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Connections between Vibe Coding and Knowledge Creation: Examination of Organizational Implications of AI-Mediated Software Utilization

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Abstract

The continued development of vibe coding indicates a paradigm shift in how AI-assisted software brings an evolving and significant challenge to established organizational processes, along with knowledge creation practices. Utilizing the established SECI framework associated with organizational knowledge management and creation processes, this paper provides a conceptual examination of the utilization of natural-language-driven and large language model (LLM) content generation influencing knowledge conversion processes in the context of organizational learning practices. Drawing on extant literature, this paper provides an argument that vibe coding indicates the transitional shift in how organizational personnel externalize, combine, and internalize knowledge to advance a foundational perspective of vibe coding and future research considerations.

Keywords: Vibe Coding, Knowledge Creation, Generative AI, SECI Model, Organizational Learning

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1. Introduction

The knowledge management model (SECI) involving four modes of knowledge creation (socialization, externalization, combination, and internalization) is often referenced as the common approach to understanding knowledge (Nonaka, 1991, 1994; I. Nonaka & H Takeuchi, 1995). It is also recognized that the model provides a framework for understanding organizational approaches to knowledge within the given environment of the organization, as each organization can apply varied approaches based on its own context of knowledge management. As such, the model provides an opportunity for the organization to reflect on its own specific processes and seek new methods to engage with new techniques that might be applied to knowledge creation processes. The SECI model provides the perspective of knowledge creation through continuous connections between both tacit and explicit knowledge. The four modes of SECI demonstrates how socialization creates tacit knowledge through a series of either formal or informal interactions designed to share insight and experiences with others; externalization converting tacit to explicit knowledge through codified instructions and procedures, rules, and other means to assist individuals in the understanding of the tacit knowledge; combination allows for explicit knowledge to be converted to additional explicit knowledge in the form of more complex structures; and internalization explores how explicit knowledge can then be converted back to tacit knowledge through appropriate application of that knowledge (Nonaka, 1994). As additional technologies are obtained for task completion and to support multiple organization infrastructures, it is essential to examine how one aspect of AI-assisted content generation impacts the overall SECI process and general knowledge management processes.

As noted by Philipson and Kjellström (2020), dynamic changes in environmental variables often result in new knowledge creation, which then impacts organizational innovation and learning opportunities. Organizations need to continue their learning aspects and expand their knowledge to assist in their adaptation to emerging technologies. By establishing a knowledge-based culture, the organization is committing itself to the KM overall vision of providing both formal and informal means, allowing workers to engage with each other to support the SECI model aspects. Further, learning becomes a key component within the SECI model; however, it is not guaranteed that knowledge is gained and relevant to the organization process (Bratianu & Orzea, 2010). Although multiple influences can impact the knowledge processes, technologies are acknowledged as being one of these major influential items. It should also be noted that technologies serve to support KM processes and assist knowledge workers; technologies do not necessarily serve as a motivator for engaging with knowledge processes (Chang & Lin, 2015). Therefore, it becomes important for organizations to examine new technologies and their impact on KM processes.

The emergence of vibe coding over the past couple of years has initiated a potential shift in the use of AI within the area of software development and content creation, but has also shown a more unexplored influence on knowledge management itself. The term “vibe coding” was initially introduced by Andrej Karpathy (AI researcher and founding member of OpenAI) in 2025 in a social media post and further defined as a concept of “using AI without the understanding...” and further recognized as an evolutionary shift from more traditional development foundations toward more conversational-based interactions dictating intuitive expressions over more detailed specifications (Quiroz-Gutierrez, 2025). Within the context of this paper, vibe coding is not specifically viewed as a means to support software development but rather suggests vibe coding is a means to support multiple areas of content and document generation and is a term which can lend itself as a tool for human users to gain access to explicit knowledge. The generated content can then be applied and utilized within current organizational practice and task processes. Essentially, vibe coding provides the opportunity to develop content simply through the process of “ask something; get something,” but also potentially occurs without prior knowledge of the subject content. The further challenge is then associated with how explicit knowledge is converted either to support higher level explicit knowledge or converted to tacit knowledge for appropriate utilization on behalf of the human user.

Vibe coding is viewed as a subset of AI-assisted content development; however, the perspective of vibe coding shifts toward developing content based on the user's end-goal intent through clear high-level prompts. Therefore, it is perceived that vibe coding reduces the need for demonstrated expertise in the content and potentially lowers the requirement for specific training in business tasks. Whereas more traditional AI-applications may require the user to guide how to do a task, vibe coding allows the AI to provide content without expertise guidance from the user. Further, this also reduces the need for specific knowledge on proper validation and critical evaluation of the AI response without the expectation of user understanding. Meske et al. (2025) provided an additional perspective on defining vibe coding where “artifacts” are created through engaged interchange with AI-based systems, essentially providing an alternative path for how knowledge can be envisioned and obtained. Essentially, this type of engagement seeks to provide more effortless interactions and more “seamless idea generation” (Gaggioli et al., 2020) between the human user and the AI application. As such, vibe coding provides the means toward an evolving aspect of the knowledge management SECI process.

As shown in Figure 1, the four modes of the SECI process provide opportunities for a shared experience between individuals, articulating the concepts, synthesizing artifacts, and building on the understanding of those artifacts. However, there can be a perception of challenges within the SECI process associated with vibe coding. Whereas the externalization quadrant allows the user to build on a conversation with the AI application to develop content further, the socialization quadrant can be limited unless further actions are provided. Socialization is an aspect where one individual is expected to have shared experiences with another, and in this case, it is expected that the shared experience can provide tacit knowledge on appropriate prompt development to interact with the AI application. Without this type of shared experience for tacit-to-tacit knowledge transfer, an individual may risk being unable to develop and build on appropriate vibe-coding prompts to generate explicit knowledge through the AI application. Combination is demonstrated as the AI application utilizes the vibe coding prompts from the individual and then generates content through its own connections to other explicit forms of knowledge. However, another aspect of the SECI model that can prove to be problematic is the internalization component, where it is expected that the individual will appropriately apply the new explicit knowledge and develop new tacit knowledge. As suggested through the SECI model, the knowledge creation emphasizes the need to have the knowledge support ongoing development (Alavi et al., 2005; Cerchione et al., 2024; Chang & Lin, 2015).

Figure 1. Four modes of SECI connecting to vibe coding and AI utilization

<p style="text-align: center;">SOCIALIZATION</p> <p style="text-align: center;">Shared Experiences – Tacit to Tacit</p> <p>An individual requires the transfer of knowledge from another to develop appropriate prompt understanding.</p>	<p style="text-align: center;">EXTERNALIZATION</p> <p style="text-align: center;">Articulating Concepts – Tacit to Explicit</p> <p>A conversation with AI through vibe coding provides an opportunity for idea formation.</p>
<p style="text-align: center;">INTERNALIZATION</p> <p style="text-align: center;">Developing Understanding – Explicit to Tacit</p> <p>An individual develops tacit knowledge through the codified explicit knowledge from the AI</p>	<p style="text-align: center;">COMBINATION</p> <p style="text-align: center;">Synthesizing Artifacts – Explicit to Explicit</p> <p>AI provides codified knowledge through its existing connections to other explicit knowledge.</p>

Further, a new era of knowledge development through vibe coding begins to emerge as the AI-based application provides the knowledge, and the human user selectively engages with the application through prompts requesting guidance and possible solutions. As stated by Weber et al. (2024), when good-quality prompts are utilized, AI-based applications can potentially provide higher levels of content explanations and documentation. These interactions reshape the SECI process by now including a collaborative effort between the human user and the AI system, influencing skill development and knowledge quality (Dellermann et al., 2019). The emergence of vibe coding potentially introduces challenges and a shift in knowledge management processes, ranging from requirements of expertise in content areas to overall knowledge gaps, which can lead to the reduction of requirements to complete tasks. Although these types of challenges can already exist, vibe coding requires another level of organizational awareness to establish oversight and guidance. Therefore, vibe coding is viewed as providing users with a means of content generation, but does not necessarily require a critical understanding of the findings themselves. Although the practice of using artificial intelligence generative language models within content creation has seen an increase in utilization, it is argued that the implications for knowledge creation theories also need to be addressed. This paper seeks to bridge the gap between these two topic areas and identify key themes connecting the concept of “vibe coding” and knowledge management.

The methodology for this paper included a review of academic journal articles, conference proceedings, and other peer-reviewed studies. The nature of the review included identifying artifacts relying, but not limited to, keywords such as artificial intelligence, vibe coding, and knowledge management. Although knowledge management research on the SECI model provides a wide spectrum of extant studies, limitations to this paper are related to the more recent nature of the term “vibe coding,” therefore reducing the historical aspect of its impact on organizational policies. Artificial intelligence is also a subject across the past several years, but has gained more attention as the utilization of AI has continued to become more embedded into organizational structures and processes. The review of articles was focused on topic areas such as information systems, computer science, business management, and ethical foundations. The structure of the paper is designed to provide a conceptual foundation for future research studies based on the recognition of how more accessible

AI-based applications have become within organizational structures. The sections that follow provide a literature review of KM, knowledge creation, and the SECI model connections toward vibe coding while also exploring its connections to technology acceptance, organizational learning, and technology fit models. The paper continues with an examination of vibe coding within the context of knowledge creation, which leads toward an illustrative perspective of vibe coding as part of the SECI model. Finally, suggestions for practitioner governance of vibe coding within the KM process and suggestions for future research agendas are provided.

2. Literature Review

Knowledge management and processes have also been extensively researched across several decades with a baseline framework model such as SECI being provided initially and in revised versions (Nonaka, 1991, 1994; I. Nonaka & H. Takeuchi, 1995; Nonaka et al., 2006). In addition, the concept of knowledge itself has also been widely accepted and viewed as part of the KM processes (Marjanovic, 2010). It is also accepted that tacit and explicit knowledge are two types of knowledge (Alavi & Leidner, 2001; Nonaka, 1994). Whereas explicit knowledge is more formally stated through a specific codified context or written form (Nonaka, 1991; I. Nonaka & H. Takeuchi, 1995; Polanyi, 1961), it is tacit knowledge that poses more challenges, given its subjective and individualistic behavior as tacit knowledge learned through experience. As modeled by Nonaka and Takeuchi (1995), SECI provides guidance on the process with which to develop knowledge and illustrates the continuous conversion process between tacit and explicit knowledge. Further, the model seeks to provide an understanding of these interconnections and the overall dynamic nature of knowledge creation. It is this conversion process through which individuals, and therefore organizations, will be able to gain new knowledge to be applied to established practices or solicit potential alternative tasks.

Within the framework of knowledge creation, it is recognized that knowledge-intensive processes (KIPs) and tasks also exist within organizational structures. As such, organizations need to recognize the areas requiring more knowledge-based experience and training, which can include, but are not limited to, areas such as software development and engineering, within the context of this paper. Organizations across multiple industries can all include various knowledge-intensive processes that require a higher level of knowledge to complete certain tasks (Little & Deokar, 2016). Additionally, it has been established that KIP often requires a higher level of innovative learning tasks along with extended time periods to grasp task requirements and expectations (Berniak-Wozny & Szelagowski, 2022; Unger et al., 2015). As suggested through a research study by Weber et al. (2024), which examined the use of AI-based applications in software development, differences in how AI support tools were used depended on the complexity of task requirements and indicated that individuals with lower technical skills tended to use shorter AI prompts while more experienced employees utilized more elaborate prompts. As such, prior experience and deeper knowledge of the content can assist in more robust collaborative efforts between the human user and the AI application. Therefore, the AI-assisted knowledge generation can potentially demonstrate solutions beyond the user's current experience (Meske et al., 2025), which influences an individual's expertise in knowledge-intensive processes.

Another aspect of knowledge management studies has focused on the cultural influences and barriers within organizational structures. These perspectives are often cited as a continuing challenge for organizations to grasp as technologies evolve to support knowledge-intensive processes and tasks (Alavi et al., 2005). Further, previous studies have shown the essential aspect of having organizations work to develop multiple aspects of KM processes, such as where knowledge is obtained, the mediums through which knowledge is shared, and to whom the knowledge is directed (Miranda & Saunders, 2003; Sussman & Siegal, 2003). Additional studies (Meyerson & Martin, 1987) provided the perspective suggesting organizations have more than one embedded culture influencing KM processes, which does provide an argument where functional areas of organizational structures establish their own influential components. Although it might be beneficial for an organization to develop a more unified approach to its knowledge culture, it does seem plausible for each functional area or silo of the organization to develop different influences based on leadership, experiences, task dependencies, and events through the virtual medium (Ardichvili et al., 2006; De Long & Fahey, 2000; Magnier-Watanabe & Senoo, 2010). Additional studies have explored the relationship between how leadership handles knowledge tasks through more flexible or rigid governing policies. Knowledge sharing behavior amongst individuals was found to be negatively impacted when policies attempted to control the process more rigidly (Chang & Lin, 2015), suggesting organizations seek to provide more flexibility in knowledge sharing experiences.

Extant literature has explored the concepts of the acceptance of technologies within organizational structures extensively. One such perspective examined involved the development of the technology acceptance model (TAM) initially introduced by Davis (1985, 1989), which modeled the overall end-user acceptance toward technologies. This was further studied through a revised model of TAM, indicating user-defined perceived usefulness (Venkatesh & Davis,

2000). Although these models do provide a framework for how organizations implement and utilize technologies and infrastructures, the continuing development of artificial intelligence-based applications for various knowledge-intensive processes may also present challenges in both implementation and understanding (Hasija & Esper, 2022). This will further emphasize whether or not the use of such AI-based technologies will be vital to the overall task being performed (Nysveen & Pedersen, 2016; Yoo et al., 2012). Further, as noted by Hadidi and Power (2020), new and innovative technologies continue to demonstrate usefulness to the point where they can be deemed beneficial to both individuals and organizations. Similar to the TAM structure, Goodhue and Thompson (1995) proposed the theory of task-technology fit to explore the connections between tasks and technologies. Within the theory, it is recognized that the individual needs to understand the task characteristics, which can be supported by the technology characteristics. To have a higher impact on task performance, the overall task-technology fit needs to be established. As such, there needs to be a direct practical aspect to the use of the technology, which fits the need. One aspect of this theory indicates that individual characteristics also influence the context of the perceived fit. The task-technology fit theory is associated with how technology meets the needs of the individual, or perhaps the organization as a whole, toward the given task (Pal & Patra, 2020). Within TAM, vibe coding may not be seen as being accepted; however, the task-technology fit theory indicates the opportunity where vibe coding may be the technology that is a good fit for particular tasks. Whereas TAM leans toward individual perceptions of technology acceptance and fit, two other theories can provide a wider perspective for an organization.

Additional literature and research have examined the broader perspective of organizational learning where individuals have the ability to “create the results they truly desire,” and the organization benefits from the continual learning across the organization (Senge, 1990). Within this framework of the organizational learning theory, it is the ability of the organization to be adaptive and flexible that allows the organization to continually learn to be beneficial. However, as stated within this theory, individuals may not have the resources or guidance to help them understand the content. The theory can also be perceived across two main concepts referred to single-loop and double-loop learning. The differences between these two concepts are connected to the overall scope of the learning process. Whereas single-loop learning allows for adjustments to influence performance without altering policies, double-loop learning initiates more in-depth evaluation and modifications across the organization (Edmonson & Moingeon, 1998). As vibe coding suggests, prior knowledge of the content desired is not required, which also reduces the ability to understand the AI-provided response. As such, vibe coding can be perceived as limiting the double-loop learning ability, as the deeper understanding of how to apply the provided knowledge may not be hindered.

Another perspective explored is associated with the affordances theory, which was expanded by Gibson (1979), in which a human user can perceive what an object can offer and not the properties of the object directly. In this case, if vibe coding is viewed through the affordances concept, humans can view vibe coding and the use of AI applications as a direct opportunity to gain potential new knowledge. If vibe coding is to be viewed as an affordance, Gibson’s theory suggests three foundations: an affordance does not necessarily exist for another person; an affordance exists independently of the user’s ability to perceive it; and an affordance does not change despite changes in the goals of the person. If vibe coding is perceived as an affordance, vibe coding is viewed as providing the opportunity to gain solutions or insights based on the request of the user. Additionally, vibe coding exists and is available whether it is being utilized or not by an individual, and it continues to provide content despite changes in the user’s goals and objectives. However, as Gibson further noted, the ability to understand the affordance can depend on additional factors such as experiences and other cultural influences (Volkoff & Strong, 2017); however, these can be enhanced through training, education, and ongoing experiences (Faraj & Azad, 2012).

3. Vibe Coding within the Context of Knowledge Creation

Across more recent years, the development of artificial intelligence (Bencsik & Szalai) has also led to the establishment of large language models (LLMs), which have influenced various industries and applications. As such, it is clear the use of LLMs, such as ChatGPT, Claude, GitHub Copilot, Google Gemini, and others, has also started to influence organizational processes such as knowledge management. These are designed to be able to anticipate user intent, suggest potential corrections, and propose relevant knowledge within the context of the process function through which the AI is being referenced (Sergeyuk et al., 2025; Ulfesnes et al., 2024). With KM defining organizational frameworks as to how knowledge can be obtained, stored, created, and distributed, AI and LLMs provide processes for automating tasks, summarizing data and information, and text generation, and as such, can be viewed as contributing to the KM processes (Chiarello et al., 2024). These AI-generative tools can then be argued as an evolving influence toward KM tasks ranging from generalized automated decision-making processes to more complex strategic initiatives. Although a more recent study (Nguyen, 2025) has explored this influential technology within a higher education environment, similar concepts can also be viewed outside the realm of education.

Overall, generative AI tools have already begun providing organizations with a different medium through which KM can be assessed. As Nonaka et al. (1991, 1994; 1995; 2006) have examined KM development and others have reviewed cultural influences on KM (Alavi et al., 2005), the role of generative AI concepts should also become a part of research studies. It should also be acknowledged that technological advancements have influenced organizational processes for many decades, and as these technologies evolve, they have been embedded into organizational tasks (Fousiani et al., 2024; Wright & Schultz, 2018) and potentially impact adoption strategies (Yu et al., 2023). Within the larger scope of LLMs, the concept of “vibe coding” has emerged, defining how “natural language descriptions” can be converted into content (Cabot, 2025) and even described as a means for “an iterative, conversational workflow” (Meske et al., 2025). Although vibe coding is more often associated with programming and system development, it should be acknowledged that these aspects require a higher level of knowledge to work toward completion. Therefore, as a knowledge-intensive process, vibe coding will also be a direct influence on the broader perspective of KM and knowledge conversion experiences.

As noted previously, although the SECI process for knowledge creation does provide a model for the conversion aspects between tacit and explicit knowledge, the use of vibe coding can present some underlying challenges requiring organizational oversight. As shown in Figure 1, the aspect of socialization requires individuals to know appropriate prompt the AI application to begin the conversation with the AI application. Socialization provides the opportunity for individuals to share their experiences through an exchange of tacit knowledge (Han & Zhao, 2026). It is through these socialization aspects that one individual can learn how to appropriately prompt the AI for content generation. As vibe coding is often perceived as not requiring a higher level of experience, individuals may not have the opportunity to interact through socialization activities. Therefore, the vibe coding experience of the individual may be reduced due to the lack of appropriate tacit knowledge to engage the AI in a meaningful manner. This can lead to a decrease in the ability to convert new explicit knowledge into new tacit knowledge as part of the internalization process. Without proper guidance, the expected ascending spiral of the SECI model (Nonaka, 1994; I. Nonaka & H Takeuchi, 1995) most likely will not be effective but rather becomes more cyclical in nature, where we see vibe prompting leading to output and back to an additional vibe prompt. The aspect for consideration is how internalization can be enhanced to form stronger vibe prompts.

3.1 Externalization without Internalization

As suggested within the SECI framework (Nonaka, 1994; I. Nonaka & H. Takeuchi, 1995), KM utilizes two processes identified as externalization and internalization. Extant studies have defined externalization as the means to convert tacit knowledge into explicit forms, whereas internalization is the conversion of explicit knowledge into tacit knowledge, which corresponds to the overarching process of learning. With knowledge-intensive processes, often perceived as requiring higher levels of intuition, judgment, critical thinking, and extensive knowledge of context for the process action, it is generally obtained through ongoing intentional experiences and interactions (Casillas et al., 2009; Tsai & Lee, 2006). Further, as noted by Cohen and Levinthal (1990), it becomes an important part of the process to have individuals dedicate more effort toward learning knowledge to enhance the use of knowledge for later purposes.

Through these ongoing experiences to obtain knowledge, the conversion of internalization becomes part of an individual’s tacit knowledge dedicated toward specific work contexts associated with knowledge-intensive processes and even more generalized task association. Vibe coding, as described in the previous sections, then leans toward reducing the effort of an individual to work through a particular task, and therefore potentially reducing the level of internalization undertaken. Tacit knowledge required by the individual is not necessarily required as the AI application itself becomes the source of tacit knowledge. Although it is noted that the use of these tools associated with vibe coding can reduce the need for a higher level of knowledge, it should be further acknowledged that this reduced knowledge requirement also limits the ability to further enhance knowledge, as mastery of task understanding is not necessarily required for implementation (Meske et al., 2025). Vibe coding is implemented through user-provided prompts to initialize the generative AI process, with these prompts ranging from vague to perhaps more specialized high-level directives. Although this process can be perceived as a form of externalization through natural language, the result provides additional explicit forms of knowledge in AI-generated formats (Tsai & Lee, 2006).

Nonaka (1994) indicated that the spiral nature of learning knowledge required the ability to scaffold knowledge obtained across multiple experiences over a period of time. Otherwise, obtaining knowledge without the foundational perspective of why or how knowledge should be used can potentially have a negative influence on applying knowledge effectively when required. The organization will need to be aware of the potential risks involved with the use of vibe

coding as its continued use and evolving nature may produce potential knowledge gaps due to loss of knowledge quality and innovation (Meske et al., 2025). Without intentional guidance from the organization in the use of these tools, knowledge workers potentially may develop a sense of disconnect between the use of knowledge and fundamental understanding, leading to the development of deskilling and disinformation (Wagman et al., 2025). This requires organizations to dedicate attention toward knowledge creation within the context of knowledge-intensive processes, provide guidance for workers in the use of generative AI, and support knowledge scaffolding involving explicit knowledge obtained through generative AI methods (Wagman et al., 2025). It is then argued that vibe coding and the use of generative AI-based technologies interrupt the internalization process within KM, as the generative AI tool retains the knowledge, but the user is not fully internalizing the findings.

3.2 Expertise Redistribution

As the use of AI-enabled processes such as vibe coding continues to be deployed within organizational processes, it will be essential for knowledge workers to be adaptive to new upskilling experiences that focus on training experiences. Expertise redistribution is expected due to the continued development of vibe coding, requiring organizations to integrate the process into their existing tasks, practices, and procedures (Hasijsa & Esper, 2022). Vibe coding can create opportunities for novice users to engage with previously unexperienced tasks. As such, vibe coding is not perceived as eliminating the need for tacit knowledge. Vibe coding does not reduce the need for more knowledge workers across the organization, but does require workers to develop the need to redistribute knowledge expertise to include the appropriate handling of these tools. Utilization of vibe coding prompts for generative AI tools will continue to evolve, and therefore, new tacit knowledge will need to be developed to engage with these tools through effective prompting and evaluation. It will be essential to understand the explicit form provided through vibe coding, which requires critical thinking perspectives (Xiao et al., 2022).

Aligning with the SECI model aspect of recombination, vibe coding can lead to more cross-disciplinary knowledge opportunities, combining prior knowledge with new sources of content (Moaniba et al., 2018). As knowledge recombination has been noted as providing positive correlations with organizational innovation (Zhong et al., 2024) when it is used effectively for knowledge creation. Further, expanding the foundation of knowledge workers through training interventions can enhance innovative behavior by connecting the vibe coding techniques into a more capable learning experience for the worker (Han & Zhao, 2026). This further suggests that organizations provide a foundation for the use of vibe coding to understand how it can connect to knowledge creation. As such, providing structured activities for workers to share their understanding of vibe coding findings directly links back to the SECI model and provides opportunities to enhance current knowledge sources and repositories (Cerchione et al., 2024). This would argue that vibe coding processes can be an enabler of the knowledge creation but requires active participation to expand worker experiences. When the rationale behind the use of generative AI-based tools cannot be articulated, documented, or internalized through organizational structures, knowledge governance, and techniques, the process will present flaws in the process.

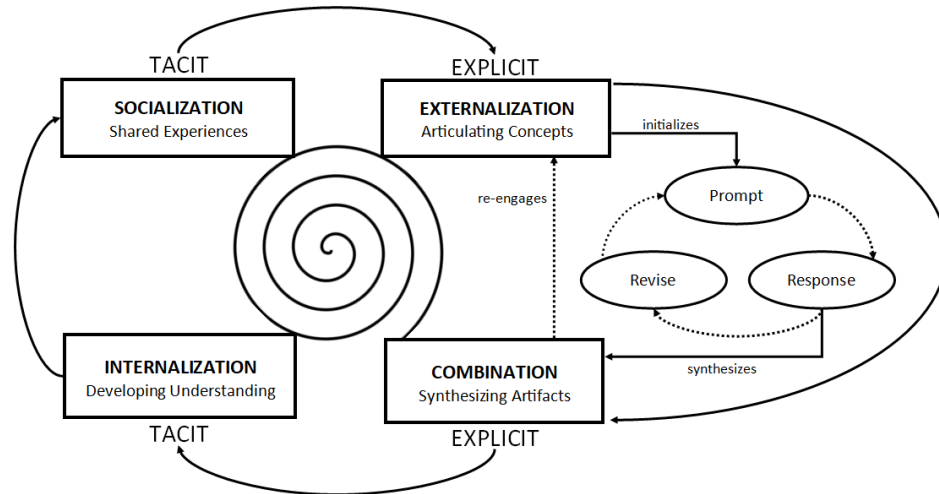
4. Envisioning the SECI and Vibe Coding Model

As noted extensively throughout knowledge management literature, the SECI model (Nonaka, 1991, 1994; I. Nonaka & H Takeuchi, 1995) is perceived as a continual spiral connecting socialization, externalization, combination, and internalization for the transformation of knowledge as discussed in the previous sections. As suggested, the SECI spiral is not a reflection of a continual loop but rather resembles an ascending spiral that allows individuals and organizations to build on their knowledge and organizational understanding. However, with vibe coding, the overall process resembles the SECI model by also suggesting the perspective of a spiral, but the concept perhaps removes the internalization step to further build knowledge. Therefore, the vibe coding aspect forms a micro spiral within the SECI process. This micro spiral includes the initial vibe prompt, which generates output for consideration and utilization. Additional prompts can then be included to either enhance previous prompts or engage the AI application in a new conversation. Therefore, the research can suggest a micro-spiral of vibe coding within the larger SECI spiral of knowledge creation. Although this type of model suggests vibe coding supporting the externalization and combination segments of the SECI model, it does provide the argument for organizations to understand the need for additional opportunities to connect to socialization and internalization areas.

As shown in Figure 2, the traditional SECI model is viewed as a continual spiral allowing for knowledge growth, building upon previously obtained knowledge through socialization, externalization, combination, and internalization. The vibe coding circular process is viewed as a connection point between Externalization and Combination, where the user has the opportunity to input the vibe prompt to allow the AI to provide its response. Then, the user can either continue

to revise the prompt to engage the AI further or utilize the provided response to synthesize artifacts. Moving forward in the SECI spiral, it is expected the Internalization aspect can proceed as the user can utilize the synthesized artifacts toward organizational tasks and processes where needed. However, when appropriate methods are not available or avoided moving from Combination to Internalization, the risk exists for Combination to shift back to Externalization, essentially bypassing the internalization and socialization aspects.

Figure 2. SECI and Vibe Coding Model



It is argued that vibe coding should not be considered as only a part of organizational workflow but as part of the knowledge creation process, building on the SECI model. Socialization can therefore occur as users provide knowledge transfer of prior experiences of AI application use and appropriate vibe prompting. Externalization is where users initiate conversations with the AI and obtain explicit dialogue. The user can refine the vibe prompts to gain further explicit conversations. The AI application has a distinct advantage as it can synthesize explicit knowledge from multiple sources based on the intentional vibe prompt. As each SECI spiral occurs, the internalization is where those explicit artifacts generated through the AI can be reviewed, reflected upon, and applied to appropriate organizational processes, allowing for the knowledge to be carried forward.

5. Implications for Knowledge Management Governance

A critical aspect within knowledge management is the opportunity to maintain explicit documentation supporting knowledge content management; however, within vibe coding, practitioners tend to emphasize speed over knowledge content strategies, leading to inconsistencies in generating findings (Mitchell & Shaaban, 2025). Thus, the use of generative AI can pose challenges to multiple governance issues, including, but not limited to, reliable knowledge sources, quality assurance, and lack of modification opportunities, all impacting organizational knowledge overall (Elgendy et al., 2026). As noted previously, without clear governance policies to guide the use of vibe coding techniques, the organization can potentially lose its ability to develop a clear understanding of why such technologies were used and what new knowledge may be gained. This type of challenge can be referred to as organizational amnesia, which impacts the ability of organizations to maintain or limit their ability to “communicate lessons” across the organizational structure as needed (Sadat & Lin, 2018; Stein, 1995).

As mentioned in previous studies and across multiple extant studies, an organization should work toward supporting the conversion of explicit and tacit knowledge as defined through the SECI model. Vibe coding adoption rates will most likely continue to see growth in the coming years. As such, organizations need to be prepared and adapt to avoid potential erosion of tacit knowledge across their knowledge-intensive work areas. It is important to work toward maintaining knowledge workers as practitioners of knowledge instead of workers relying on generative-AI tools potentially initiating a decline in overall knowledge, skills, and competencies. This aspect would negatively impact the SECI model, where tacit knowledge would traditionally be part of a socialization perspective (I. Nonaka & H. Takeuchi, 1995).

The main themes identified do not necessarily result in an organization completely transitioning its current KM

strategies; however, by failing to acknowledge potential pitfalls of generative AI usage within their knowledge-intensive process, an organization risks not being able to adapt to the use of vibe coding as a new knowledge source. Rather, the organization can examine its current practices to intentionally engage with new technologies that influence KM processes.

Therefore, it would be argued that to avoid competency gaps in knowledge, an organization needs to provide more deliberate practices of knowledge sharing through mentorships, review processes, and other opportunities for experienced workers to partner with others new to the organization. As shown in Table 1, various themes can be identified to help provide some guidance for organizations.

Theme	Description	Key Sources	SECI Model Connection(s)	Practitioner Guidance	Organizational Segments
Knowledge Conversion	Translation between personal and codified knowledge	(Bratianu & Orzea, 2010; Nonaka, 1994; I. Nonaka & H Takeuchi, 1995; Nonaka et al., 2006)	Socialization Internalization	<ul style="list-style-type: none"> Enhancing interpretation through group learning; Evaluating current process for learning to avoid rigid or legacy traditions; Validation techniques of knowledge learning 	Team and organization segments benefit from sustained group learning and sharing.
Expertise Redistribution	Shifts tacit knowledge toward context management and when to override AI outputs; knowledge recombination	(Hasija & Esper, 2022; Moaniba et al., 2018; Xiao et al., 2022)	Externalization Combination	<ul style="list-style-type: none"> Developing new tacit skills toward AI prompt creation, AI evaluation, critical thinking; Institutionalizing knowledge into tasks processes to remove dependency on original source Documenting reflection on findings against prior knowledge 	Individual, team, and organization supported by embedding knowledge into processes and policies.
Tacit Knowledge Atrophy	Sustained use of AI-based tools eroding foundational competencies; decline in knowledge effectiveness	(Berniak-Wozny & Szelagowski, 2022; Han & Zhao, 2026; Levallet & Chan, 2019)	Socialization Combination Internalization	<ul style="list-style-type: none"> Supporting use of mentorships, direct interactions between co-workers; Enhancing socialization methods; Integrating shared understanding 	Team and organization segments enhanced through intentional integration.
Organizational Memory Loss	AI-generated responses retained without rationale being understood; poor documentation; knowledge applied but forgotten	(Erben & Dogantemur, 2019; Kransdorff, 1998; Unger et al., 2015)	Internalization	<ul style="list-style-type: none"> Formally capturing AI-generated findings; Diffused to functional areas where needed; Interpreting findings through individual and group learning; Routine audits of documentation 	Organization develops governance on retaining artifacts for application.

Table 1. Main themes toward organizational guidance

As provided in Table 1, the four main themes can also be associated with the four main quadrants of the SECI model. Socialization is required to obtain appropriate knowledge transfer; externalization is impacted through expertise redistribution; combination is affected if the organization identifies tacit knowledge atrophy; and internalization is negatively impacted when organization memory loss is experienced. The practitioner guidance can provide opportunities for the organization to ensure a negative impact on the SECI model is reduced. Although this guidance may suggest renovations toward individual preparedness and allowance for developing tacit knowledge, the guidance provides perspectives toward benefiting both the group (or teams) and overall organization structures. For the team and organization structure, establishing a common “intentionality” (Philipson & Kjellström, 2020) presents a shared understanding within business tasks. Whereas individuals may develop personal preferences toward the use of their own tacit knowledge and can support team activities, the team itself needs to establish its common objective. As such, teams

can then provide opportunities to expand the organization's externalized knowledge.

Further, with enhancements of organizational policies and guidance, opportunities exist to continue the development of user trust and perception of legitimacy of vibe coding within AI applications. This provides the means to reduce any ambiguity that may arise, along with reducing potential auditability gaps. However, this also requires organizations to undertake AI literacy standards designed to develop skills. Reducing auditability gaps indicates the need for more governance of audit trail mandates and vibe coding tracking to ensure documentation is provided and available to individuals as needed for task completion. With organizational dynamics shifting toward vibe coding and AI-based applications, AI-use policies and frameworks should also be designed to provide appropriate oversight. It should also be recognized that differences in organizational structures, such as organizational age, size, and complexity of tasks, will also serve as moderators for these guidance areas. Regardless of the organizational differences, providing opportunities for feedback can help revise governance of these initiatives from a linear perspective to a more reflective and adaptive environment for organizational change.

6. Conclusions

The main objective of this paper is to provide a conceptual foundation for further studies into the connections between vibe coding (or generative AI-based) tools and the overarching perspective of knowledge management. The limitation of this paper is the lack of direct case study research; however, findings of the extant articles and resources provide empirical evidence to support the need for organizations to understand how these new technological tools are being implemented within their knowledge-intensive tasks and processes. It is acknowledged that future studies would be required to assess the impact generative AI has had on KM processes. Future research recommendations would include three main categories. First, specifically understanding how the organization includes these tools within their current work processes through provided support, or whether individuals are utilizing the tools without organizational guidance or training. Second, understanding how the organization or individuals incorporate the AI-provided content directly into existing organizational documentation or determine the nature of the intent behind its utilization, if not to enhance organizational tasks and processes. Third, do individuals discuss the AI-provided content with others to share experiences and knowledge with the intent of improving additional utilization, or if not, explore the perception of why individuals are not sharing? These main areas for consideration would then relate to the SECI areas to explore justification for individuals initiating vibe coding (externalization to combination), applying obtained content to organizational tasks (combination to internalization), and sharing of obtained content with others (socialization).

With vibe coding seemingly influencing the externalization step of KM, additional studies are recommended to continue exploring these gaps on how to progress the externalized knowledge toward internalization growth. The findings also indicate the need for an organization to develop policies and governance methods to support continuing development in knowledge creation. Although the use of vibe coding methods does not generally require extensive knowledge, it can disrupt the knowledge conversion process between externalization and internalization, thus limiting the ability of knowledge workers to appropriately develop and apply new knowledge.

The more immediate practical implication suggests organizations develop structured experiences to support peer-sharing, problem-solving, and overall reflection on explicit knowledge obtained through vibe coding. Vibe coding can be viewed as another source of knowledge and therefore can add itself into an already diverse pool of external sources. However, workers will need support and a foundation of knowledge in the context area to fully comprehend and interpret the findings provided through vibe coding. As vibe coding continues to evolve, organizations will also need to adjust their learning activities and evaluations to allow workers to ideally strengthen their current knowledge base and role in task completion.

7. References

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