Chapter Eight

Impact of digitalization in organizational learning and knowledge management

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Abstract

The importance of knowledge management in organizational learning and development is well established both in theory and practices. The existing knowledge management (KM) practices in organizations are becoming obsolete and it is necessary to cope with and adapt to new and digitally enabled KM practices. This study critically reviews and highlights the shortcomings of existing KM practices. Second, it brings out the possibilities of digitalization in organizational learning and knowledge management through diverse avenues. Further, it also highlights the implication of digitalization in organizational learning and knowledge management.

Keywords: Knowledge Management, Digitalization, Organizational learning, Organizational Knowledge

Introduction

'If NASA wanted to go to the moon again, it would have to start from scratch, having lost not the data, but the human expertise that took it there last time.'(Brown & Duguid, 2000: 122). Human civilizations existed by creating, accumulating, sharing, and applying 'knowledge' in our day-to-day activities. In the last two decades, an explosive growth in discussion is witnessed about knowledge – knowledge management, knowledge work, knowledge-intensive organizations, knowledge economy and so on. To advance the above discussion on knowledge and knowledge sharing, DIKW Pyramid (refer Figure 1 below) is called upon.

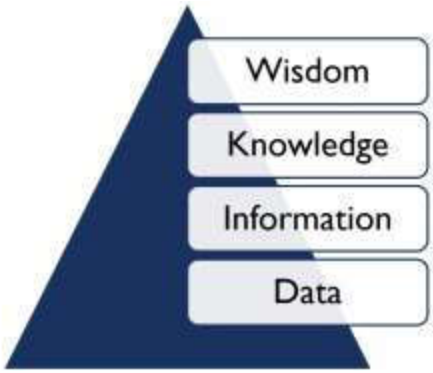

Figure 1: DIKW Pyramid (Rowley, 2007)

In this pyramid, data refers to basic properties of objects which include facts, statistics, and descriptions. These data objects lack context. For instance, computer-aided drawings are examples of data objects. Information is a construct that is generated by processing data and making sense of them. Often this entails embedding basic semantic information about the object so that classification, selection, or sorting is possible (Sawhney et al., 2020). For instance, BIM resides in this layer of information. Knowledge and Wisdom are the two higher level representations in the pyramid. Knowledge refers to the act of making sense of information and deriving further know-how or actionable insights. Wisdom refers to the understanding, appreciation and repeated application of knowledge in different contexts.

Different categories of Knowledge

To develop an effective and successful knowledge management strategy – individuals, teams, and organizations need to understand the different categories of knowledge. These include – explicit, implicit and tacit knowledge.

- ***Explicit knowledge*** – easy to articulate and share. It can be communicated from one to another through different mediums.
- ***Implicit knowledge*** – practical application of explicit knowledge. Skills that are transferable from one job to another are examples of implicit knowledge.
- ***Tacit knowledge*** – knowledge gained from personal experience that is more difficult to express.

Although the phrase 'knowledge management' only came into common usage in the mid-1990s, it is not the case that the management of organizational knowledge processes began by then (Anumba et al. 2008). If that is the case, then how were the Egyptian pyramids, the steam engine or the Apollo spacecraft built? The processes that create and apply knowledge in organizations are labelled as 'knowledge management' (KM). KM also refers to the art and science of optimizing knowledge flows within an organization. The advent of technological growth and changing world, redefines the various drivers of KM as below.

- Quick changes in markets, technology, and competition

- Recognition that innovation is key to competitiveness, and depends on knowledge creation and application
- ·Wealth being demonstrably and increasingly generated from knowledge and intangible assets
- Rediscovery that people are the locus of organisational knowledge
- Growing importance of cross-boundary knowledge transactions
- Making continuous learning essential

As the need for KM are clearly laid out, how do organizations carry out KM activities? KM tools are used for these purposes. The next section describes the KM practices in organizations and the shortcomings of those practices in the digital age.

Research approach

The present study critically reviews the existing body of knowledge on 'knowledge management (KM) practices' across organizations. While the authors utilize the existing literature on KM to position their arguments, it is also bounded by the authors experiences, particularly, Author-1's experience in management of large projects and his real-world exposure to the adoption of KM practices.

Knowledge management in organizations

As Gallupe (2001) states, KM tools are not simply information management tools as they should be 'capable of handling the richness, the content, and the context of the information and not just the information itself'. KM tools adopted should enhance and enable the sub-processes of KM, i.e. knowledge generation, codification, and transfer. Traditionally, KM techniques such as brainstorming, communities of practice (CoPs), face-to-face interaction, post-project reviews, mentoring, training have been in use for a long time. While traditional KM practices are widely adopted across organizations, they have certain shortcomings. These include:

- Knowledge resides in minds of few individuals
- Knowledge transfer mechanisms are not neatly defined
- Intents of decisions taken by organizational managers and top management are not recorded, rather only outcomes are noted.
- Decision makers are often do not share / not available to comment on their decisions
- Strong reliance on capturing lessons but no system to define how to reuse it

Organizational manager's and decision maker's knowledge are largely tacit knowledge, and the existing KM practices do not tap this knowledge. Also, organizations largely believe in post-project reviews. For instance, large project-based organizations gather their core project employees to tap their project knowledge for standardization and re-use of the captured knowledge. However, these post-project reviews also have certain shortcomings. These include:

- Insufficient allocation of time to conduct post-project reviews/lessons learned

- No way to use learnings in same project, emphasis is on next project
- Data/information loss due to time elapsed to capture it
- No effective mechanism to transfer knowledge to non-project team
- Individual groups or departments or virtual organizations capture it, no collaborative approach.

While the existing KM practices and the present-day practices of capturing lessons learned through post-project reviews capture organizational knowledge and enable organizational learning, the shortcomings listed above are inevitable. Hence, the core idea is 'live' capturing of knowledge from organizational stakeholders.

Why "Live" knowledge capture?

- Allows to integrate learnings day to day while projects are in progress
- Can prevent knowledge loss due to time elapsed
- No stress on human memory
- Increases capability to learn faster than the competitors
- Stay ahead of rate of change imposed by external factors
- Probability of forgetting events can be minimized

Capturing of 'live' organizational knowledge can be catalysed through present-day digital technologies. Organizations can take advantage of the available digital technologies to leverage their existing KM practices. The next section covers these aspects.

Knowledge management and digital transformation

Digital transformation is rapidly broadening the range of technologies in use in the workplace. Organizations are filling with new devices, new platforms, and new types of digitally-enabled services. With the rise of the Internet of Things (IoT), many project and organizational processes are now underpinned by entirely new types of devices, frequently in areas of the business that were not previously digitally enabled. Big data systems drive new capabilities and opportunities. The data centre has moved beyond virtualization, to a new hybrid of cloud technologies. Smartphone devices are ubiquitous to access data and information anytime and anywhere. However, these transformations rest on an organization's ability to learn, unlearn and relearn through effective knowledge management.

KM involves the efficient handling of information and resources within an organization, which is an integral part of digital transformation. Managing knowledge provides clarity on the best means of acquiring knowledge, the mechanisms for producing new knowledge and how the learning process undertaken is integrated in practice. This is especially useful in an era where people are more digitally conscious than ever and are comfortable using multiple digital devices. KM helps identify what needs to be digitized. Digitization is the process of digitizing information from an analog format to a digital format. Put simply, it is developing a digital version of a physical artefact or process. For example, it may involve capturing data or information directly on a smartphone or a digital device rather in a physical form. Hence, an

important decision to be made here is to know what data and information needs to be digitized. Without such an understanding, integrity of data and information that is digitized may be incomplete, irrelevant, or incorrect. Also, it is known that the process of digitization yields positive results only when digitization has occurred correctly.

Most organizations misdiagnose a knowledge sharing problem at the implicit knowledge level and they build an intranet or deploy a file sharing solution in an attempt to address their issues. However, these systems fall short when it comes to capturing the context and discussion around explicit knowledge because questions and discussion still have to take place in a siloed system. To ask questions and collaborate, employees/teams still need to rely on chat, e-mail, and shoulder taps – which are not recorded for everyone's benefit.

This silo issue becomes worse when employees/team members are working in different locations and do not have the option to walk over to their co-worker's desk to get additional context or clarification. While dispersed teams may be able to access explicit knowledge, such as a process document or report, in a traditional intranet, it is harder for them to tap into the tacit knowledge of the subject matter experts who produced that content. This creates a gap in organization's ability to retain the tacit knowledge of their subject matter experts. As capturing tacit knowledge has become more important to organizations, artificial intelligence (AI) enabled digital platforms can provide that transformations. The intervention of AI is so necessary, and it can readily serve by:

Connecting to various data sources

Organization relies on information flowing in through multiple data sources. These may include the company intranet, diverse knowledge portals and the interactions and so on. An AI-based knowledge management platform can be integrated with existing enterprise systems to create a single source of knowledge wealth. As a result, employees can access data and required knowledge no matter where it is housed, even from a remotely located device.

Update the organization's knowledge repository in dynamic manner

Governance of organization's knowledge is another area of concern. AI enabled knowledge-sharing platforms could ensure that every record residing in an enterprise system is up to date. Any alteration or addition to existing data is incorporated into the system without entering a new record. This could have a massive impact on employee experience and business success, as every stakeholder is equipped with the latest data at the right time.

Utilizing predictive capabilities to simplify knowledge search

In a large organization with several verticals and business units, qualifying a search query could be a cumbersome task. An AI enabled knowledge-sharing platform leverages the predictive capability of AI to contextualize every query and promptly arrive at the relevant input. Natural language processing (NLP) lets users search for knowledge using the spoken language, and

machine learning algorithms predict the intended search results based on previous documents accessed and shared.

Knowledge engagement platforms make it easy for users to create content, add rich media for additional context, and find anything through a keyword search. Employees can engage in the platform by asking questions, adding comments, or even tagging subject matter experts so that they get notified that they were mentioned. Integrations with existing communication platforms such as Microsoft Teams/Slack is possible so that the valuable knowledge that employees/team members exchange in chat conversations can become part of their company's knowledge base – and so that employees can easily access existing knowledge in real time.

Implications for organizations

To have a real impact of KM on the way businesses are carried out in organizations, then it has got to be about making radical changes in the way organizations utilise knowledge (Sawhney et al., 2020). Following are some key considerations:

- Make KM as an integral part of strategic decisions on profitability and competitiveness at all levels of the organization. The linkages between strategic management and human value need to carefully examine the role of a KM orientation as an effort to support adequately successful strategies.
- As part of knowledge development, it is important that knowledge workers (subject matter experts and other experienced people) are included in a dynamic KM process. Such KM processes and knowledge workers should promote productive relationships between the organization, project, and its environment.
- Determine appropriate mechanisms such as an AI-enabled platform/system for the effective capture, transfer and leveraging of knowledge. As mentioned, communication infrastructure needs to be established within and between the different departments and business units.
- Create an appropriate culture for effective KM. There is a need to encourage the employees' autonomy, so that they may express and share the knowledge they possess in a 'free environment'. Knowledge mechanisms should not limit the potential for creativity and the questioning abilities that are needed to understand the challenges in the wider environment and may be a source of new solutions to problems.
- Determine methods for measuring the extent of KM effectiveness. Audit the knowledge present at, or accessible to, the organization and manage adequately the inventory of 'knowledge repositories'.

Conclusion

In summary, the digital transformation process is an ongoing process and the process is facilitated to a large extent by knowledge management. The two basic aspects of KM lie in identifying what to digitize, and how to digitize optimally. As organizations increase their knowledge management maturity levels, they can develop knowledge management strategies as listed above. These strategies support digital transformation processes for desired results to

be achieved. Finally, there also needs to be more targeted education and training programmes, which should create awareness about knowledge management and digitization processes.

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