Reconnoitring Artificial Intelligence in Knowledge Management

Aparna Vajpayee, K K Ramachandran

Abstract: This paper provides an overview of the interdisciplinary study of human cognition, psychology, knowledge management and artificial intelligence (AI). An effort has been made to comprise the relationship (KM) of human cognition, behaviour and organizational knowledge with Artificial Intelligence. It has also given a description of the application of AI in KM for organizational effectiveness and customer affiliation and e-commerce.

Keywords; Exploring the technology of AI in Management, Use of Technology in Knowledge Management, Artificial Intelligence and Technology, Artificial Intelligence and Knowledge Management.

I. INTRODUCTION

Artificial Intelligence (AI) is a common field of psychology, cognitive science, neuroscience and engineering which has wide implication in KM. We human being think, respond, reason and involve ourselves in reasoning and thinking. In order to bring all capabilities of the human mind in computer science, the study of human brain functioning with human behaviour has laid a foundation for the study of AI (Crowder,.and Friess, 2013). As to make computer effective to coordinate and work as a human being. In 1952 with the artificial intelligence studies have started as to how the human brain thinks, store information, segregate information, do relate or cluster and ultimately respond to perform(Rich and Knight, 1991). This is where the concept of human engineering come into existence which has laid down the foundation of AI with its wide implication in various areas of human knowledge. The functioning of the human brain in receiving information, coding into neural signal and transforming to coordinate with different functioning is widely studied and applied with human reasoning and problem-solving (Crowder,.and Friess, 2013). Managers and business leaders alike convinced that issues of technology, process, people, and content must be addressed to attain accomplishment. An organization should have technologically advanced to make progress, especially in the multinational global business environment of these days. In order to be successful, we need to pay more attention to the technologically equipped environment. Knowledge base of various organizations have defined that around one-third of the KM budget should be specifically devoted to technology (O'Dell, Elliott, and Hubert, 2000).

The elementary organizational element of KM is the community of practice (Brown and Gray, 1995), in that a collection of people who share a common field of expertise and/or who explore for resolutions to shared problems. This is how artificial intelligence has come into the area of KM to manage an enormous spectrum of IT world.

II. PHENOMENA OF STUDY

Artificial Intelligence, Human Cognition, Psychological Processing and Knowledge Management

By means of AI mechanism which can help to automatically think, learn and accommodate and accumulate experience for autonomous functioning was largely a vital goal for Computer Science. For which the study of human cognition and the process of information in the brain was studied scientifically to accelerate information base similar to human cognition and brain. As psychology is also the science of understanding of mental processes and behaviour so in order to establish machine system similar to human cognition it has become an important and indispensable foundation of knowledge to advance AI or machine intelligence. The entity of human cognitive processes was required to correlate autonomous self-developing learning and intelligence. Therefore, the study of psychology had several spheres to focus on the study of AI. The study of cognitive psychology was accomplished to know how the brain thinks and works.   This comprises perception, learning, memory, language, logic, decision making (Daróczy, 2010) etc. Along with that, developmental psychology helps to know how a person adopt, acclimatizes and changes through subsequently in various developmental stages and what is suitable to contemplate as a human base on development (Friess, 2010, Diapera and Sanger, 2006, Crowder, and Friess, 2013). Thus, AI must caricaturist human cognitive processes in order to be intelligent like the human brain to process the information. Ultimately the human brain and cognition are in the top of the spectrum of AI to implement and to be admirable.

As KM is a field of processing creating, sharing, using and managing the knowledge, therefore it is having the wide implication of AI with its multidisciplinary approach in achieving organisational resolutions by assembling the best and right application of knowledge for the organizational effectiveness.

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  Aparna Vajpayee, Galgotias University, Greater Noida
  K K Ramachandran, GRD Institute of Management, Coimbatore

Relationship of Brain Functioning---Human Psychology--Artificial Intelligence-- Knowledge Management

| Brain Functioning (Processing of information in the brain) | → | Human Psychology (learning, memory, perception, language, logic, decision making etc.) | → | Artificial Intelligence (Imitating the human brain for autonomous functioning) | ⇄ | Knowledge Management (Processing, adopting, creating, sharing, using and managing the knowledge) |
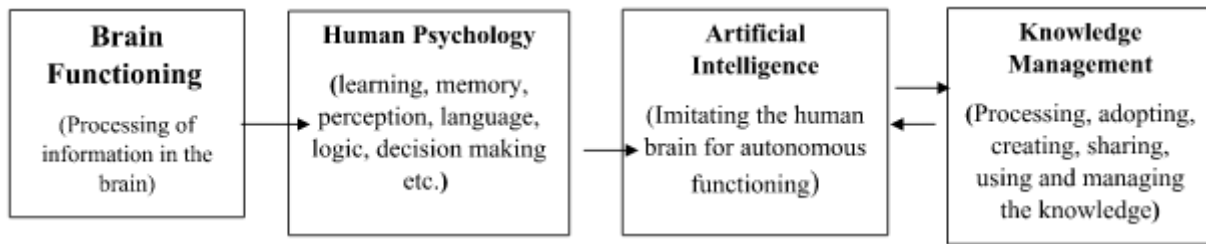
---**Processes**-----------------------------------

The relationship of KM and AI has led an interdependent existence with a basic foundation of brain functioning and human psychology (Crowder,.and Friess, 2013). Using computerized models for the adoption of human thought processes for knowledge which imbibes in self/deep learning of artificial neural network software similar to human brain, that customise text/data mining, pattern recognition and relate to natural language processing to mimic the way the human brain performs. Hence, AI computing is leading the ways for forthcoming applications imbibe with brain functioning in human psychology and KM (Rich, Knight,1991).

During the last few decades, it has been realized that people or human capital contribute more to the success of the organization as compare to   asset of organizational life. The KM (Weber, and Kaplan, 2003) is a compilation containing methods of gathering, managing, capturing and using knowledge, both explicit and tacit. Explicit knowledge (Staab, Studer, Schnurr, and Sure, 2001))is the knowledge that can be readily articulated, codified, accessed and verbalized. It is easy to transfer this kind of knowledge to others. This kind of knowledge is mostly available in some writing storage in the form of a book or encyclopaedias. Another kind of knowledge is known as tacit Knowledge which is difficult to transfer by means of writing and verbalizing. Thus, KM is also of many phases, in the first phase the source of information is from the outside of the organization and it comes in the form of employee. It is also significant to display a role of metadata, which establishes methods of obtaining knowledge and present the best practice in generating knowledge (Milton, Shadbolt, Cottam, and Hammersley, 1999).

Artificial Intelligence and Knowledge Management

AI and KM both are multidisciplinary in nature which comprehends psychology, epistemology, cognitive science, management and computer science. The aim of KM are to empower individuals and organizations to cooperate, involve, collaborate to generate, practice and re-practice the knowledge. Thoughtful acceptance of KM is leveraged to enhance performance, increase innovative new ideas to expand which is commonly accepted from both individual and organizational perspective.

KM and AI at its fundamental unit are about the information. AI delivers the mechanisms to allow machines to acquire learning the knowledge base provided by KM. Wherever AI lets allow the machines to obtain, acquire, process and utilize information to perform the tasks and to reveal or unlock the knowledge which can be delivered to humans to improve the stretegic decision-making process. Hence, AI and KM are just two edges of information linked with each other. KM make the foundation of knowledge to inspire and AI utilises, expand, and generate that knowledge to use in a varied spectrum of application (McGuiness and Wright,1998).

According to a 1997 Ernst & Young Center for Business Innovation 1997 survey entitled "Executive Perspectives on Knowledge in the Organization," the biggest obstacle to information transfer is corporate culture (54 per cent), and the major difficulty in management of knowledge is frequently changing people's behaviour (56 per cent) (Bock,1998). An organization should motivate innovative ideas and allow the organisational members to members to share all ideas which they know and share the knowledge for the usage of everybody in organization. In conclusion, validated and trusted content is vital. We can elaborate knowledge as "interpreted data" and information as "information in action" or "information transformed into capability for effective action." (Fisher, and Ostwald, 2001). Nevertheless, we reside no additional on distinctions among the two. Relatively, the idea that such distint classification do not offer much in useful way, at least in the first few phases of KM implementation and acceptance in an organization, Davenport (1998) and O'Dell, Elliott, and Hubert (2000).

Knowledge Management E-Business and Artificial Intelligence

E-business and e-commerce have created lots of possibilities and opportunities along with risks which can be judgmentally recognized prior adopting as a strategy with the help of KM. AI helps to identify risk mitigation. AI with KM

leveraging knowledge base as a successful strategy in the area of e business as with present day economy (Jutla , Craig and Bodorik , 2001).E-business strategy has tremendous challenges to well-organized and efficacious sources of KM to adopt and enhance with AI (Hackbarth and Kettinger 2000).

Knowledge Management, Internet Marketing and Artificial Intelligence

These days due to internet marketing and application of e-commerce, marketing and sales strategies are a big part of AI-based strategic thinking and decision making. AI is having the vivacious role of in building (Creating) e-business strategies with a wide application of Information Technology (IT) project. Internet technologies based on AI provide support system to the organization and give competitive advantages with numerous configurations of its accessible resources to meet the requirements of the marketplace and customers, it also provide support to the "Customer Relationship Management" (CRM) and consecutive service of "Supply Chain Management" (SCM) (Hackbarth and Kettinger 2000).

Organizational Knowledge and Information base is one of the significant mechanisms for developing a effective e-business stratagem project in any firm, as it encompasses data, information along the set of knowledge possessions about the firm. Therefore, organizational requirement is subject to on and use this source as an basic step to perform some of the strategic tasks effortlessly, precisely and proficiently. "Creating e-business strategy based on four stages: 1) Initiate, 2) Diagnose, 3) Breakout and 4) Transition" (ALhawamdeh, 2007).

A KM platform delivers an easily available place for value proposition and it also related sales collateral–to be live. Admission to a KM platform helps in getting the correct knowledge in for the right people at the right time. If anybody is having a new question, they can upright it to the KM system to get a solution from officials or other top salespeople. Moreover, with the help of AI, the answer to that question is on their strategic reply mechanism, the person who require that knowledge can do a quick exploration and assess all alternate resolutions.

Artificial Intelligence and Knowledge Management in Getting Organizational Sale Values

The application of AI also helps to have a clear idea about the companies' value position. As it helps to do a strategic analysis of the competitors and thus organizations can have their unique offers to costumes along with their competitors. Mike Kunkle, a training leader with a Fortune 50 corporation, elucidates "that spin is often deeply understood by a handful of people in marketing or maybe a handful of people in sales leadership, but it's not always clearly communicated throughout the sales organization. There isn't always consistency in messaging around the value proposition." (McGuinessand Wright, 1998).

A KM platform base with AI delivers an effortlessly reachable place for their value proposition–and related sales insurance–to accomplish. The value position of a company can be made easy to obtain and to comprehend and apply in primary identities to mark the sale values (McGuinessand Wright, 1998).

Use of Artificial Intelligence in Knowledge Management for Target Costumers

AI plays an important part in to understand the main challenges of focused costumers faces. Search engine based on KM and AI help to know prospective costumers and their

preferences by creating relevant content of choices to them for attracting the sale. This also helps the sales team to take advantage of focusing on target person mainly based on the content of knowledge created by AI. This also helps to create content to compel the sales to lead (Brynjolfsson, Urban, 2001). Which creates a big opportunity for sales and customer related demand fulfilment. AI helps to get the KM system to make a certainty of the sales team as they know the details of the target population with a better understanding to target and achieve.

AI and Knowledge Management with other Organizational Application

AI with KM enhance the IT skills in business with an overall spectrum of an organization such as serving customers/suppliers, recruitment and training need analysis, future prospects of the business with both tangible and strategies solution. Along with this, it also helps to succeed "management relationships electronically (e-CRM), managing all supply activities till delivering products/services to customers (eSCM), internal communication between employees and external collaboration with other business partners" (Brynjolfsson, Urban, 2001). It also support in shared factors for common work of various hierarchy of management and organization subdivisions, the collective factor which integrates them together is information or knowledge.

As an instance, customer's satisfactions feedbacks will linkage to the marketing department and to the production department. Thus, it attaches the tasks between individuals, departments, and organizational levels and interorganizational level.

Artificial Intelligence and Knowledge Mangement Organizational Decision Making

With the usage of information technology, knowledge gathering has advanced and many organisations are suffering with the problem of information overload which often creates problem in segregating the information for problem-solving and decision making in an organization. AI is extensively applicable for synchronizing organizational knowledge base with mining of data to take strategic decision-making partners (Brynjolfsson, Urban, 2001). The process by the elaboration of a sequence of information in a given manner;

Relationship of Artificial Intelligence with Knowledge management in Decision Making

KM for present customers and suppliers helps the organization to keep update their requirements (Declarative Knowledge), with the benefit of the internet technologies as AI based KM tool such as search engines, also enable the firm to obtrain more new information about the existing market competitors, demands, customer's demographics, new customers' competitors, etc. (ALhawamdeh, 2007) which make a base of behaviour knowledge.

III. CONCLUSION

KM has got widespread acceptance by many chief executive and officers (O'Dell, Elliott, and Hubert 2000; O'Dell et al. 2000) for the substantial growth of the organization. Despite excitement application which has been described "peak of inflated expectations" and the "trough of disillusionment" and is moving up the "slope of enlightenment" on the Gartner Group maturity curve (Brynjolfsson, Urban, 2001). AI application in KM always helps to add value advantage by giving automation very much like the human brain (Brynjolfsson, Urban, 2001). AI community is continuously working to give a more precise application in synchronization of information for the better decision-making process (Brynjolfsson, Urban, 2001).

Knowledgebase stores of information are well managed, organized, filtered and captured, to be assessed and save them as information for knowledge base, along with this it store all information that is associated with other organization's strategies of advertising policy and Information System in relation to other organizations strategy (Brynjolfsson, Urban, 2001) for more effective strategies of organizational effectiveness. Knowledge repository with "AI simplify the information for workforces to access, save, retrieve, and unify all knowledge" (Brynjolfsson, Urban, 2001).

This study has established the importance and vital roles of KM and AI in e-business strategy, that are soul concerns for knowledge managers involved in creating and creative effective KM systems with the application of AI. Along with this innovation and global competition have enforced the organization to

implement new strategies to capable the real-time optimization of the value chain. "Building e-business strategy and plans should be derived from the business objectives, culture, policy, and current strategies (knowledge resources)" (ALhawamdeh, 2007) in a wide spectrum of AI. As a consequence, AI community is translating more and more cognitive aspect of the human brain to apply on the knowledge base for best and precise decision making and we are waiting for further 9more advanced use of it with the application of human psychology.

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