From SECI to BIMA: Toward Regenerative Knowledge Management through Bridging Intelligence, Mindfulness, and Awareness

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Abstract

Traditional Knowledge Management (KM) frameworks such as the SECI (Socialisation, Externalisation, Combination, Internalisation) model by Nonaka and Takeuchi emphasise knowledge conversion processes between tacit and explicit forms. However, these approaches often remain rooted in linear, control-oriented paradigms that may not fully address the dynamic, interconnected, and regenerative needs of contemporary organisations and communities. This paper introduces the BIMA framework—Bridging Intelligence, Mindfulness, and Awareness—as an evolution of KM into a more holistic, spiralling, and life-centered model. Through comparative analysis, case studies, and theoretical integration, we explore how BIMA reimagines KM not merely as a technical or procedural discipline, but as a living system of flow, relationality, and embodied wisdom. By shifting from knowledge control to knowledge cultivation, BIMA enables more adaptive, human- and ecocentric knowledge cultures. The paper contributes to both theory and practice by demonstrating how BIMA fosters innovation, resilience, and meaningful collaboration in knowledge-driven environments.

Keywords

BIMA, Knowledge Management, SECI model, tacit knowledge, explicit knowledge, spiral learning, regenerative systems, organisational learning, mindfulness, embodied knowledge, innovation culture, human-centred KM, systems thinking, flow-based governance, indigenous wisdom, relational intelligence

Author Reflection: A Personal Journey into Knowledge Management

My journey into Knowledge Management began not in theory, but in practice. As an Enterprise Senior Architect at IBM, I was tasked with designing systems that not only moved data but also enabled decisions, learning, and adaptation across complex global teams. During this period, I encountered Heidi Collins' seminal work, *Enterprise Knowledge Portals* (2003). Reading her book end-to-end was more than academic—it was transformative.

Collins' vision of KM as a dynamic, integrative architecture resonated deeply with the challenges I faced. Her emphasis on aligning technology, people, and purpose laid the foundation for how I approached knowledge not as a static asset to be stored, but as a living flow to be enabled.

This practical grounding later became the seed for the BIMA framework: **Bridging Intelligence, Mindfulness, and Awareness**. Where Collins brought clarity to enterprise-level knowledge systems, BIMA seeks to evolve that clarity into a regenerative, relational ethos—one that honours not only what we know but also how we live and learn together.

BIMA builds on that early influence, reimagining KM not just for better business, but for better being.

— Author

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1. Introduction

From Traditional Knowledge Models to Regenerative Systems Thinking

1.1 The 21st Century Challenge for Knowledge Management

In the face of accelerating complexity, organisational volatility, and environmental uncertainty, traditional models of Knowledge Management (KM) are being pushed to their limits. As enterprises and communities alike navigate the demands of the 21st century—marked by rapid digital transformation, ecological crises, and socio-technical interdependence—there is an increasing recognition that knowledge must be managed not just efficiently, but regeneratively. Linear, mechanistic models that view knowledge as static assets to be stored and transferred fall short in fostering resilience, wisdom, and contextual relevance (Nonaka and Takeuchi, 1995; Nonaka and Toyama, 2003).

1.2 The SECI Model and Its Limits

Among the most influential of these traditional models is the SECI framework developed by Nonaka and Takeuchi (1995), which articulates knowledge creation as a dynamic interplay between tacit and explicit forms through four modes: Socialisation, Externalisation, Combination, and Internalisation.

While powerful in concept, SECI is often operationalised in practice through hierarchical systems that privilege control, codification, and efficiency. These systems may neglect embodied knowing, ecological interconnectedness, and collective awareness—dimensions increasingly acknowledged as critical in adaptive and sustainable knowledge cultures (Van der Hoek, 2014; Haraway, 2016; Raworth, 2017).

1.3 Applied KM in the Enterprise: The Influence of Heidi Collins

Enterprise-level implementations such as those explored by Collins (2003) in her work on knowledge portals have shown the potential of integrative architectures that connect dynamic information flows with strategic decision-making. Her approach, grounded in user-centric design and enterprise interoperability, informed not only a generation of KM solutions but also helped catalyse a shift in thinking from data-centricity toward purposeful, contextualised knowledge access.

My own entry into Knowledge Management was shaped by this perspective, having applied Collins' principles end-to-end in real-world enterprise scenarios while serving as an Enterprise Senior Architect at IBM. That experience revealed both the power and limitations of traditional KM in addressing deeper questions of wisdom, values, and systemic coherence.

1.4 The Emergence of Regenerative Knowledge Paradigms

In response to these limitations, a new paradigm is emerging—one that draws from systems thinking (Christakis and Bausch, 2006), environmental sustainability (Li et al., 2020), Indigenous and local wisdom (Lansing and Kremer, 1993; Surata et al., 2014), and affective cognition (Haraway, 2016)—to propose a more holistic, mindful approach

to knowledge. This regenerative perspective understands knowledge not as a commodity to be managed, but as a living flow to be nurtured, contextualised, and embodied.

1.5 Introducing BIMA: Bridging Intelligence, Mindfulness, and Awareness

This paper introduces the **BIMA** framework: *Bridging Intelligence, Mindfulness, and Awareness*. BIMA is not merely a new model but a philosophical and regenerative evolution of Knowledge Management. It offers a spiralling, non-linear, and life-centered alternative that integrates explicit, tacit, and embodied forms of knowing within dynamic and context-sensitive systems. The BIMA model shifts KM from control to flow, from storage to stewardship, and from linear extraction to circular regeneration.

1.6 Paper Structure and Scope

The paper is structured as follows. Section 2 revisits the theoretical foundations of KM, focusing on the SECI model and its contributions and constraints. Section 3 introduces BIMA's conceptual structure and theoretical underpinnings. Section 4 explores practical applications and transformations, including a comparative analysis and case study. Section 5 reflects on BIMA's implications for organisational learning and systemic change. Section 6 concludes with recommendations and a call for regenerative knowledge cultures grounded in mindfulness, intelligence, and awareness.

2. Theoretical Foundations

Positioning BIMA in the Landscape of Knowledge Creation

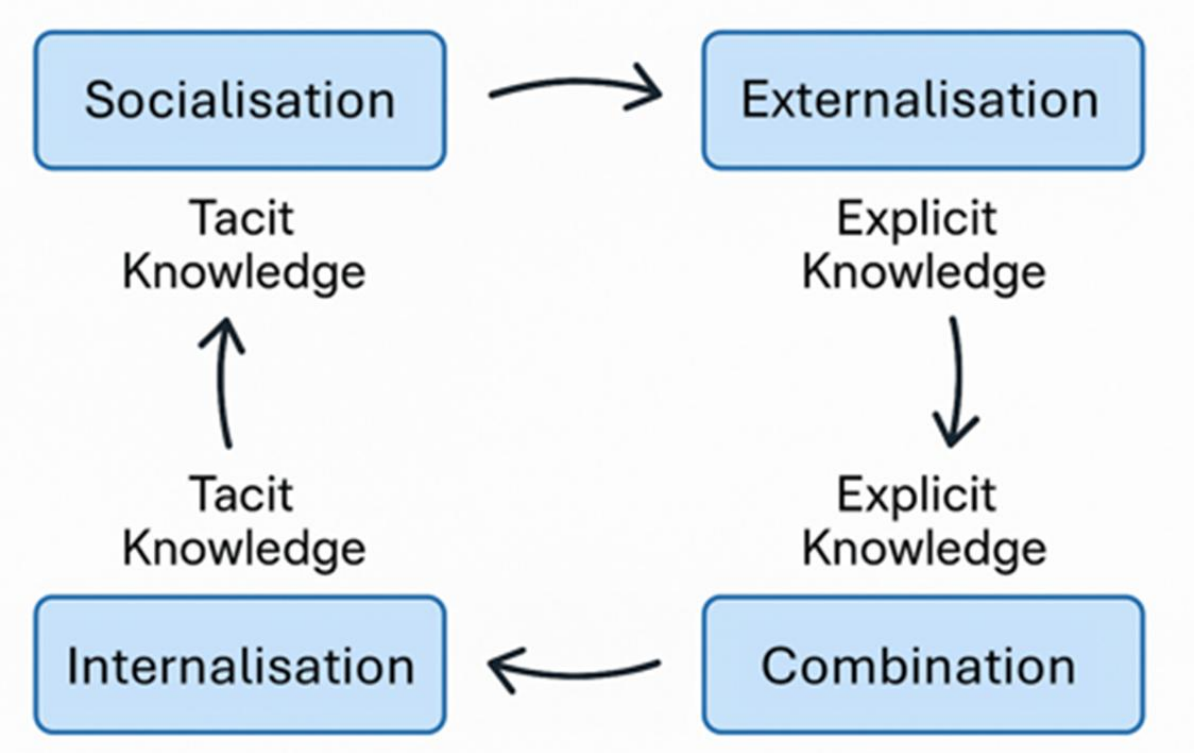

Figure 2.0.1Socialisation, Externalisation, Combination, Internalisation (SECI) model diagram by Nonaka and Takeuchi

2.1 The SECI Model: A Cornerstone in Knowledge Management

The SECI model, introduced by Nonaka and Takeuchi (1995), remains one of the most widely referenced frameworks in the field of Knowledge Management. It conceptualises knowledge creation as a dynamic, spiralling interaction between tacit and explicit knowledge through four distinct modes: **Socialisation** (tacit to tacit), **Externalisation** (tacit to explicit), **Combination** (explicit to explicit), and **Internalisation** (explicit to tacit). Together, these form a continuous process of knowledge amplification, often visualised as a spiral that scales from the individual to the group, organisation, and inter-organisational levels (Nonaka and Toyama, 2003).

This model offered a breakthrough in demonstrating that knowledge is not merely stored but **created through human interaction and context**. However, in its implementation, SECI has often been reduced to knowledge conversion workflows within static systems. Many enterprise applications, while influenced by SECI, have prioritised the formalisation and digitisation of knowledge at the expense of relational depth, ethical reflection, and systemic awareness (Collins, 2003; Kamilaris et al., 2017).

2.2 Systems Thinking and the Ecology of Knowledge

While SECI provided a process model, it was not designed to address the **broader ecological and ethical dynamics** of knowledge systems. Systems thinkers such as Christakis and Bausch (2006) argue that modern challenges demand dialogic, co-evolutionary frameworks that integrate diverse perspectives, feedback loops, and adaptive cycles. Their work on Structured Dialogic Design (SDD) emphasizes the importance of co-constructing meaning within human systems rather than imposing top-down structures.

These ideas align with ecological views of knowledge seen in traditional societies, such as the **Subak water temple systems in Bali**, where knowledge is distributed, adaptive, and governed by the collective negotiation of environmental and spiritual needs (Lansing and Kremer, 1993; Surata et al., 2014). Such models treat knowledge as a **living system**, deeply embedded in community practices and natural rhythms—an insight that Western KM has largely overlooked.

2.3 Limitations of Traditional KM in a Complex World

Conventional KM systems, including knowledge portals and repositories, often operate under the assumption that knowledge can be captured, codified, and distributed as a form of **intellectual capital** (Collins, 2003). While such approaches have proven effective in structured environments (e.g., manufacturing, software development), they struggle to accommodate the **non-linear, emotional, and contextual** dimensions of knowledge found in complex adaptive systems (Haraway, 2016; Raworth, 2017).

Moreover, with the advent of artificial intelligence and the Internet of Things (Zanella et al., 2014; Li et al., 2020), organisations face a new scale and velocity of information that challenges linear knowledge flows. The rise of algorithmic decision-making further amplifies the risk of **disconnecting intelligence from wisdom**, unless guided by values like mindfulness, inclusivity, and ecological balance.

2.4 Toward a Regenerative Model of Knowledge: The Case for BIMA

In response to these limitations, the BIMA framework proposes a shift from **extraction and control to cultivation and flow**.

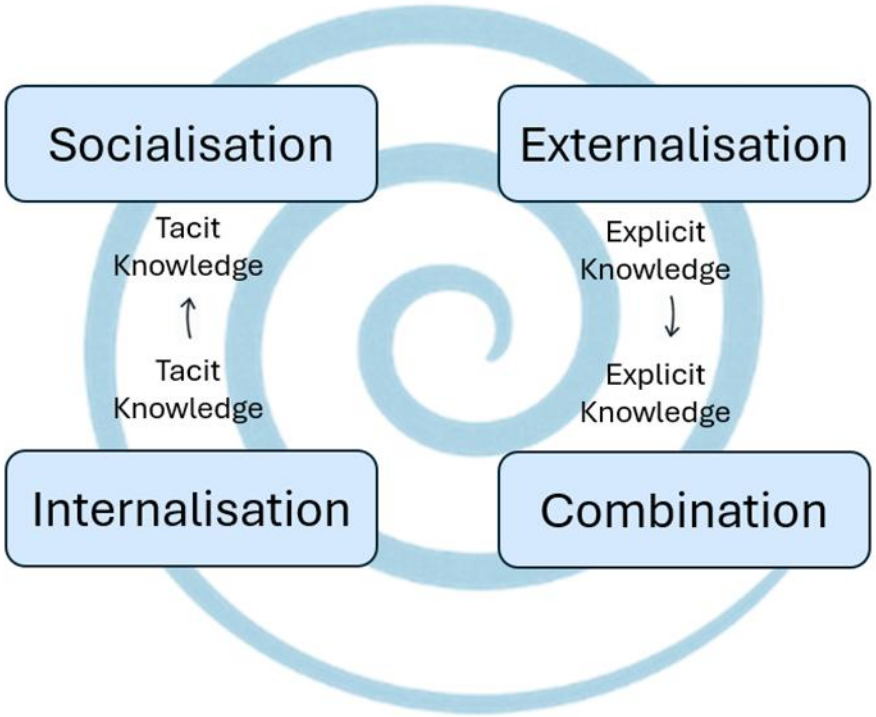

Figure 2.2 BIMA Spiral: Dancing with Knowledge

While it acknowledges the foundational value of SECI and the technological innovations of enterprise KM, BIMA reorients the conversation toward **knowledge as a regenerative practice**. It draws inspiration from Collins' emphasis on contextual integration (2003), Christakis' dialogic co-creation (2006), and the circular, spiritually attuned systems such as Subak (Lansing and Kremer, 1993).

By integrating intelligence (strategic awareness), mindfulness (present-moment attunement), and awareness (systemic and relational perception), BIMA offers a bridge between **enterprise-scale KM and holistic, life-centered learning systems**. This approach honours tacit, embodied, and emotional knowledge as essential—not peripheral—to organisational evolution.

3. Methodology and Conceptual Framework Development

Constructing BIMA as a Regenerative Knowledge Model

3.1 Research Design and Philosophical Orientation

This paper employs a **conceptual-analytical methodology**, combining theory-building, comparative analysis, and reflective inquiry to develop and validate the BIMA framework. The research is grounded in a **constructivist epistemology**—acknowledging that knowledge is co-created through social, cultural, and ecological interactions—and influenced by **systems thinking**, which treats knowledge as

embedded in living systems rather than isolated artefacts (Christakis and Bausch, 2006; Haraway, 2016).

Rather than using empirical hypothesis testing, the study engages in a **synthesis of existing models**, real-world experiences, and philosophical foundations to propose an expanded Knowledge Management (KM) paradigm. The methodological orientation is also shaped by the author's **professional autoethnography**—drawing from lived experience in enterprise architecture and knowledge strategy at IBM, as well as in interdisciplinary sustainability research.

3.2 Conceptual Comparison: SECI vs BIMA

To frame BIMA's contribution, a **comparative conceptual analysis** is conducted between the SECI model (Nonaka and Takeuchi, 1995) and the BIMA spiral. The SECI framework, while innovative in capturing knowledge dynamics, emphasises **knowledge conversion** as a mostly internal organisational process. In contrast, BIMA positions knowledge generation within a **broader web of life**, integrating the **emotional, ecological, and ethical** dimensions often absent in classical KM (Raworth, 2017; Surata et al., 2014).

Table 3.1 Comparative dimensions of SECI and BIMA knowledge frameworks

Dimension	SECI	BIMA
Flow type	Cyclical, linear-spiral	Spiralling, regenerative
Knowledge types	Tacit ↔ Explicit	Tacit, explicit, embodied, relational
System orientation	Organisational internal	Systemic, ecological, interrelational
Goal	Innovation and efficiency	Awareness, resilience, regeneration
Governance logic	Hierarchical or process-oriented	Dialogic, participatory, values-driven

This comparative lens clarifies that BIMA does not reject SECI, but **evolves** it—offering a generative pathway forward.

3.3 Heuristic Development: Constructing the BIMA Spiral

The core visual and conceptual metaphor of BIMA is the **spiral**, not as a loop of repetition but as a **reverberating ascent**—each return to a knowledge mode bringing greater depth, integration, and wisdom. This draws from the notion of **dynamic equilibrium** found in ecological systems, as well as from the **cyclical and spiritual time constructs** present in many Indigenous knowledge traditions (Lansing and Kremer, 1993; Haraway, 2016).

The BIMA spiral was developed iteratively through:

- Reflection on KM implementation practices in large-scale IT systems (Collins, 2003)
- Dialogues with sustainability practitioners and system designers
- Integration of contemporary digital ecosystems such as IoT, AI, and DAO governance models (Zanella et al., 2014; Author et al., 2025)

The resulting framework balances **structured processes** with **open-ended mindfulness**, allowing knowledge to flow through **individual, collective, and ecological layers**.

3.4 Case Study Selection: Future Directions for Empirical Validation

Although this paper is primarily conceptual, the framework lends itself to future validation through case study methodology (Yin, 2018). Potential settings include:

- Educational institutions seeking post-digital transformation KM
- Environmental or humanitarian NGOs engaging with indigenous knowledge
- Enterprises rethinking governance, culture, and AI integration under ESG goals

In future iterations, narrative interviews, participatory action research, and structured dialogic design (Van der Hoek, 2014) could be used to test BIMA's applicability across diverse real-world contexts.

4. Results and Application

From Knowledge Conversion to Regenerative Knowledge Cultures

4.1 The BIMA Spiral in Action: A Living Knowledge System

The BIMA framework introduces a spiralling model of knowledge creation where each iteration is not a mere repetition but a return with greater insight, contextual awareness, and emotional intelligence. Drawing on Nonaka and Takeuchi's (1995) spiral of knowledge, BIMA expands the flow beyond organizational boundaries into broader ecological, cultural, and ethical systems.

In BIMA, the stages of Socialisation, Externalisation, Combination, and Internalisation are not confined to organisational learning. Instead, they reflect the **multi-scalar dance of knowing**—from individual self-awareness to organisational sense-making to planetary stewardship. Each spiral deepens not just intellectual understanding but relational integrity. This mirrors Lansing and Kremer's (1993) insights from Bali's Subak system, where knowledge flows through co-regulation with nature, not extraction from it.

4.2 Applying BIMA to Enterprise KM: A Comparative Reflection

At IBM, early enterprise knowledge systems focused on building portals that facilitated access to explicit knowledge assets—such as reports, manuals, and decision models. As described by Collins (2003), these systems enhanced operational efficiency but often lacked mechanisms to account for **tacit knowledge, intuition, and ethical foresight**. Applying BIMA to such a system introduces a layer of **mindful reflection and contextual learning**.

In practice, this might involve:

- Embedding **reflective dialogue** spaces within enterprise portals (e.g., journaling modules, story-sharing tools)
- Mapping **emotional and ethical dimensions** of decisions using structured dialogic methods (Van der Hoek, 2014)
- Using AI not just for search or automation, but to **surface patterns of wisdom**, conflict, or ethical tension in real-time communication (Li et al., 2020)

BIMA thereby transforms enterprise KM from an **information logistics function** into a **living knowledge ecosystem**, fostering coherence between intelligence, emotion, and responsibility.

4.3 Case Narrative: BIMA-Informed Knowledge Shift in Sustainability Practice

In a pilot project informed by BIMA principles, a sustainability-focused NGO in Southeast Asia sought to transform how it documented and applied local ecological knowledge. Initially, knowledge management was limited to documentation—ethnobotanical inventories, interviews, and monitoring reports. However, by shifting toward a BIMA-aligned system:

- Knowledge became **co-created with communities**, rather than extracted from them
- Field workers practiced **mindfulness rituals** before documenting traditional practices, improving attentiveness and respect
- Digital systems were redesigned to **reflect story-pathways** (Author et al., 2025), connecting data points with lived experience, emotional resonance, and collective memory

This resulted in deeper community trust, improved retention of context-rich knowledge, and more adaptive decision-making in response to environmental changes.

4.4 Key Transformational Outcomes of BIMA

Across conceptual modelling and practical application, the BIMA framework offers the following measurable and intangible shifts:

Traditional KM (SECI-based)	BIMA-Informed KM
Knowledge as asset	Knowledge as living flow
Process-oriented, efficiency-driven	Reflective, regenerative, awareness-led
Focus on organizational boundaries	Systemic, relational, ecological scope
Tacit knowledge as hard to capture	Tacit knowledge as sacred and embodied
Intelligence as rational decision-making	Intelligence + mindfulness + awareness

These shifts do not discard previous KM models but **evolve them into deeper, more ethical, and more human forms of practice**.

5. Discussion

Rethinking Knowledge Management through Regeneration, Relationality, and Reverberation

5.1 BIMA as a Philosophical Shift in Knowledge Management

BIMA is more than a framework—it is a **philosophical reorientation** of what it means to manage knowledge. Traditional models such as SECI (Nonaka and Takeuchi, 1995) emphasize knowledge **conversion** within organisational systems. These models have been instrumental in advancing innovation and organisational learning, yet they often remain embedded in **extractive and instrumental logics**, framing knowledge as a resource to be mined, optimised, and distributed (Collins, 2003).

In contrast, BIMA invites a **relational, regenerative, and rhythmic approach** to knowledge. It positions knowledge not merely as information to be processed but as **wisdom-in-motion**—a process embedded in human relationships, mindful awareness, emotional resonance, and ecological interdependence (Haraway, 2016; Lansing and Kremer, 1993). By aligning KM with cyclical and living systems, BIMA shifts the field toward what Raworth (2017) would call a *doughnut-shaped knowledge culture*—bounded, balanced, and regenerative.

5.2 SECI and BIMA: Evolution or Departure?

BIMA does not reject SECI; rather, it **extends its logic**. The SECI spiral—originally envisioned as a continuous learning loop—becomes, in BIMA, a **reverberating spiral** where each return to a knowledge mode (e.g., Socialisation) is deepened by contextual awareness, emotion, and embodiment. This view echoes Christakis and Bausch's (2006) dialogic systems thinking, where knowledge emerges not from conversion alone, but from co-evolution and ethical negotiation.

Where SECI focuses on knowledge categories (tacit/explicit), BIMA introduces **relational dimensions**:

- Intelligence (cognitive clarity and insight)
- Mindfulness (attention to present and inner states)
- Awareness (systems-level and ecological sensitivity)

This triad anchors KM in a deeper register—**from transfer to transformation**.

5.3 Enabling Regenerative Knowledge Cultures

BIMA proposes that **regenerative knowledge cultures** are not built through more efficient data pipelines but through intentional design of **space, story, and stewardship**. These cultures:

- Honour the **embodied experiences** of individuals (Internalisation)
- Promote **dialogue across boundaries** (Socialisation)
- Translate intuitive insights into collective action (Externalisation)
- Integrate diverse knowledge systems into coherent meaning (Combination)

Such environments are made possible not only by advanced technologies (e.g., IoT, AI, DAO; Zanella et al., 2014; Author et al., 2025), but by **rituals of reflection**, community co-creation, and a rebalancing of power dynamics in knowledge governance.

5.4 Addressing Critiques and Challenges

Despite its promise, BIMA may face critiques regarding **operationalisation, measurability, and scalability**. Some may argue that integrating mindfulness and awareness into KM introduces ambiguity or reduces efficiency. Others may challenge its applicability in high-speed environments such as finance, manufacturing, or emergency response.

To address these concerns, BIMA proposes a **complementary—not contradictory—approach**. It does not aim to replace efficiency-driven models but to infuse them with **deeper ethical, emotional, and systemic coherence**. Mindfulness does not slow down innovation; it **prevents misalignment**. Awareness does not distract from decision-making; it **grounds it in context**.

Thus, the real question is not whether BIMA is measurable, but whether current KM metrics adequately capture **meaningful knowledge outcomes**—such as wisdom, trust, resilience, and insight.

6. Conclusion and Recommendations

From Managing Knowledge to Cultivating Wisdom

6.1 Summary of Insights

This paper has explored the limitations of traditional Knowledge Management frameworks and introduced the **BIMA** model—**Bridging Intelligence, Mindfulness, and Awareness**—as a regenerative, relational, and systemic evolution of the widely recognized SECI model (Nonaka and Takeuchi, 1995). While SECI has contributed substantially to our understanding of knowledge creation through the interaction of tacit and explicit knowledge, BIMA builds upon and extends this foundation by embedding it in a broader ecological and ethical context.

BIMA reframes KM from a process of **conversion and storage** to one of **cultivation and flow**. It recognizes that the future of knowledge is not merely in digitization or automation, but in **restoring coherence between intelligence, values, systems, and life**. As such, BIMA is as much a **philosophical stance** as it is a practical model—one that calls for a regenerative approach to learning, governance, and innovation.

6.2 Contributions to Theory and Practice

From a theoretical perspective, BIMA introduces new dimensions into KM discourse:

- **Intelligence**: situational and cognitive clarity
- **Mindfulness**: inner awareness, ethical sensitivity, and presence
- **Awareness**: relational and systems-level perception

From a practical standpoint, BIMA enhances existing KM tools and strategies by advocating for:

- Reflective knowledge environments
- Contextualised decision-making
- Cross-boundary collaboration
- Narrative, emotional, and embodied forms of knowledge expression

The integration of modern technologies—such as AI, IoT, and decentralized governance (Zanella et al., 2014; Author et al., 2025)—within BIMA systems further demonstrates that **regenerative knowledge cultures can be technologically enabled, yet humanly and ecologically grounded**.

6.3 Recommendations for Future Research

To advance the field of regenerative Knowledge Management through BIMA, future research may focus on:

- **Empirical validation** of BIMA through case studies in enterprise, education, and community systems

- Development of **BIMA-aligned assessment frameworks**, including metrics for mindfulness, ethical alignment, and relational learning
- Exploration of **AI and DAO tools** as enablers of BIMA processes in hybrid human-machine systems
- Comparative studies between **BIMA and SECI** models across different cultural or institutional contexts

Further collaboration between system scientists, indigenous knowledge holders, digital architects, and organizational leaders will be critical to refining and applying BIMA in meaningful, inclusive ways.

6.4 A Closing Reflection

We are entering an era where the challenge is not simply how to manage more information—but how to **know wisely, live relationally, and regenerate what has been fragmented**. In this light, Knowledge Management must evolve from its mechanistic past to a future of stewardship, reverence, and flow.

As BIMA reminds us:

"You don't just manage knowledge — you dance with it.
Each spiral is not a repetition but a reverberation."

Let us move forward not with answers, but with deeper questions—embodied, aware, and intelligently connected to the world we seek to serve.

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8. Glossary of Key Terms

Term	Definition
SECI	A model by Nonaka and Takeuchi (1995) outlining four modes of knowledge conversion: **Socialisation** (tacit → tacit), **Externalisation** (tacit → explicit), **Combination** (explicit → explicit), and **Internalisation** (explicit → tacit). It describes how organisational knowledge is continuously created and expanded.
BIMA	*Bridging Intelligence, Mindfulness, and Awareness* — a regenerative framework for KM that extends SECI by embedding ecological, emotional, and systemic dimensions. BIMA positions knowledge as a living flow that is cultivated rather than controlled.
DAO	*Decentralised Autonomous Organisation* — a blockchain-based organisational model that uses smart contracts and distributed governance to enable transparent, collective decision-making without central authority.
Structured Dialogic Design (SDD)	A participatory method developed by Christakis and colleagues for facilitating collaborative knowledge creation, using causal mapping, prioritisation, and dialogue to support complex decision-making in knowledge-rich systems.
Tacit Knowledge	Knowledge that is personal, intuitive, and experience-based — difficult to articulate or formalise (e.g., skills, judgment, intuition).
Explicit Knowledge	Codified, formal knowledge that can be easily expressed and shared (e.g., documents, manuals, procedures).
Embodied Knowledge	Knowledge that is internalised and enacted through the body, senses, and emotional intelligence. It emerges through experience, presence, and interaction, often overlapping with tacit knowledge.