

AI Copilots and Knowledge Creation in Maritime Fishing Operations

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Abstract: Artificial intelligence (AI) is increasingly transforming knowledge work and decision-making in organizations. In operational settings characterized by uncertainty and distributed expertise, practitioners must interpret multiple information sources, coordinate across roles and develop situational understanding before taking action. While existing research has examined AI in relation to automation, productivity and decision support, less attention has been given to how AI-enabled systems may contribute to organizational knowledge creation. This study explores how AI-enabled Copilot systems may support organizational knowledge creation, based on practitioner perspectives from the Fisk 4.0 research project in Norway. Fisk 4.0 is a six-year industry–academia collaboration focused on digitalization and automation in the deep-sea fishing fleet. The study adopts an interpretive case-based approach drawing on industry–academia workshops, semi-structured interviews and project documentation. Maritime fishing operations require captains, factory managers and fleet managers to interpret environmental conditions, fish distribution, onboard production capacity, regulatory constraints, fuel consumption and market demand. These interdependent factors create knowledge challenges that require continuous interpretation, coordination and learning across roles. The study does not examine an implemented AI system, but develops a conceptual understanding grounded in practitioner reflections on current challenges and potential digital decision-support solutions. Building on organizational knowledge creation theory, the paper develops a conceptual model illustrating how AI-enabled Copilot systems may support knowledge creation in this setting. The model positions the Copilot as a digital platform that may support forms of systemising and exercising Ba, while also acting as a knowledge co-worker that provides analytical input to human decision-makers. The analysis suggests that Copilot systems may help integrate distributed data, make operational patterns more visible and support shared situational understanding among practitioners. The study contributes to knowledge management research by refining how AI-enabled systems can be understood in relation to SECI processes, Ba and human–AI collaboration in knowledge-intensive operational work. It also offers a basis for future pilot studies of Copilot use in maritime operations.

Keywords: Artificial intelligence, Knowledge management, Organizational knowledge creation, Human–AI collaboration, Copilot systems, Operational decision-making

1. Introduction

Knowledge management research has long emphasized that effective organizational action depends on the interaction between tacit knowledge, experience and explicit information (Nonaka 1994; Nonaka and Takeuchi 1995). Organizational knowledge is created when individuals interpret situational cues, exchange perspectives and develop shared understanding that guides action. However, most research on organizational knowledge creation has focused on human interaction, while the role of AI-enabled systems in such processes remains less developed.

At the same time, research on AI in organizations has mainly examined automation, decision support and productivity improvements (Raisch and Krakowski 2021). Less attention has been given to how AI-enabled systems may contribute to organizational knowledge creation in dynamic operational settings, where practitioners must combine experience-based judgement with time-sensitive data from environmental, production and market sources.

This paper explores these issues in maritime fishing operations, drawing on practitioner perspectives from the Fisk 4.0 project. Deep-sea fishing vessels provide a relevant setting because captains, factory managers and fleet managers must coordinate decisions involving fishing conditions, onboard production capacity, regulatory constraints, fuel use and market information. The Fisk 4.0 project is a six-year industry–academia collaboration in Norway exploring digitalization and automation in the deep-sea fishing fleet.

The study does not examine an implemented AI system. Instead, it develops a conceptual understanding grounded in practitioner perspectives from workshops, interviews and project discussions. Based on this material, the paper proposes a contextualized conceptual model of how AI-enabled Copilot systems may support organizational knowledge creation in maritime fishing operations. In the model, Copilot systems are

conceptualized as potential knowledge co-workers that provide analytical input to human interpretation and as digital platforms that may support forms of *Systemising* and *Exercising Ba*.

The paper contributes to knowledge management and AI research by refining how AI-enabled systems can be understood in relation to organizational knowledge creation in operational work. By focusing on maritime fishing operations, the study highlights how Copilot systems may augment human interpretation, support coordination across roles and contribute to knowledge creation in settings where decisions must be made under changing conditions.

The remainder of the paper is structured as follows. Section 2 describes the maritime fishing context. Section 3 presents the theoretical background. Section 4 outlines the methodology. Section 5 introduces the conceptual model. Section 6 presents findings. Section 7 discusses the implications, followed by theoretical contributions, limitations and conclusions.

2. Operational Context: Knowledge Challenges in Maritime Fishing Operations

Maritime fishing operations involve decision-making under uncertainty. In wild capture fisheries, vessels cannot rely on predictable raw material flows. Fish must be located, caught, processed and delivered under conditions shaped by weather, fish migration, quota regulations, fuel use and market demand.

A central challenge is that key information changes during the operation. Fish distribution may shift, weather conditions may deteriorate, market prices may fluctuate and catch composition may differ from expectations. Captains therefore rely heavily on experience when deciding where to search for fish, how long to continue fishing in a particular area and whether the expected catch justifies fuel consumption and other operating costs.

These decisions are closely connected to onboard production. Modern deep-sea fishing vessels are not only harvesting platforms but also mobile production systems where raw material is processed into marketable products. Factory managers must consider production capacity, machine availability, product quality, freezer capacity and crew workload. A fishing strategy that appears attractive from the bridge may create problems in the onboard factory if the catch cannot be processed efficiently or if the product form does not match market demand.

Decision-making also extends beyond the vessel. Fleet managers must consider quotas, vessel performance, market opportunities and coordination across the fleet. They may need to balance economic performance with practical and human considerations, including crew wellbeing and the operational preferences of captains and factory managers.

The knowledge challenge is therefore not simply that more data are needed. Vessels already generate data from navigation systems, sensors, production monitoring systems and market information sources. The more difficult problem is that relevant knowledge is distributed across people, systems and roles. Captains, factory managers and fleet managers each hold different pieces of the operational picture, and decisions depend on combining experience-based judgement with available data at the right time.

This context provides a relevant setting for examining AI-enabled Copilot systems from a knowledge management perspective. Before such systems can be understood as technical solutions, it is necessary to understand the knowledge work they are expected to support: interpreting changing conditions, coordinating distributed expertise and developing shared understanding for action.

3. Theoretical Background

3.1 Organizational Knowledge Creation

Organizational knowledge creation theory explains how knowledge emerges through interaction between tacit and explicit knowledge (Nonaka 1994; Nonaka and Takeuchi 1995). Tacit knowledge is rooted in experience, practice and judgement, while explicit knowledge can be articulated through language, documents, data and formal representations. Knowledge creation occurs when these forms of knowledge interact and are transformed through social and organizational processes.

The SECI model describes four modes of knowledge conversion: socialization, externalization, combination and internalization (Nonaka, Toyama and Konno 2000). Socialization involves sharing tacit knowledge through experience and interaction. Externalization refers to articulating tacit insights into explicit concepts. Combination involves integrating explicit knowledge, while internalization occurs when individuals absorb explicit knowledge and transform it into tacit understanding through action and practice.

Nonaka and Takeuchi (1995) also describe organizational knowledge creation as a process involving sharing tacit knowledge, concept creation, concept justification, building archetypes and cross-leveling knowledge across organizational contexts. These stages are relevant not only in innovation and product development, but also in operational work, where practitioners interpret changing conditions, combine experience with available information and develop shared understanding that guides action.

3.2 Ba and Knowledge Assets

A central concept in organizational knowledge creation theory is *Ba*, understood as the shared context in which knowledge creation takes place (Nonaka and Takeuchi 1998; Nonaka, Toyama and Konno 2000). *Ba* may be physical, social, virtual or mental, but its core function is to provide a context where actors interact, exchange perspectives and develop knowledge.

Nonaka, Toyama and Konno (2000) distinguish between different forms of *Ba* associated with the knowledge creation process. In this study, two forms are particularly relevant. *Systemising Ba* refers to virtual and collective contexts where explicit knowledge is integrated, shared and systematized. *Exercising Ba* refers to individual and virtual contexts where explicit knowledge is internalised through action and experience. These concepts are useful for analysing how digital platforms may support the integration, interpretation and application of explicit knowledge without replacing human interaction.

Knowledge assets are another important element in the framework. Nonaka, Toyama and Konno (2000) describe knowledge assets as resources that serve as inputs and outputs of knowledge creation processes, including experiential, conceptual, systemic and routine knowledge assets. In operational work, such assets may include practitioner experience, routines, vessel and production data, market information and decision-relevant knowledge. Their value depends not only on availability, but on how they are interpreted and used in specific situations.

3.3 Artificial Intelligence in Knowledge Work

Recent advances in AI have introduced new possibilities for supporting knowledge work. Rather than replacing human expertise, many AI systems are understood as augmentation technologies that provide analytical input, identify patterns and help practitioners interpret large volumes of information (Raisch and Krakowski 2021).

Research on generative AI and Copilot systems suggests that such technologies may assist knowledge workers by synthesizing information, generating alternatives and supporting interpretation (Brynjolfsson, Li and Raymond 2025; Davenport and Miller 2022). From a knowledge management perspective, this raises questions about how AI-enabled systems relate to knowledge creation processes traditionally understood as human and social. AI systems do not possess tacit knowledge in the human sense, nor do they replace human judgement. However, they may provide analytical input that practitioners interpret, question, adapt or reject.

3.4 Research Gap

Existing knowledge creation theory provides strong concepts for understanding the interaction between tacit and explicit knowledge, while AI research highlights how digital systems may augment knowledge work. However, the relationship between AI-enabled systems and organizational knowledge creation remains underdeveloped, especially in operational settings where practitioners must combine experience-based judgement with time-sensitive data. Building on SECI, *Ba* and research on AI in knowledge work, this study develops a conceptual model of how AI-enabled Copilot systems may support knowledge creation in maritime fishing operations.

4. Methodology

4.1 Research Design

This study adopts an interpretive case-based approach to explore how AI-enabled Copilot systems may support organizational knowledge creation in maritime fishing operations. Interpretive research is suitable for studying emerging socio-technical phenomena where meanings, expectations and practices are still developing (Walsham 1995). Rather than testing predefined hypotheses, the aim is to develop conceptual understanding grounded in practitioner perspectives.

The study does not examine an implemented AI system. Instead, it draws on practitioner reflections from the Fisk 4.0 project to understand current knowledge challenges in the deep-sea fishing fleet and to develop a conceptual model of how AI-enabled Copilot systems may support knowledge creation. Case study research is

appropriate for examining contemporary phenomena in real-life contexts, particularly where boundaries between technology, organization and practice are not clearly defined (Yin 2018).

The empirical context is the Fisk 4.0 project, a six-year industry–academia collaboration focused on digitalization and automation in the Norwegian deep-sea fishing fleet. The project involves research institutions and industry partners across the maritime value chain, including vessel operators and technology suppliers.

4.2 Empirical Material

The empirical material consists of practitioner perspectives gathered through eleven industry–academia workshops, four semi-structured interviews and project documentation from the Fisk 4.0 project. The material relates to decision-making, onboard production and digital decision support in fishing operations.

The eleven workshops brought together participants such as captains, factory managers, fleet managers, technology developers and researchers. They focused on operational challenges, information use, onboard factory constraints and potential digital solutions. The workshops represent the primary source of material because they captured collective discussions and sensemaking among practitioners.

The four interviews provided more detailed individual perspectives on decision-making, information systems, onboard production and digital decision-support opportunities. They also served as a validation and refinement step. Participants confirmed that the knowledge challenges identified through the workshops reflected relevant operational needs in the fishing fleet.

Based on these discussions, the Fisk 4.0 project has moved toward planning a pilot implementation of a Copilot solution on board one fishing vessel. This planned pilot is not analysed in the present paper, but represents an important next step for examining the conceptual model in operational use.

The study also draws on project documentation, including workshop notes, project reports and operational descriptions provided by participating vessel operators. Using several sources of material enabled triangulation and strengthened the credibility of the interpretation (Yin 2018).

4.3 Data Analysis and Research Quality

The material was analysed using an interpretive thematic approach. The analysis focused on how practitioners described decision-making challenges, information use and the potential role of digital systems in maritime fishing operations.

The analysis proceeded in four stages. First, workshop notes, interview material and project documents were reviewed to identify recurring issues. Second, initial codes were developed around topics such as changing operational conditions, production constraints, role coordination, data fragmentation and experience-based judgement. Third, these codes were grouped into three central themes: interpreting operational signals, coordinating knowledge across roles and integrating distributed data sources. Fourth, the themes were interpreted through organizational knowledge creation theory, particularly SECI, *Ba* and knowledge assets.

The study aims for analytical rather than statistical generalization. Research quality was supported by multiple sources of material, long-term collaboration within Fisk 4.0 and the use of established knowledge management concepts as interpretive lenses. The material reflects practitioner perspectives and collective reflections rather than direct observation of an implemented AI system, which is addressed further in the limitations section.

5. Conceptual Model

Building on practitioner perspectives from Fisk 4.0 and organizational knowledge creation theory, this study develops a contextualized conceptual model illustrating how AI-enabled Copilot systems may support knowledge creation in maritime fishing operations. The model is not based on an implemented AI system, but represents a theoretically informed interpretation of how such systems may address knowledge challenges identified through workshops, interviews and project documentation. Although grounded in maritime fishing operations, its core mechanisms may be relevant to other operational settings where distributed actors combine experience-based judgement with data.

Figure 1 illustrates the proposed model. At the centre is the AI-enabled Copilot platform, which may support data integration, pattern detection and analytical input. The platform is connected to distributed knowledge assets, including practitioner experience, routines and procedures, vessel and production data, and market and quota information. These assets do not create value simply by being available; their value depends on how they are interpreted, combined and applied in specific situations.

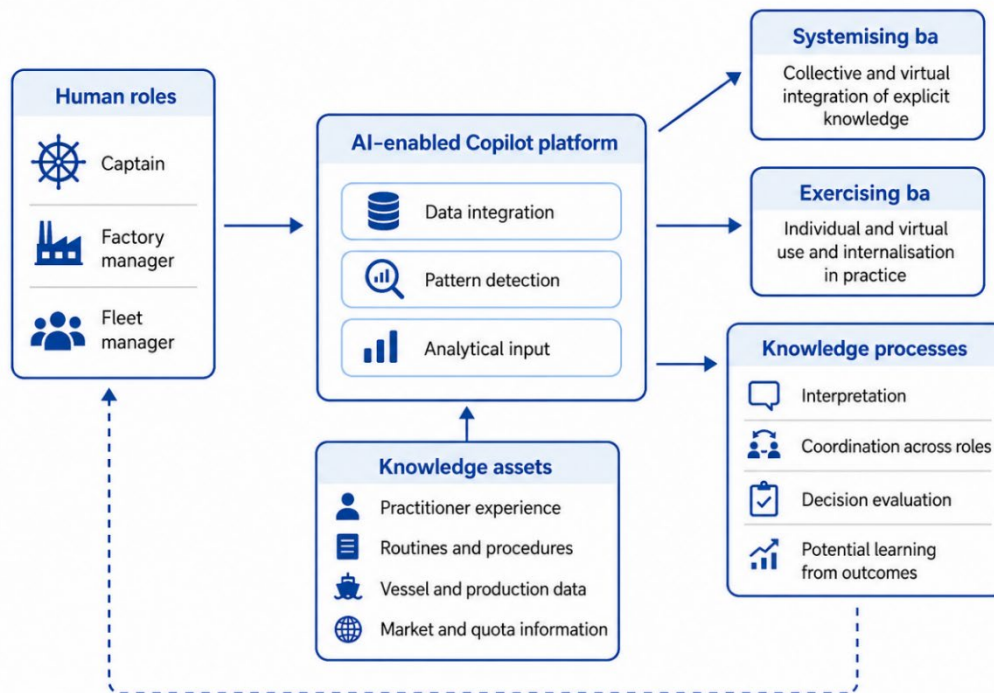


Figure 1: Conceptual model of AI-enabled Copilot support for knowledge creation in maritime fishing operations (AI-assisted visualization based on authors' conceptual design)

The model emphasizes the role of human actors. Captains, factory managers and fleet managers contribute tacit knowledge developed through experience, mental models and judgement. The Copilot platform may provide analytical input, but this input must be interpreted, questioned, adapted or rejected by practitioners. In this sense, the Copilot is conceptualized as a potential knowledge co-worker: not as an autonomous decision-maker, but as a digital platform that may augment human interpretation.

The model further suggests that the Copilot platform may support forms of *Systemising Ba* and *Exercising Ba*. It may support *Systemising Ba* by integrating and presenting explicit knowledge from different sources. It may support *Exercising Ba* when practitioners use analytical outputs in decision-making and internalise insights through action and experience.

Finally, the model links these interactions to operational knowledge processes, including interpretation, coordination across roles, decision evaluation and potential learning from outcomes. It therefore positions AI-enabled Copilot systems as digital platforms that may support knowledge creation by connecting human tacit knowledge, distributed knowledge assets and analytical input in maritime fishing operations

6. Findings

The empirical material provides insight into how practitioners understand decision-making in maritime fishing operations. Across workshops and interviews, participants described decision-making as shaped by changing conditions, distributed knowledge and the need to coordinate perspectives across roles. The analysis resulted in four themes: interpreting operational signals, coordinating role-based perspectives, integrating distributed data and learning through experience.

6.1 Interpreting Heterogeneous Operational Signals

Participants described decision-making as involving signals from several domains, including weather, fish distribution, onboard production capacity, quota regulations, fuel consumption and market conditions. These factors were not treated as separate issues, but as interdependent elements that had to be interpreted together. As one participant noted: "You always have many signals at the same time — weather, fish location, factory capacity, quotas and fuel consumption. The challenge is understanding how these signals fit together".

This illustrates that decision-making depends on interpretation rather than simple access to information. Captains emphasized experience-based judgement when deciding where to search for fish and whether continued fishing was economically justified. Factory managers focused on production capacity, machine status and whether the onboard factory could handle the expected catch.

6.2 Coordinating Operational Roles and Perspectives

Participants emphasized that operational decisions require coordination between actors with different responsibilities. Captains, factory managers and fleet managers each interpret the situation from their own position, but decisions must be aligned across these roles. As one participant explained: “The captain may want to continue fishing in an area, but the factory may already be close to capacity. Then we have to discuss how to balance the fishing strategy with production capacity”.

These discussions show that knowledge is distributed across roles and must be brought together through communication and shared interpretation. Participants also emphasized that human and crew-related considerations influence decisions. Production choices may therefore be shaped not only by economic calculations, but also by crew workload, safety and practical conditions on board.

6.3 Integrating Distributed Data

A third theme concerns the difficulty of integrating data from different systems and sources. Participants described increasing access to vessel data, production information and market information, but noted that these sources are not always combined in a way that supports decision-making. One participant summarized this challenge as follows: “There is a lot of data available, but it is not always easy to see the whole picture”. Several participants expressed a need for tools that could make relevant information easier to combine and interpret: “A system that could combine these signals and show possible options would be very useful”.

These statements should be understood as expressed needs and expectations rather than evidence of an existing AI system in use. They indicate that practitioners see value in digital support for integrating distributed information, but that such support remains under development.

6.4 Learning Through Experience

Participants described learning as closely tied to operational experience. Decisions are evaluated through outcomes such as catch volume, production flow, product quality, fuel use and market response. Over time, these experiences contribute to tacit judgement. As one participant said: “You learn from what worked and what didn’t”.

This suggests that learning in maritime fishing operations is largely practice-based. Participants also indicated that future digital systems could support learning by capturing outcomes and making previous decisions easier to evaluate. However, such learning effects remain potential rather than demonstrated in the present study.

Taken together, the findings indicate that decision-making depends on interpreting changing operational signals, coordinating distributed expertise, integrating data from multiple sources and learning from experience. These findings provide the basis for discussing how AI-enabled Copilot systems may support knowledge creation in this setting.

7. Discussion

This study explored how AI-enabled Copilot systems may support organizational knowledge creation in maritime fishing operations. The findings show that decision-making involves interpreting operational signals, coordinating role-based knowledge, integrating distributed data and learning from experience. These findings are interpreted below through organizational knowledge creation theory and AI research.

7.1 Operational Decision-making as Knowledge Creation

The findings suggest that decision-making in maritime fishing operations can be understood as a knowledge creation process. Practitioners do not simply apply available information to predefined decisions. Rather, they interpret changing conditions, combine experience with data and develop situational understanding that guides action. This reflects the interaction between tacit and explicit knowledge described in organizational knowledge creation theory.

Captains, factory managers and fleet managers each contribute different forms of knowledge. Knowledge creation occurs when these perspectives are brought together and interpreted in relation to the operational

situation. This extends the relevance of SECI beyond innovation and product development by showing how knowledge creation is embedded in ongoing operational work.

7.2 Copilot Systems and Systemising Ba

The findings highlight the difficulty of integrating data from multiple sources. Practitioners described access to vessel data, production information and market information, but emphasized that these data are not always combined into a usable overview. This creates a challenge for the combination of explicit knowledge.

From the perspective of *Ba*, an AI-enabled Copilot platform may support *Systemising Ba* by creating a virtual and collective context where explicit knowledge can be integrated, structured and shared. Such a platform may combine data from vessel systems, onboard production, quotas and market sources, making relevant information more accessible across roles. This does not mean that the platform itself is equivalent to *Ba* in the full philosophical sense. Rather, it may support specific conditions associated with *Systemising Ba*.

7.3 Exercising Ba and Human Interpretation

The model also suggests that Copilot systems may support *Exercising Ba* when practitioners use analytical outputs in decision-making and internalise insights through action and experience. However, this process should not be understood as direct adoption of AI-generated suggestions.

Practitioners remain responsible for evaluating whether analytical outputs are relevant. A captain may reject a suggestion if it conflicts with experience of fishing conditions. A factory manager may adapt an insight based on machine limitations or crew workload. A fleet manager may interpret recommendations in relation to quotas, market timing or coordination across vessels. AI-generated insights become useful only when they are interpreted, questioned, adapted or rejected by practitioners.

7.4 AI Copilot as Knowledge Co-worker

The findings support the conceptualization of the AI Copilot as a potential knowledge co-worker in a limited and carefully defined sense. The Copilot does not possess tacit knowledge, make autonomous operational decisions or replace human expertise. Instead, it may provide analytical input that helps practitioners compare alternatives, identify patterns and reflect on operational choices.

This interpretation aligns with the view of AI as an augmentation technology. In maritime fishing operations, the value of a Copilot system lies not in automating decisions, but in strengthening the interaction between human experience and available data. The Copilot may therefore contribute to knowledge work by making alternative interpretations more visible and supporting coordination across roles.

7.5 Learning and Future Operational Use

The findings show that learning is largely experience-based. Practitioners learn by evaluating outcomes such as catch volume, production flow, fuel use and market response. A Copilot system may support this learning by helping capture outcomes and connect them to previous decisions. However, because the system has not yet been implemented, such learning effects remain potential.

The planned pilot implementation in Fisk 4.0 provides an important opportunity to examine these processes in practice. Future research can investigate how practitioners interact with Copilot-generated insights, how these insights influence coordination across roles and whether the system contributes to learning over time.

Overall, knowledge creation emerges not from AI alone, but from the interaction between human experience, digital platforms and operational practice.

8. Theoretical Contributions

This study contributes to knowledge management and AI research by developing a practitioner-informed conceptual model of how AI-enabled Copilot systems may support organizational knowledge creation in maritime fishing operations.

First, the study extends organizational knowledge creation theory into a dynamic operational setting. While SECI and *Ba* have often been applied in studies of innovation, product development and organizational learning, this study shows how knowledge creation can also be understood as part of everyday operational decision-making. In maritime fishing operations, practitioners combine experience-based judgement with changing information about fishing conditions, onboard production, quotas, fuel use and markets.

Second, the study refines the application of *Ba* by showing how AI-enabled Copilot platforms may support specific knowledge creation contexts. The model suggests that Copilot systems may support *Systemising Ba* by integrating and presenting explicit knowledge from different sources, and *Exercising Ba* when practitioners use analytical outputs in decision-making and internalise insights through experience.

Third, the study contributes to research on AI in knowledge work by conceptualizing AI-enabled Copilot systems as potential knowledge co-workers. This concept does not imply that AI possesses tacit knowledge or replaces human judgement. Rather, it highlights how AI may provide analytical input that practitioners interpret, question, adapt or reject.

Fourth, the study highlights the role of distributed knowledge assets in operational decision-making. Practitioner experience, routines, vessel data, production information, quota constraints and market signals become valuable when they are interpreted and combined in context.

Finally, although the model is contextualized to the deep-sea fishing fleet, its core mechanisms may be relevant to other domains where actors coordinate expertise, interpret changing information and make decisions under uncertainty, such as offshore energy operations, maritime logistics, emergency response and advanced manufacturing.

9. Limitations and Future Research

This study has several limitations. First, it is based on practitioner perspectives gathered through workshops, interviews and project documentation within Fisk 4.0. The material provides valuable insight into knowledge challenges in the deep-sea fishing fleet, but it does not include direct observation of an implemented AI Copilot system. The conceptual model should therefore be understood as practitioner-informed and theoretically grounded, rather than as an evaluation of deployed technology.

Second, the study is contextualized to maritime fishing operations in Norway. The value of the study lies in analytical generalization: identifying knowledge mechanisms that may be relevant in other domains where actors coordinate distributed expertise, interpret changing information and make decisions under time pressure.

Third, the empirical material includes eleven workshops and four interviews. While the workshops provided rich collective reflections, individual practitioner perspectives could be further explored in future studies. Additional interviews, observations and longitudinal data would strengthen understanding of how knowledge creation processes unfold in practice.

A planned pilot implementation of a Copilot solution on board one fishing vessel provides an important opportunity for future research. Such a study could examine how practitioners interact with AI-generated insights, how Copilot systems influence coordination between captains, factory managers and fleet managers, and whether such systems support learning from operational outcomes over time. Future research could also examine whether similar dynamics apply in offshore energy operations, maritime logistics, emergency response and advanced manufacturing.

10. Conclusion

This study explored how AI-enabled Copilot systems may support organizational knowledge creation in maritime fishing operations. Drawing on practitioner perspectives from Fisk 4.0, the paper showed that decision-making in the deep-sea fishing fleet involves interpreting changing operational signals, coordinating role-based expertise and learning from experience.

Building on organizational knowledge creation theory, the study developed a contextualized conceptual model in which Copilot systems are understood as digital platforms that may integrate distributed knowledge assets, provide analytical input and support forms of *Systemising Ba* and *Exercising Ba*. The study also conceptualizes Copilot systems as potential knowledge co-workers that augment, rather than replace, human judgement.

The paper contributes by refining how AI-enabled systems can be understood in relation to SECI processes, *Ba* and knowledge assets in operational work. Future research should examine the planned Copilot pilot on board a fishing vessel to investigate how these knowledge processes unfold in operational use.

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Ethics Declaration: The research presented in this paper did not involve personal or sensitive data requiring formal ethical approval. The empirical material consists of workshops, interviews and project documentation related to professional practices within the Fisk 4.0 project.

AI Declaration: AI-based language tools, including OpenAI's ChatGPT, were used as writing assistants to support drafting and improving the clarity of the manuscript. All conceptual development, empirical interpretation and conclusions presented in this article are the responsibility of the authors.

References

- Brynjolfsson, E., Li, D. and Raymond, L. (2025) Generative AI at work, *The Quarterly Journal of Economics*, 140(2), pp. 889–942.
- Davenport, T. H. and Miller, S. M. (2022) *Working with AI: Real stories of human-machine collaboration*. MIT Press.
- Nonaka, I. (1994) A dynamic theory of organizational knowledge creation, *Organization science : a journal of the Institute of Management Sciences*, 5(1), pp. 14–37.
- Nonaka, I. and Takeuchi, H. (1995) *The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation*. Oxford University Press.
- Nonaka, I. and Takeuchi, H. (1998) A theory of the firm's knowledge-creation dynamics, *The Dynamic Firm, The Role of Technology, Strategy, Organization, and Regions*, 27.
- Nonaka, I., Toyama, R. and Konno, N. (2000) SECI, Ba and leadership: a unified model of dynamic knowledge creation, *Long range planning*, 33(1), pp. 5–34.
- Raisch, S. and Krakowski, S. (2021) Artificial intelligence and management: The automation–augmentation paradox, *Academy of management review*, 46(1), pp. 192–210.
- Walsham, G. (1995) Interpretive case studies in IS research: nature and method, *European Journal of information systems*, 4(2), pp. 74–81.
- Yin, R. K. (2018) *Case study research and applications*. Sage Thousand Oaks, CA.