretical implications. The central implication is that knowledge sharing should be treated as a system rather than a transaction. The dominant KM paradigm models sharing as a dyadic transfer event surrounded by antecedents and outcomes. Under AI and platform mediation this is inadequate: when an AI system recommends a document, the system itself is changed by the user's response, which then shapes recommendations for others. Likewise, when a community of practice challenges a field's credentialing rules, it is not only sharing knowledge but transforming the institution that governs sharing. A second implication is methodological. The dynamic properties of the DKFM cannot be captured by cross-sectional surveys, which still dominate empirical KM research; panel data, computational network analysis, and longitudinal mixed-methods designs are needed.

Practical implications. Three implications follow for practitioners. First, AI governance should be treated as KM strategy rather than an IT decision, extending the ethical and security concerns noted by Thakuri et al. (2024) to the question of whose data trains AI brokers and

whose knowledge they amplify. Second, platform design is organizational architecture: because organizational readiness mediates digital transformation (Jewapatarakul & Ueasangkomsate, 2024), decisions about what knowledge can be entered, who can access it, and how it is validated are first-order KM decisions. Third, tacit knowledge should be a strategic investment priority. If roughly 90% of organizational knowledge is tacit (Oranga, 2023) and it relates to agility and innovation (Lartey et al., 2022; Wicaksana & Isfania, 2022), organizations focused only on repositories and databases manage at most a small fraction of their knowledge assets.

Implications for information science. The DKFM bridges three largely separate literatures: firm-centric quantitative KM research, institutional and normative open science research, and the fast-growing but under-theorized AI-and-knowledge literature. The most urgent bridge is between platform studies and epistemic justice, given that open knowledge practices and open governance co-occur on digital platforms (Fuster Morell & Espelt, 2018).

Research agenda. The model yields six priority directions, summarized in Table 4.

Table 4

Priority Research Directions Derived From the DKFM

No.	Direction	Core question	Suggested approach
1	AI-assisted tacit knowledge externalization	Under what conditions do AI tools, including large language models, support or distort tacit-to-explicit conversion?	Longitudinal field studies combining AI log data with qualitative observation
2	Platform governance and knowledge equity	How do moderation rules, algorithms, credentialing, and language support distribute knowledge sharing across groups?	Network analysis, cross-national comparison, experimental designs
3	Dynamic tacit-explicit boundary	At what rate does the boundary shift, and is some knowledge inherently resistant to externalization?	Philosophical inquiry combined with experimental cognitive science
4	Epistemic justice as an organizational outcome	Can epistemic justice be measured, and which interventions advance it?	Development of validated scales; inclusion in KM survey instruments
5	Cross-boundary flow in open science ecosystems	What friction points (credentials, language, intellectual property, incentives) hinder flow among Quadruple Helix actors?	Empirical testing of Maciuliene's (2022) framework across contexts

No.	Direction	Core question	Suggested approach
6	Knowledge sharing under algorithmic intermediation	What are the consequences of algorithmic selection for learning, innovation, and epistemic diversity?	Algorithm audits; collaboration across information science, organization theory, and computer science

CONCLUSION

This study concludes that existing knowledge sharing frameworks, particularly the SECI model, are necessary but no longer sufficient. Knowledge sharing has always involved trust, power, culture, and technology; what the present moment adds is an intensification of these forces. AI now brokers knowledge rather than merely storing it, digital platforms shape whether knowledge becomes shareable at all, and the politics of whose knowledge flows has become internal to the KM research agenda.

To address this, the study proposes the Dynamic Knowledge Flow Model (DKFM), comprising four layers (knowledge substrate, AI augmentation, platform mediation, and epistemic justice) and three dynamic properties (endogenous boundary reconstitution, bi-directional causation between layers, and organizational culture as the binding medium). The model retains SECI's recognition that tacit and explicit knowledge require different conversion processes, while adding AI-assisted externalization, a multi-stakeholder ecosystem perspective, and an explicit concern for equity. For practice, it implies treating AI governance, platform design, and tacit knowledge investment as strategic KM decisions. This study has limitations. It is a theoretical synthesis, not an empirical test; the literature review was systematic in strategy but not a formal systematic review; and the model's applicability may vary across organizational types, national contexts, and disciplines. Future research should test the DKFM's propositions through the six directions outlined above, using longitudinal and mixed-methods designs. The goal is not to reduce tacit knowledge to explicit form, but to build the human, technological, and institutional conditions under which more knowledge, from more people, can flow more freely and more fairly.

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