ISSN 2319 – 7595

Volume 13, No.1, January – February 2024

International Journal of Information Systems and Computer Sciences

Available Online at http://warse.org/IJISCS/static/pdf/file/ijiscs011312024.pdf

https://doi.org/10.30534/ijiscs/2024/011312024

The Role of Artificial Intelligence in Managing Knowledge in a Data Mining Environment through Knowledge Reusability

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Received Date : December 29, 2023 Accepted Date : January 27, 2024 Published Date : February 07, 2024

ABSTRACT

Current research attempts to demonstrate the prospects of Artificial Intelligence (AI) for knowledge management and the resulting systems in a three-dimensional environment. We analytically examine underlying characteristics of knowledge management, such as knowledge sharing, application, and storage, in the context of tacit and explicit knowledge in a data mining environment. The crucial role of tact and explicit knowledge and its reusability, especially in a data mining environment, has been considered in present studies.

It is believed that there is a need to develop a professional model incorporating Artificial Intelligence (AI) to benefit from knowledge management in companies, especially about tacit and explicit knowledge, and its reusability. The likely role of AI applications during various knowledge management processes and the benefits of AI for knowledge management systems that leverage tacit and explicit knowledge and knowledge reusability were highlighted.

Key words: Artificial Intelligence, Tacit Knowledge, explicit Knowledge, Knowledge Management, Knowledge Reusability

1. INTRODUCTION

Various researchers [1] suggested the role of artificial intelligence in supporting knowledge management. Considering its structure, enterprise knowledge management improves the delivery of various product-related services through the generation, collection, recovery, sharing, and utilization of knowledge. Such procedures are required for a company to identify, demonstrate, and acquire essential skills to maintain its superiority in the driven economy in the knowledge environment [2].

The financial development in the current century underlines the importance of knowledge management and, thus the recognition of knowledge in the broad spectrum of knowledge

stocks. There is international recognition of the importance of knowledge and its re-use in the developing economy [3]. Today, techniques such as artificial intelligence and machine learning have become core business tools [4] [5].

Tacit vs. explicit knowledge:

The difference between tacit and explicit knowledge is not a new idea. In 1949, Jashapara [32] defined an obvious distinction between "knowing what" (explicit knowledge) and "knowing how" (tacit knowledge). Soon in 1966, Polanyi [33] realized that knowledge is a pursuit that is best explained as a knowledge activity. This clarity means a primitive effort to claim that tacit knowledge is a process like dynamic and cognitive activity.

2 LITERATURE REVIEW

2.1Knowledge Management Processes and AI

An AI-based knowledge management system typically supports the development of externalization, socialization, combination, and internalization. In Nonaka's time [6-8], artificial intelligence was not explored in the context of knowledge management, and what is more interesting is that knowledge transfer (from tacit to explicit and vice versa) is already present in the well-known Nonaka knowledge management model [6-8] who have supported that tacit is a verbal knowledge while explicit knowledge is the documented knowledge.

Now at this stage, it is required to discuss knowledge building or creation, knowledge sharing, knowledge storage and its applications, and its appropriate use involving tacit, and explicit knowledge with the applications of artificial intelligence. AI's support for organizations in managing their knowledge has been studied extensively by Kotas et al. [9]. Their main applications of AI for knowledge management are expert systems of intelligent agents and artificial neural networks.

In general, the creation of knowledge occurs as the development of thoughts and corresponding resolutions. However, it is more correlated with the reconfiguration and recombination of prior knowledge about the environment [10]). According to Hossein et al., [10] there is a lack of literature that discusses the separate unit of tacit and explicit knowledge in the AI environment. They further added that there are intelligent agents, that could aid in the investigation and recovery of knowledge leading to the fusion and innovation of novel Knowledge.

Wikis can extract knowledge from large numbers of people and make tacit, suppressed content explicit and widely accessible. It's very popular and very widely used on Wikipedia. This is a great example. Wikis have extensive properties for knowledge management needs, e.g., they can record, connect, and link people. Wiki can share explicit knowledge with a large number of people.

2.2 Knowledge Reuse

A crucial task is to convert tacit knowledge into explicit knowledge and reuse it recurrently, thus improving the novel working purpose of knowledge for its management as it helps to explicitly see the manageable broad spectrum of knowledge in a coordinated and rational manner.

Newell [11] and Musen [12] provided their explanation of knowledge reuse and knowledge transmission based on an exclusive study of what knowledge is [11] [12] since knowledge is what an observer expresses one transmitted by an intelligent intermediary and that could be a human or a machine, which allows the observer to recognize the agent's activities as clear, i.e. behavior that allows the mediator to recognize his apparent intentions.

2.3 Knowledge Construction

The knowledge management processes involve the collection of data, the formation of knowledge, and the dissemination of previously built-up and recorded knowledge within a company. It should be noted that AI enables the innovation of a system in which all the company's knowledge is collected. It is therefore clear that there is a connection between AI and company knowledge. Machine learning and business intelligence should be linked for concluding business operations that are crucial for creating novel knowledge [13].

2.4 Knowledge Recovery or Storage

The use of AI in knowledge management is obvious because it increases storage space and explicitly restores or retrieves knowledge. The quality of AI lies in the fact that its deep learning property fundamentally correlates with big data [14]. Such types of relationships or algorithms offer new possibilities for the collection and recovery of produced big data in organizations.

Knowledge repositories are implemented, where extracted knowledge is converted into explicit knowledge and stored or preserved for later use [11]. This knowledge is stored in the organization's memory, where newly created knowledge is kept.

2.5 Knowledge Sharing

Knowledge sharing is a crucial act of knowledge source without which an organization cannot sustain itself over a long period. For this we need, at first glance, cooperation with many knowledge workers and thus the need for collaborative intelligence. In an organization, employees can have distributed storage using AI, facilitating the communication process like Yammer [15] between them. Yammer is based on the idea of creating a digital community stage for commercial customers, through which company knowledge and projects can be shared as early as the planning phase.

2.6 Knowledge Application

Knowledge application reveals the updated judgments and strategies of activities aimed at advancing circumstances and solving challenges. Such results are achieved through explicit knowledge based on the intelligence of the people involved. This explicit knowledge, once acquired, can be put to practical use. Its job is to simplify the data application process by enabling faster, additional operational access to data assets. It also helps in coding and automating procedures that benefit workforce members and incorporate specific knowledge [2]. Knowledge cannot be applied until it is accessed or revealed.

Traditional knowledge stores are typically difficult to explore when a quick fix is required. On the other hand, smart assistants can instantly help with AI-based strategies like classification and tagging.

3. METHODOLOGY

Scope and Need of the Research Problem:

- Available information shows that the integration of AI with knowledge reusability in organizational knowledge operations activities is not explicit, which can significantly transform knowledge operations activities.

- There is a need to study knowledge management and its associated processes in a three-dimensional environment where tacit, explicit, and reusable

knowledge are independently considered as three dimensions [16-21]. A three-dimensional environment could offer effective better knowledge management and at the same time diverse possibilities for AI applications.

- The likely role of AI applications during various knowledge management processes and the benefits of AI for knowledge management systems that leverage tacit and explicit knowledge and knowledge reusability do not seem to be clear from the available work, which while considering the impact of these dimensions, a useful and comprehensive knowledge management options could be examined.

- Therefore, in the present research, it is recommended to examine analytically the above-mentioned factors to make an organization more fruitful, individual, and knowledge-oriented using AI. To assess the overall effort and quality of the knowledge management system, the effect of reusability is an important aspect.

Research Gap:

A review of literature (above) indicates that there is a lack in the literature to study the following facts:

- There is a lack of literature on how artificial intelligence can help transform available tacit and explicit knowledge into useful knowledge for organizations.

- It is not clear why incorporating AI into knowledge reusability is not explicitly included in the organization's knowledge performance activities by Nonaka and Takeuchi [6-8].

- How the transformation of knowledge occurs in a three-dimensional environment (where knowledge reusability is a separate dimension in the presence of tacit and explicit knowledge) [6-8] and how the transformed systems behave when reusing knowledge.

- What are the advantages and disadvantages of the measures mentioned above?

- The well-known model of knowledge management of Nonaka and Takeuchi, [7] lacks the concept of reusability and AI.

- According to some authors [16-21], the extended techniques in a model by Nonaka and Takeuchi [7] are similar to externalization, internalization, combination, and socialization (SECI) in a three-dimensional context. As a result, four new styles of knowledge revolution and four new styles of knowledge reuse were revealed in three-dimensional environments [20]. However, the concept of artificial intelligence was not there.

Importance:

Based on the above discussion, it is of great importance that the following facts are essential for the present study:

- The exploitation of knowledge about the respective reusability, tacit and explicit knowledge, and its management has a great significance when subjected to the application of AI because it not only organizes the knowledge as per the needs of a company while reduces confusion about the types or relevance of the knowledge. Such a study has not yet been conducted.

- Since both tacit and explicit knowledge are compelling entities, their apparent overall consideration of the role of knowledge management in the technological environment can further increase the performance of the organization in the right direction due to the availability of more choices. There is no such reference or even any analytical study available in the literature.

Objectives:

CENTRAL IDEA AND PROBLEM STATEMENT:

Knowledge Management and Artificial Intelligence:

Preceding Harsh [16] projected a model related to (DIK) reuse in data, information, and knowledge and knowledge management processes by stretching the research work of Gene Bellinger (2009), which suggests the possibility of reuse technique during knowledge management activities. It also suggests the possibility of the reuse of tacit and explicit knowledge in a three-dimensional environment where knowledge reusability is a third dimension in addition to tacit and explicit two orthogonal dimensions.

Harsh [16-21], also pointed out the likelihood of reusable knowledge in a three-dimensional environment where reusability was viewed as a separate identity like tacit and explicit knowledge. All the above types of research mentioned did not consider the role of AI, which if considered could lead to perhaps more significant results.

Current research describes analytically the role of tacit, explicit, and reusable knowledge in a business environment, considering the well-known knowledge management model of Nonaka and Takeuchi [6-8] and the research work of Harsh [16-21], based on knowledge, and knowledge reusability as

well as knowledge management processes concepts. The concept of data mining and sensors as well as the role of AI were also revealed. In this work, the focus is on the appropriate and organized management of knowledge and the associated processes related to AI technologies, techniques, and strategies in a reuse environment.

Therefore, in the present analytical study, emphasis was placed on tacit and explicit knowledge and its reusability given the role of AI and related technologies on, knowledge processes such as knowledge creation, knowledge exchange or distribution, and knowledge collection and recovery and knowledge application as well as reuse in a data mining environment. Applications of sensors have also been considered to address some data applications.

As mentioned above, AI plays a crucial role in tacit and explicit knowledge and its management processes such as knowledge generation, knowledge sharing, knowledge storage, and knowledge application. Therefore, a model that incorporates tacit and explicit knowledge and its reusability during these processes is invaluable and appears effective for dealing with the role of AI in the knowledge management environment.

DETAILS METHOD OF PRESENT WORK:

The procedure of this work is divided into the following steps:

a. **Tacit and explicit knowledge and AI in a three-dimensional environment**
b. **The analytical role of tacit and explicit knowledge is data mining environment.**
c. **Knowledge management processes in the well-known Nonaka Takeuchi's model.**
d. **Steps of knowledge management based on Sensor-data-driven knowledge formation (SDD-KC).**

a. Tacit and Explicit Knowledge and AI in three dimensions:

According to the work of Harsh [16-21], both explicit and tacit knowledge is the right angle for knowledge reusability. In contrast, both tacit and explicit knowledge are opposed to each other. The enrichment of knowledge also leads to the transformation of one type of knowledge into another as time goes on (Figure 1). Here tacit and explicit knowledge as well as knowledge reusability are shown as independent quantities and changes as time revolves.

Therefore, by extending the Nonaka and Takeuchi model [6-8] using Harsh research [16-21], it is likely to explain these revolutions through the following straightforward study:

Consider an expert system that is based on the concept of artificial intelligence, which requires knowledgeable people in the company. AI can play a crucial role by constantly expanding both tacit and explicit knowledge and the reusability of such systems, and novel knowledge can be harnessed through the application of AI to improve competitive advantage [22].

We need a device that allows us to examine data patterns separately, as ultimately tacit, and explicit knowledge held by organizations is required for separate tacit and explicit knowledge management systems. Such a device is termed as sophisticated data mining.

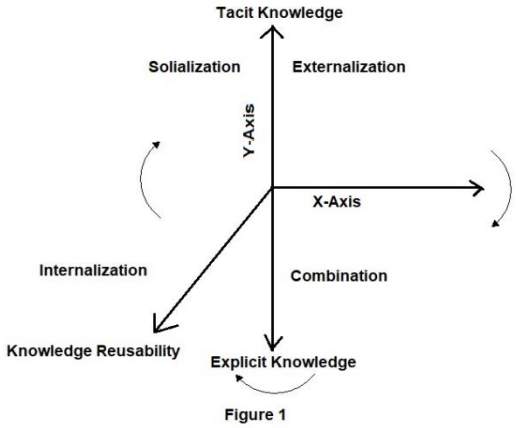

Figure 1: Transformation of one type of knowledge to another

However, explicit, and tacit knowledge and its reusability are not directly involved in expert systems. Of course, tacit, and explicit knowledge and their respective reusability, paired with AI, play an important role in the needs-based management of corporate knowledge. Of course, AI helps build useful knowledge (tacit and explicit) that a business needs for a specific task. However, the process of accumulation of tacit and explicit knowledge starting from simple data collection and associated processes can be defined in Figure 2 based on the work of Liebowitz [23].

Using Figure 1 and the work of Matija et al.[31], we can represent the extended knowledge framework in Figure 2. We can separate tacit and explicit knowledge and create their respective knowledge environment, in which, in addition to tacit and explicit knowledge, the application of knowledge reusability, which plays a crucial role, is also considered. Figure 1 above can help us better understand the knowledge management process through tacit, explicit, and reusable knowledge.

We can have a mining system in which tacit and explicit knowledge (along with their reusability) have a wider range of

knowledge management frameworks. However, how knowledge identification takes place and how the sensor works with tacit and explicit data and knowledge is explained in detail below.

Figure 1 represents the knowledge transformation model, an extended Nonaka and Takeuchi model [6-8], in which there is a continuous transformation from tacit to explicit and from reusable tacit to explicit knowledge, as suggested by Harsh [16-21]. In this way, knowledge is created, shared, used stored, or restored in three-dimensional environments. Now, if we apply the application of artificial intelligence tools (as shown in Table 2), extremely useful results emerge that can facilitate knowledge management (see Table 2). The following explains the impact of AI on tacit, explicit, and related knowledge management.

a. Analytical role of tacit and explicit knowledge in a data mining environment:

An interesting subfield of knowledge management (KM) and data mining (DM) represents a related branch of knowledge discovery in database activity. With the information explosion in the new digital era, research analysis in the field of data mining and knowledge management in business groups continues to improve, especially for small and medium-sized enterprises (SMEs) [24]. Data mining is crucial in establishing the knowledge management product because it converts the data into functional knowledge and the task of knowledge management is subsequently to thoroughly manage these knowledge resources within the companies.

To generate knowledge, a DM practice model should be used to separate large data sets and organize them into effective and different intuitions [25]. Typically, there are three most used DM practice models: “Knowledge Discovery in Database (KDD), Cross-Industry Standard Process for Data Mining (CRISP-DM), and Sample, Explore, Modify, Model, and Assess (SEMMA) model” [26].

According to Mohd Selamat et al. [24], explicit knowledge can be uncovered in databases, which can be classified as an outdated technology where traditional information and communication technology (ICT) tools include websites, portals, and databases. While tacit knowledge is practice-based knowledge that can be collected from developed technical ICT devices as well as from public network devices.

In the present work, we use the data mining environment to manage the knowledge (see Figure 1).

b. Knowledge management processes in well-known Nonaka Takeuchi's model:

The well-known model of knowledge management by Nonaka and Takeuchi [6-8] is applicable here, where four knowledge management processes take place, but in the present case, including reusability (Figure 1), there are hardly any differences in several processes and there are more useful activities, as mentioned in Table 1.

In the present example, one can see that knowledge follows the same cycle as given in the Nonaka and Takeuchi [6-8] SECI model; However, due to the reusability of knowledge, the rate of knowledge change is evident over time as per Harsh's extended model [16-21]. Here we assume that there will be an ongoing accumulation of knowledge (and the transformation of tacit knowledge into explicit knowledge and vice versa) over time. The revised model processes of knowledge conversion is mentioned below in Table 1 using the present concept (Figure 1) and the Nonaka, Toyama, and Konno [8] notion.

The processes such as knowledge construction or creation knowledge gathering, knowledge sharing, and knowledge applications are demonstrated with the proper techniques, technologies, illustrations, and practical examples in Table 2.

Role of Sensor:

Sensors can be used for data access and data collection [27] [28] as the sensor provides relaxed access to data in regular formats. In this situation, there is no practical scope for the dimension of this data and offers unlimited scalability. It also makes it possible to effectively obtain detailed data for an enormous number of agents. The enormous amount of data gathered and transmitted by mechanisms such as sensing provides a wealth of evidence that is often important for managerial decisions, in companies. Analytics, like sensors, are a big data task that companies must perform.

Practical examples that help highlight AI and knowledge management:

- In Knowledge construction, the use of Blogs, Wikis, Expert Systems, Machine Learning & AI, and AI-based digital devices are useful as mentioned in Table 2.
- In Knowledge collecting and recovering processes algorithms are quite suitable as shown in Table 2.
- In Knowledge sharing/distributing processes Blogs, Wikis, and Yammer have been found appropriate as mentioned in Table 2.
- Finally for the Knowledge usage/application processes agents associated with AI assistants. for example, classification and tagging are observed useful (Table 2).

- **Influencing AI for Tacit Knowledge Invention:**

AI offers an array of innovative tools and techniques to uncover tacit knowledge. Sentiment analysis, social network analysis, and predictive modeling are just a few examples of AI-powered approaches that enable organizations to tap into the tacit knowledge reservoir. By understanding the nuances of human behavior, AI can identify patterns, connections, and emerging trends that elude traditional knowledge management methods. As mentioned above expert systems can find innovative ideas and influence its outcome to the respective systems. Machine learning and AI-based digital devices are more examples in this direction which can convert not only tacit knowledge to tacit knowledge but can also convert explicit knowledge to explicit knowledge.

There are several AI devices (see Table 2) such as algorithms, machine learning, expert systems, etc. which are useful for one or other knowledge management processes.

Table 1: Differences in several processes and there are more useful activities

Type of Mode Change	**From Knowledge to Another Knowledge**	**Definition (Nonaka et al., 2000). Type of knowledge conversion**	**Harsh model (2007a, 2007b, 2008, 2009, 2011, 2014). Type of knowledge conversion**
Socialization	Tacit to Tacit and reusable Tacit to Reusable tacit	Socialization is the route of switching novel tacit (and reusable) knowledge via joint capabilities.	In three-dimension reusable tacit to reusable tacit knowledge.
Externalization	Tacit to Explicit and reusable Tacit to Reusable explicit.	Externalization is the method of formulating tacit (and reusable) knowledge into explicit (and reusable) knowledge.	In three-dimension reusable tacit knowledge to reusable explicit knowledge.
Combination	Explicit to Explicit and Reusable Explicit to Explicit	"Combination is the route of converting explicit (and reusable) knowledge into added complex and organized series of explicit (and reusable) knowledge".	In three- dimensions reusable explicit knowledge to reusable explicit knowledge.
Internalization	Explicit to Tacit and Reusable Explicit to Reusable Tacit	Internalization is the route of embodying explicit (and reusable) knowledge into tacit (and reusable) knowledge".	In three-dimension reusable explicit knowledge to reusable explicit knowledge.

- **Improving Decision-Creation and Invention:**

Integrating AI and tacit knowledge has critical implications for execution and invention. AI-driven systems can examine tacit knowledge to identify competent methods, invisible knowledge, and likely blockages within an organization. This allows administrators to manage learning outcomes, adapt methods, and reinforce belief in continuous development. Additionally, AI can accelerate invention by uncovering new ideas and enabling the cross-pollination of tacit knowledge among various organizations and departments.

The present results suggest that not only does it improve overall organizational performance based on knowledge, but by incorporating AI it also leads to:

- Recognition and collection of more accurate and better-quality knowledge due to the improvement of reusable knowledge. • Identifying, selecting, and distinguishing other useful tacit and explicit knowledge, particularly based on reusable knowledge. • Reliable and repeated use and reuse of knowledge through increased effective quantity and customer trust. • Faster knowledge transport as we build our knowledge repository based on knowledge creation, sharing, and application.

- By using technologies such as AI, the corresponding reusable knowledge can be made meaningful and immediately accessible. This type of study is unique and there is no evidence of such type of study in the literature. Thus we need to discuss it into details.

Figure 2

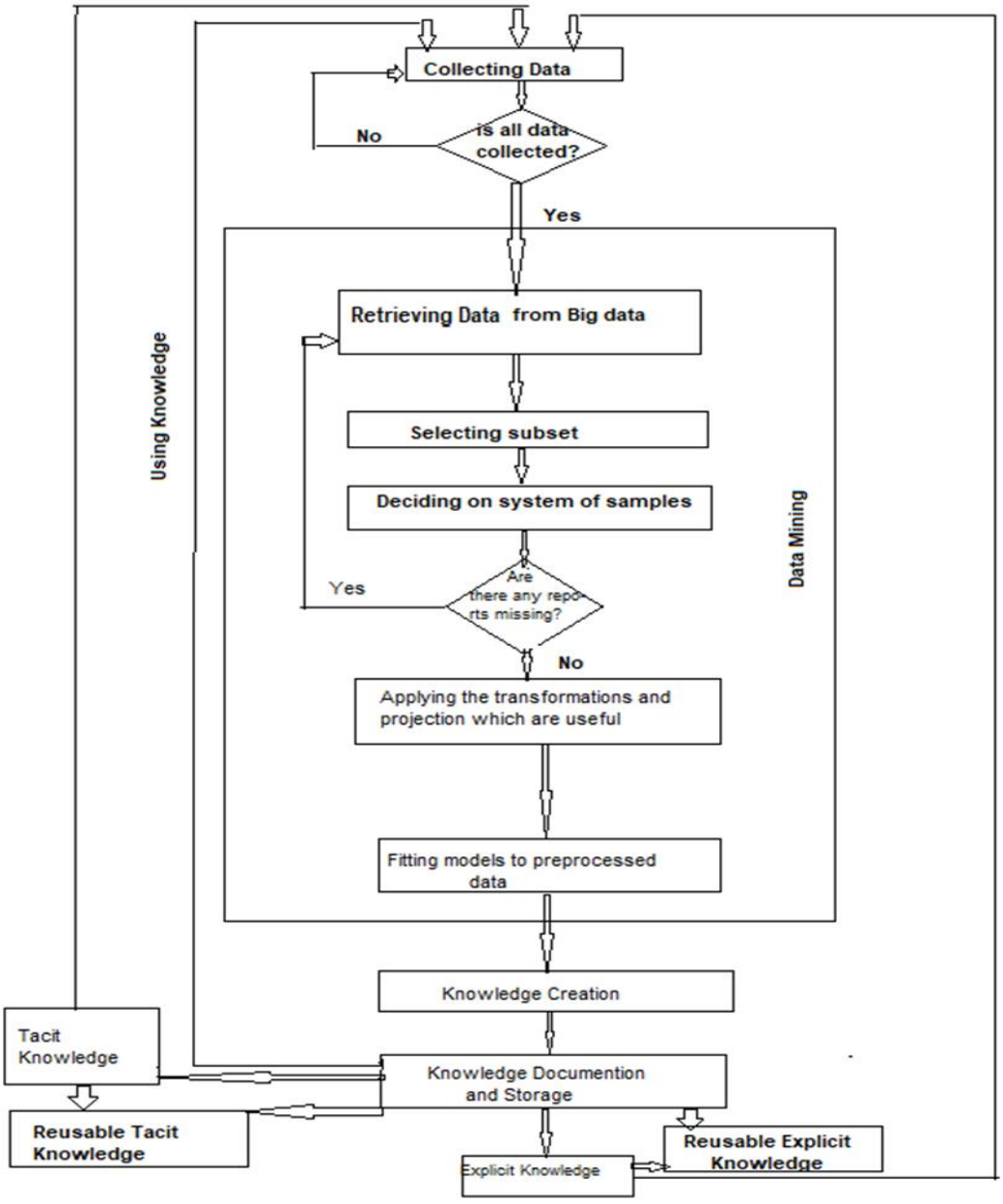

Figure 2: Extended knowledge framework

The role of AI during various KM Processes in Table 2 below is based on our present findings and discussion and uses references [10] [12] [16] [20] [29].

Table 2: Likely Role of AI applications during various Knowledge Management Processes

The KM activity	Type of Knowledge: Tacit/Explicit and Technique	Opportunities are available for employing AI practices with technology.	Illustrations of use cases	Application of relevant Artificial Intelligence Technology.
Knowledge construction	➢ Both Tacit and Explicit separately. ➢ Combination of tacit and explicit knowledge Technique: ➢ Machine learning is placed inside the KM Kits domain. ➢ Human learning is placed mostly within the KM Process framework domain. ➢ Exploring through deep learning. ➢ Organizational learning is cited within the KM Models domain.	• self-learning analytical capabilities. • Spontaneously learn to identify complicated models and formulate intelligent outcomes built on data. • Uncovering hidden relationships among data. • Improving fresh asserting knowledge out of available data.	• Predict retailing prospects. • Detect and correct ineffectiveness by analysis of entries.	• Blogs • Wikis • Expert Systems • Machine learning and artificial and business intelligence. • AI AI-based digital devices. [29] [13]
Knowledge collecting and recovering	• Both Tacit and Explicit • Combination of tacit and explicit knowledge Technique: • Encourage data storage. • Maintaining Cataloguing. • Retrieve scholastic stuff.	• data-driven, self-learning algorithms • Google's Gmail algorithms • Learning from the system itself • AI can search and review former permitted patterns. • Encourage the usage of knowledge reuse.	• Consolidate and condense legal precedents applicable to a fresh case. • Retrieve distributed pieces of data linked to a troubleshooting circumstance.	• Exploring through algorithms [34]
Knowledge sharing/distribution	• Both Tacit and Explicit Technique: • Persuade knowledge dispersal. • Use of communication devices. • Encourage wikis.	• Use of shared communication devices. • Wikis • Use of Shared records • Facilitation of Synchronised system • Use of AI in a cooperative environment. • Easing fully to create an environment of knowledge discussion.	• Encourage communications between various networks. • Ease, maintain, and use continuous advice related to communication networks.	• Blogs [36] • Wikis [37] • Yammer [34][35] [15]
Knowledge usage/application	• Both Tacit and Explicit Technique: • Maintain teamwork. • Use of history.	• casual Dialogue • Facilitation of collaboration • Can apply large amounts of data. • Application of knowledge straightforward. • Improvement of usage of knowledge	• Use of online data, and knowledge is encouraged.	• Agents associated with AI assistants. for example, classification and tagging. [13]

- Companies can use AI-driven algorithms to revise and track changes and original information on any topic, directly taking into account both tacit and explicit knowledge. There is no such study that comprehensively and simultaneously considers both tacit and explicit knowledge.

- The perception of how knowledge management patterns work (tacit and explicit) and how the use of data mining can be improved through the appropriate use of AI, such as sensors, needs to be appropriately selected.

- The expert system is controlled by AI and stores all the experts' knowledge about the company to implement perceptions [30]. There is also knowledge other than expert knowledge that is useful for precise skills and may use separate sensors deployed on these devices and machines to collect such data.

- The role of AI is expected to not only enable a clear selection of tacit and explicit knowledge but also help in instant access and reorganization of the entire knowledge.

Today, there are a growing number of popular technological AI tools (in addition to those mentioned in Table 2) that are being used by competitive companies in knowledge management solutions.

4.CONCLUSION AND CRITICAL DISCUSSION

Considering tacit, explicit, and reusable knowledge greatly helps in many overloaded knowledge management processes in an AI environment as mentioned in Table 1. Such knowledge management systems not only increase the level of knowledge management quantitatively but also improve the quality of knowledge management by considering separate tacit and explicit knowledge activities. Knowledge reuse further increases the quality of knowledge due to its repetitive nature because required knowledge is corrected and selected according to obligations each time.

A wide range of knowledge and its repeated use facilitates the economy of a company (enhanced by the AI environment) and increases confidence in knowledge management in a variety of environments where various tacit and explicit knowledge is shared, distributed, and reused.

Developing a meaningful knowledge management methodology is complex for any organization, especially in the competitive age of AI. Capturing, distributing, and sharing tacit and explicit as well as reusable knowledge is a crucial part of any organization, as lessons learned, and best practices can be documented so that future projects can benefit from successes/failures and share them with other companies. Since we know from Figure 1 that both tacit and explicit knowledge are opposite by sign that means their collection is quite a separate technique, and both always revolve around time thus we need a distinguished system to collect them.

Recent results show that companies today have understood selected types of AI methods and that enables improved knowledge management through new achievements in AI every day. The appropriate use of sensors is a crucial part of dealing with explicit and tacit knowledge. Further discussion is needed to identify the right types of knowledge according to the needs of the organizations. Table 2 lists the recognizable applications of AI in a knowledge-intensive environment mentioning several use cases.

The present study hypothesizes that AI-based systems can be leveraged to deploy a viable technique that, through measurable and qualitative information, enables employees to recover faster and more effectively. Therefore, it is promising that an AI-based system may be used to support intensive knowledge management services for an enterprise. However, the potential of AI has not been realized, by numerous companies due to the lack of AI awareness and especially the need for separate tacit and explicit knowledge. Thus, the present analysis not only supports quantitative and qualitative tacit and explicit knowledge but suggests clarity about the use and reuse of knowledge for each organization during various processes.

How do the findings address the research's problem?

Table 1 and Table 2 try to reveal the prospects of AI for knowledge management and its emerging systems in a three-dimensional environment because of:

- Table 1 shows how one type of knowledge is enhanced by the SECI model of Nonaka and Takeuchi [7] with the extended Harsh model [16-21] (based on reusability in an AI environment) is transformed into another type of knowledge.

• Four types of knowledge management styles [20] are responsible for transforming four types of knowledge, including reusable knowledge in Table 1, while Table 2 shows that these KM processes produce positive and useful results through the use of AI.

• A three-dimensional environment offers more knowledge selection and at the same time diverse possibilities for AI applications.

• Reusability not only increases the effective knowledge of the system but also creates qualitative knowledge through the repeated use of the knowledge. Thus, the applications of AI in such circumstances can open more choices for the types of knowledge management.

We have successfully explored analytically underlying features of knowledge management processes as:

• Table 2 shows how the four knowledge management processes, each comprising tacit and explicit knowledge, are successfully exploited by corresponding AI tools, along with the respective examples and use cases.

• In Table 2, with the application of reusability of tacit and explicit knowledge, there is an opportunity to use appropriate AI tools to obtain the desired knowledge applications. All suitable use cases are displayed. However, there may be various other AI applications and use cases not listed in Table 2.

• Figure 2 shows analytically how the knowledge management processes are successfully used by leveraging the corresponding tacit and explicit knowledge as well as corresponding reusable knowledge from different types of collected data.

• The crucial role of tact and explicit knowledge and its reusability, especially in a data mining environment, is shown in Figure 2. Knowledge in a reusable environment makes the knowledge higher quality due to the experience of repeating knowledge.

• Our assumption that AI systems can be developed and deployed to support knowledge management activities is supported both by Table 1 and Table 2 and it is also supported analytically by Figure 2, which is influenced by AI.

- The critical role of tact and explicit knowledge, as well as its reusability, particularly in a data mining environment, has been demonstrated in Figure 2, for which all relevant references are provided in the creation of Figure 2.

• The likely role of AI applications during various knowledge management processes and the benefits of AI for knowledge management systems that leverage tacit and explicit knowledge and knowledge reusability seem to be clear from the above discussion, however.

What were the negative impacts associated with knowledge management in the context of AI:

Although AI offers tremendous opportunities, there are still questions that need to be resolved. Ensuring the privacy, clarity and ethical functioning of AI algorithms are important concerns. Organizations must establish robust control frameworks and remain accountable for AI processes to maintain trust, fairness, and reliability in their data management efforts. In addition, there is the possibility that there will be employment bottlenecks in certain companies. Some of the more negative facts are mentioned below.

Some more negative impacts are:

- Sometimes isolated data is used without customers' consent, which can lead to legal and social problems.
- The use of AI could also lead to a loss of capabilities in some cases, such as the investigative skills of medical experts.
- Trading algorithms that are unable to adequately adapt to new situations lead to unexpected financial loss.
- AI can hastily produce and distribute enormous amounts of information. This can result in an information burden, making it confronting for individuals to manage, hold, and create the perception of the thin volume particularly tacit knowledge.
- The disadvantages of AI incorporate employment shifts, ethical fears about prejudice and secrecy, and confidence consequences from hacking. Particularly tacit knowledge sometimes unethically transfers.
- Mishandled AI can harm companies' finances and hinder innovation and novelty in the workplace.

5. CHALLENGES AND SAFEGUARDING ETHICAL AI:

How to Overcome:

- Although AI promises enormous capabilities, some challenges related to tacit knowledge and its associated processes must be carefully addressed.
- Organizations must establish strict control backgrounds and adopt reliable AI methodologies to maintain trust, equity, and reliability in their tacit, explicit, and related knowledge management efforts.

- The role of AI in solving certain types of tacit knowledge is changing the shape of knowledge management. By leveraging AI expertise, companies can overcome the differences between explicit and tacit knowledge.

6.LIMITATIONS AND FUTURE RESEARCH WORK

Limitations:

- Risk intensity essentially influences the public structure as other activities and choices are linked (e.g. water resources, telecommunications, etc.).
- Sometimes it becomes a very serious matter if we could apply AI to national official activities like elections, sensitive appointments, etc.
- Unfortunately, many teams struggle with tacit knowledge sharing, which can result in lost opportunities, duplication of effort, and missed deadlines.

Future Research Work:

- Current findings are limited. However, if they were practically applicable (in a reusable environment) to a real social, business, or national problem, this would be a useful and very interesting scenario.
- AI's role in solving tacit knowledge is changing the knowledge management model. By leveraging AI expertise, companies can bridge the differences between explicit and tacit knowledge (particularly reusable knowledge) and uncover new drivers for improvement, alliances, and management decisions. As AI advances, it awaits the solution to solve the puzzle of tacit knowledge and enable businesses to thrive in the digital age.
- AI expands a collection of novel devices and methods to reveal tacit knowledge as well as reusable knowledge. Community network analysis, sentiment or emotion analysis, and extrapolative modeling are particularly rare examples of AI-driven methods that enable companies to extract the silent pool of knowledge.
- By knowing the traces of human activity (tacit and explicit, particularly reused), AI can detect models, connections, and rising trends that elude accepted knowledge management approaches.

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