Knowledge Management (KM) and Artificial Intelligence (AI): Future Trends Towards an Integration Between KM and AI

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Abstract

A new field called knowledge management (KM) is attracting attention from both business and government. KM will play a critical role in the success of translating individual knowledge into corporate knowledge. Many practitioners and thinkers in the area of KM are forgetting the importance of artificial intelligence (AI) in the development and advancement of this subject. KM and AI will be examined in this article, which examines the history and KM's future and its connection to AI. Machine learning is made possible through AI. Decisions will be made more quickly and accurately if AI is used in the distribution of information. AI has the potential to grow, utilise, and generate knowledge in new and unexpected ways.

Keywords: Knowledge management, Intelligent systems, Artificial Intelligence.

1. Introduction

Business process reengineering (BPR), from the year 2000 and now, knowledge management (KM) should indeed be viewed as a strategic aim in businesses for better recording, sharing, and exploiting information internally and externally? The adoption of KM and the implementation of KM efforts may be viewed with some scepticism or even a degree of conservatism.

One worry is that a substantial number of senior managers feel that KM may merely be inflated management of information and BPR activities. As with BPR, there is fear that KM would suffer from the same pitfalls. Second, there seems to be insufficient rigor in the development of KM methods. As far as KM project techniques are concerned, there are just a few of businesses that have created rigorous and complete approaches. In addition, the area of KM is becoming vague as vendors claim that their solutions are KM tools, but in fact they may just be document administration or management of information products, respectively. This paper is organized in the following format: Section 2 explains knowledge management and its underlying concepts. Section 3 focuses on applying AI techniques to advance knowledge management. Section 4 will be dedicated for discussing the future of knowledge management. Section 5 represents conclusion which includes important concluded remarks for research directions.

2. Knowledge management (KM) and its underlying concepts

The act of developing value from an organization's intangible assets is known as KM (Ali & Tang, 2022; Omoush, 2019; Seyr & Hoffer, 2021). It is concerned with how to effectively exploit information and KM both internally and externally to customers and stakeholders (Greer & Egan,

2019; Movahedi & Salehi, 2020). As a result, KM incorporates ideas from a variety of fields, such as organizational behaviour, human resource management, AI, IT, and so on. The emphasis is on how to effectively share information to provide value to the company.

Many individuals mistake knowledge and information. There is a notable distinction. Information is structured data, while knowledge is the capacity to act. Experts may have accumulated a collection of truths and rules of thumb through many years of experience, which they call knowledge. Knowledge, rather than information, is what the master should impart with the apprentice in a master apprenticeship relationship (Teo & Tan, 2020).

After then, knowledge takes in numerous forms. Tacit knowledge is subconscious information, or knowledge that is acquired without conscious thought. The knowledge engineering conundrum makes it challenging to extract and elicit this sort of information. The more compiled one's knowledge is, the more difficult it is to extract and codify it in a knowledge base. Another sort of information that is more visible and may be recorded is explicit knowledge. Internalized knowledge refers to how explicit information is internalized, formed, or impacted by one's own beliefs, and hence varies from person to person (Hadjimichael & Tsoukas, 2019).

Many businesses must use a two-pronged approach to finding and disseminating this sort of information. To codify and record knowledge in a knowledgebase, a codification technique will be required. Personalization can also be used to foster informal conversation in the hopes of uncovering and transferring tacit knowledge from one person to another. Knowledge fairs or knowledge exchanges are held by companies including Johnson and Johnson and the Central Bank to foster this informal dialogue.

What are the merits of the KM concepts? Knowledge is power, knowledge is held in high respect, a new motto that extends this notion may be "sharing knowledge is power". Upper executives have realized that their competitive edge is often their people, or the organization's brainpower or intellectual capital. There might be significant synergies if there is a means to harness, collect, secure, and then disseminate this information across staff and consumers. Companies are already claiming major advantages from their KM initiatives. KM programs at the World Bank, and many other businesses have already yielded significant results (Bury & Masuzawa, 2018).

When we only understood what we understand, as one CEO put it, this sort of thinking may provide a company a competitive advantage. Having to learn from others has traditionally been a favoured method of instruction, given that the others provide wise and educated guidance. To codify, record, and distribute these experiences learned, several companies have created learnings repositories and best/ worst practice repositories. Of course, there must be a system in place inside the company for actively documenting and verifying lessons learned, as well as evaluating and communicating them to the right persons. In addition, attitude of knowledge sharing must be established, complete with incentives and rewards to encourage people to contribute their expertise. Building a supportive culture is essential for a KM initiative's effectiveness (Bishop, Bouchlaghem, Glass, & Matsumoto, 2008).

There were some fascinating insights gained so far in terms of developing and implementing KM projects in businesses. Firstly, rather of integrating KM into the entire organization's plan for corporation development and implementation, most firms are launching limited KM activities inside a specified business area within a department. This is a low-risk strategy to demonstrate that these organizational learning pilot programs are effective, they could be expanded for wider acceptance and implementation. However, for KM to be genuinely effective in the long term, it must be incorporated into the firm's overarching clear strategy. Several of the new initiatives take

the shape of a developed questionnaire, a knowledge repository of best practices/ lessons learned, or an online yellow pages directory of the organization's expertise/ experts (Konys, 2019).

Another important point to consider is that just because you're using Lotus Notes doesn't guarantee you're conducting KM. These technologies will aid in the development of a technical infrastructure for KM, but KM is much more than resources and devices (Simonyi, 2021). In reality, it is more about people and culture, which must be carefully studied in order to create a knowledge-sharing atmosphere. The fact that most businesses lack a disciplined, extensive KM process for developing these KM practices and activities is a last important lesson learnt. Probably one of the reasons for this is because KM vendors do not have full KM processes themselves. A few firms have quite extensive KM strategies, while the majority do not. Doomsaying and misbranding of products and approaches by KM suppliers creates confusion and suspicion in the marketplace. The AI community has gone between peaks and troughs in terms of AI in the past, until assumptions were kept in line.

Is KM a logical extension of information and document management? Yes, in part. AI, knowledge-based technologies, IT, management of human resources, organizational behaviour, and related fields are among the topics covered. According to CEO of Buckman Labs, ninety percent of the work goes into creating a conducive culture for KM. Many firms' KM initiatives begin in IT or information systems departments, which is typically disregarded. Instead than focusing on the human and culture components of KM, they have focused on the underlying IT to construct their KM systems (Oktari, Munadi, Idroes, & Sofyan, 2020).

In some ways, it's a case of the chicken and the egg. If you don't have the technology infrastructure in place to support KM systems, your KM efforts might be a waste of time. However, no matter how simple it is to enter information into a KM system, if individuals are unwilling to contribute their expertise, the KM endeavour will fail. As a result, both the people/cultural and technological aspects need considerable attention and study. There are three key reasons why KM attempts fail. The first is that the firm's KM strategic plan was unrelated to its business/mission. Second, there could have been an absence and active top-level support and participation. Third, it's possible that the KM program was badly developed. These factors are also common in the failure of most information management projects (Bloodgood, 2018).

Are top executives open to the concept of KM? it is performed that a KM receptivity study at the company offices of a large pharmaceutical business in the summer of nineteen ninety-nine to assist see what's out there. The poll was given to top management at the company's headquarters, and the number of responses was about sixty-nine per cent. The questions in the survey analysis concerned with the skilled labour viewpoint. According to the survey results, the drug industry under investigation has a solid and clear grasp of the importance of its personnel, particularly its specialists.

Ninety-eight percent said that managers' understanding of the necessity of delivering difficult work to their expert staff is a critical factor for knowledge retention in a company. Organizations must have extremely clear strategy for keeping skilled personnel, according to ninety six percent of respondents. Expert personnel are the most important resource for firms, according to ninety three percent of respondents. There was considerable confusion between the phrases professional and knowledge work, with approximately fifty eight percent agreeing (thirty six percent indifferent) that fairly high-level expert labour that leads to customer satisfaction should be called knowledge work. Knowledge employees are the key contributors to organizational performance, according to seventy seven percent of respondents (twenty percent indifferent).

Most participants proved to be unfamiliar with the word or notion of a learning organization when it came to inquiries about the knowledge viewpoint. The word was known to 36 percent, neutral to twenty-five percent, and unfamiliar to 39 percent. The respondents also said that they did not believe the firm was ready to change into a learning community. Only twenty two percent of respondents thought their company was ready to transform into a learning community (forty nine percent were neutral, twenty nine percent disagreed). The significant majority of respondents felt that seeing the world from a knowledge - based perspective is necessary to be genuinely successful in business now (seventy nine percent agreed) and in the future (eighty one percent agreed).

When it came to the Chief Information Officer role, most individuals were either indifferent (fifty five percent) or had mixed opinions (twenty eight percent agreed, sixteen percent disagreed) about whether or not a distinct Knowledge Manager position should be included in the company's structure. Some annotated comments suggested that knowledge managers be distributed throughout the company's various business segments. However, the majority of respondents (sixty three percent) agreed that the company should devote more funds and resources to KM (thirty one percent were neutral).

What kind of KM system would be perfect for a company? The answer to this issue is contingent on the organization's nature, business, and culture, as well as how widely KM will be used. KM systems should ideally have the following capabilities: be available to all employees and management (as well as customers) twenty-four hours a day, seven days a week; be able to handle different languages; have simple ways of entering data and insights into the knowledgebase with registers performed for accuracy and trustworthiness of the input; have intelligent agents that will auto evaluate incoming learnings and distribute them to relevant individuals who could benefit from them.

Since information and knowledge occupations are driving the Modern Economics, states will succeed if their people are adept with their brains. Many of these positions are located in offices. Persons with at least three to four semesters of a college tend to hold management, professional, and technical roles. Furthermore, not only in the high-tech industry, but in numerous businesses and vocations, skill requirements are increasing. The study's knowledge jobs metrics track three things: (1) the proportion of the labour employed in offices; (2) the majority of the workforce engaged in management, professional, and technical roles; and (3) the workforce's educational level.

KM should be a major pillar in an organization's ideology as we prepare for the Knowledge Age. The rise of KM is true, and if done correctly, it can provide significant value to a business. KM must procure from other disciplines, including such AI, to understand and implement what many others have managed to achieve in order to stay alive as a vital strategic principle in institutions.

3. Applying AI techniques to advance KM

Knowledge capture and representation is an essential part of KM. Knowledge engineering methods have been used in order to collect latent information from domain experts by interviewing, analysing protocols, simulating scenarios, using personal construct theory, and sorting cards. These knowledge acquisition strategies may be used to build knowledge repositories in KM systems for recording information in an on-line manner. These knowledge repositories might also be utilized to inductively find correlations and patterns for the creation of new knowledge by using AI-related technologies.

Generally, a knowledge ontology and knowledge application are used as the foundations to design these knowledge repositories. It is customary in the area of artificial intelligence to develop knowledge ontologies and means of encoding acquired knowledge (rule sets/cases/scripts/frame objects/ semantic nets, for example). It is possible to use AI approaches in the KM industry to aid in codifying information (de Bem Machado, Secinaro, Calandra, & Lanzalonga, 2022). The information extraction methods in KM systems may be helped by other AI approaches such smart machines. This fresh information can be generated with the assistance of intelligent agents. KM is supported by an agent-based adaptive work flow system created by the University of Edinburgh's AI Applications Institute. KM tools may benefit from the use of natural language and voice understanding front-ends as interactions in the future. One of the KM's fundamental responsibilities is to distribute information to those who may profit from its usage and application, both internally and internationally (Sundaresan & Zhang, 2021).

People in the company are often responsible for disseminating information relevant to their roles. A KM team in charge of gathering and disseminating information to all relevant parties, including staff, managerial staff, clients, and interested parties, may be preferable to a passive distribution model in which information is made available only to those who need it.

Additionally, there are methods that may be used to make this procedure go more smoothly. As a means of disseminating relevant summaries or particular bits of information and expertise to people most in need, optimization algorithms might be used. Knowledge repositories may be mined for patterns, linkages, and potentially new information using analysis and knowledge discovery approaches. In the advertising and banking industries, this is already taking place.

4. The future of KM

A key inquiry is: will information the board be an enduring idea five to a decade not too far off? The response to this question relies halfway upon the impact of pointless publicity and over expectations worked from the supposed KM board merchants and mostly on administration's acknowledgment that KM is a basic string that should be entwined inside their association and culture. Allow us to answer now to every one of these part parts.

Regarding the publicity and conceivable over expectations that might be made by the KM vendors, this is a genuine concern. A significant number of managements of information, document management and AI vendors are guaranteeing that their devices are currently KM tools. Some portion of the disarray originates from not having a general arrangement of terms, jargon, ideas, and principles in the KM public.

Moreover, a large number of the KM providers and suppliers are getting on KM cart without having thorough, legitimate systems and strategies for performing KM. Until these viewpoints are created and applied effectively, there might be an absence of understanding coming about because of poorly characterized ideas and approaches.

5. Conclusion

When it comes to KM, organizations should be aware of these possible dangers. Change management is an essential part of ensuring that KM succeeds in the workplace. To structure a helpful ethos for data distribution, management amongst the organization needs to be a function of change. One of the most difficult aspects of change management is ensuring a seamless transition to a KM system. The inherent tendency of people is to resist change, which is why the

actions and procedures of change management should aid in creating buy-in for KM roles and values among individuals working in businesses.

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