

A Study On Knowledge Management In Mechanical Engineering

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ABSTRACT

Knowledge management is a systematic tool of generating knowledge, vindicating knowledge, communicating knowledge, transmitting knowledge and implementing knowledge. This paper explains knowledge management in general. Then implementation of information management was sought to explain in engineering. The paper suggests information management achieve optimal regulation and to take competitive advantage of machining systems. The manager and administrator can use this model to take competitive directives.

Keywords: Knowledge Management, Mechanical Engineering, Machine System, Competitive Advantage,

INTRODUCTION

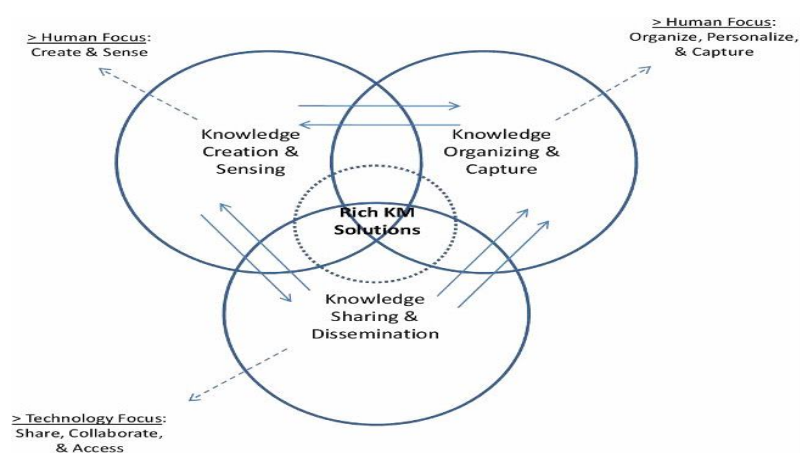
In the knowledge based economy and society, activities such as the determination of pertinent information and the consolidation into sections of knowledge in a wisdom society and economy need to be outsourced because they are essential instruments for generating researching and implementing knowledge in such complicated and unexpected environments. Knowledge Management has always been an efficient way to manage intellectual capital or, in other words, the complete knowledge, skills and know-how of the company that is important for the future productivity. There are two techniques in KM— tracking individuals and tracking knowledge management in information technology. (Sveiby, 2000) The validation of the essential for knowledge management may well stimulate enterprises to comprehend and nurture the understanding and operations. Knowledge management has since its creation taken on a broad

range of meaning like the connection between economic conditions and the production system constitutes a primary source of knowledge of the economic environment and the production system itself. Therefore, a knowledge management system is essential in order to prevent cost increases, time losses and increased error.

Execution of knowledge management is a strategic competitive advantage for the company. The valuable information and knowledge will be used both in corporate management and for designing new products and services or making significant improvements in the company's activities. Nevertheless, certain programs in organisations have frequently come into trouble, primarily due to the growth of individual tacit knowledge through knowledge about the entire organisation.

The key objective of KM is that best protocol should be shared. The following advantages can therefore be achieved by enhancing the stream of understanding through the company, for example, the sharing of best practices all over company processes in order to more efficiently react to customer requests. Secondly, big ups to the technology that allows the rapid sharing of information, the rates of takeover in large and small businesses are growing exponentially. The enormous quantities of information available to companies are distributed over numerous organized and unorganized sources, and eventually to improve mechanisms and bringing new products to the industry more rapidly and cheaply.

The Knowledge Management Process Model



Source: **The Knowledge Management Process Model by Botha et al (2008)²**

This model attempts to offer a more realistic overview of the KM process. The three broad categories overlap and interact with one another. Like Gamble & Blackwell, the focus is on managerial initiatives. Here too the strategic focus (the "when" and the "why" as opposed to the "what") is omitted. It is noteworthy that this model does include the creation of new knowledge as a specific KM initiative. The model further shows which of the three categories are more people oriented and which are more technology focused. Whether or not knowledge sharing should be largely technology focused is certainly debatable and it is something that I will address in future sections. However, for better or for worse, this is largely how organizations tend to approach the issue i.e. as a technological rather than organizational and social challenge.

We have now looked at three models that take very different approaches to KM. There is one other important aspect relating to KM that has not been directly dealt with by these models. I am referring now to the measurement of effects that lets management know whether the implemented initiatives are achieving the desired results. This is dependent upon data and information management, but is paramount for future KM initiatives¹.

REVIEW OF LITERATURE

Lytras et al. (2002) The study indicated knowledge management as a widespread, specific and knowledge application that help entities to optimize the efficiency and recovers on knowledge assets of organizations. It also generates new capacity, encourages creativity and efficiency and increases customer satisfaction. This allows the management of knowledge to be described as the process of knowledge gathering, storage, sharing and use.

Jean-Baptiste P.L. Faucher, (2008) To order to emphasize the importance of developing better viewpoints, a progressive view of conventional hierarchical structures is proposed. This paper shows the integrative character of data, information, awareness and knowledge, and how all are predicated on an analysis of existence. They found new E2E model, which emphasizes non-linear relations among nature, data, information, awareness, knowledge and enlightenment, as well as the nature of the knowledge as the system that defines the discrepancies between these structures, are objectively expanded to take a complexity-based perspective.

Apurva Anand and M.D.Singh(2011) in their study analysed a systematic review on knowledge management (KM) describing different colloquialisms and aims to explore the area of knowledge management in another way, to investigate the present position and to evaluate the key developments, agreements and contradictions between scientists and practitioners. It generates a higher level analysis of several key concepts, concepts, classical definitions, and principle that are critically examined and emphasised by knowledge management. Knowledge management approaches are discussed and their similarities and discrepancies are addressed.

Roberto Cerchione, Emilio Esposito (2016) This article gives a literature review of knowledge management in small and medium-sized enterprises (SMEs) and small and medium-sized companies' channels. The primary objective is to emphasize administrators of the state-of-the-art Knowledge Management to identify the appropriate research gaps. The analysis emphasizes that the pattern of papers on the subject has been through in recent years and includes many methods, techniques and models of diverse fields of research. The overwhelming majority of articles studied focus on the KM topic in SMEs, while in small and medium-sized networks, there were only few articles analyzing Knowledge Management. The review of the articles shows six research fields through which ten research questions are based, which cover three aspects: the KM factors, the KM's effect on company performance and the KM systems of information management.

KNOWLEDGE MANAGEMENT IN ENGINEERING

Knowledge based engineering is a process of information technology where knowledge of the product and the techniques employed in layout, assessment and production are stored in a unique product paradigm. The discovery of knowledge in data sets means the semi-trivial system for pinpointing data trends that are valid, new, incredibly useful and eventually understandable. In wide-scale datasets it can obtain tacit and useful understanding and involve the integrity of various subjects, like statistics, artificial intelligence, machine learning, pattern recognition etc. Data base knowledge has been successful in commercial fields and has started to be used for engineering knowledge acquisition of engineering disciplines.

Information collection, information pre-processing, data transformation, data mining analysis and assessment are part of the overall information exploration in database processes. It is

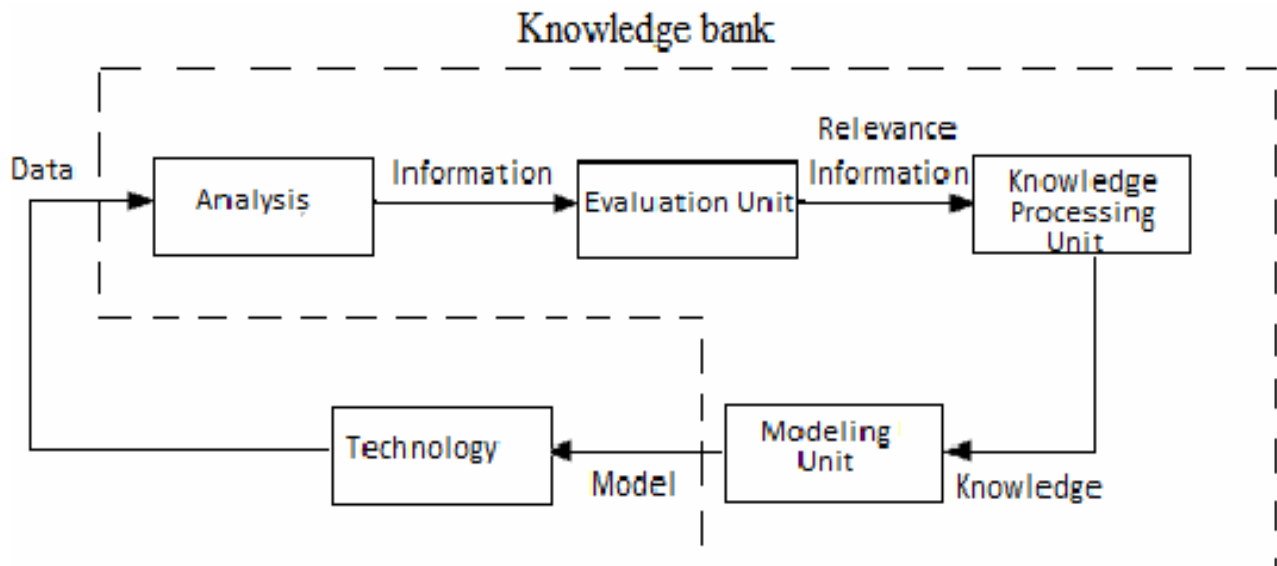
difficult to define details, knowledge and expertise. Data, information and knowledge may be distinguished on the basis of unconventional means or from the consumer perspective. Information shall be seen as straight facts, knowledge shall be treated as an ordered set of data and information shall be seen as important information. Data comprises of signs describing items, events and properties of objects. Data is useful information. Who, what, where, when and how many questions are answered.

Information is useful to decide what to do rather than how to do it. Knowledge consists of guidelines and expertise. How are questions addressed by experience. More than data is intelligence. Data are organized into relevant trends. Data Knowledge is converted into awareness by the learning, comprehension, perception and application of knowledge in a particular work role by someone or an information system. Knowledge of one individual or intelligence system may be data of another person or intelligence system. It stays just data, when it cannot be applied to nothing. However, an individual can collect, comprehend and perceive this information in the framework of previous experience, and apply to anything, it is transformed to knowledge¹⁰.

Throughout technology, knowledge is increasingly important. Information, data and expertise are not suitable for traditional use. That's the abstract confusion. In addition, the interaction between different disciplines requires today's technological products. This raises the uncertainty. Each discipline contains information that is special to the process in the multidisciplinary engineering framework. Most data, however, is basically identical even if it is demonstrated in various disciplines. The information given should therefore be assessed, streamlined and converted into a usable and knowledgeable form. The knowledge is then coordinated and linked to. Next, the process co-ordinates and integrates the data. For the technical item, a form of know-how is thus acquired. This case is typically based on a design, although it has special features. In the following section, an example of the machining system was analyzed.

The model created by technical knowledge that the data, information and knowledge are interacted, organized and applied to the technology process. Below is the KM model. KM is an important mechanism for knowledge creation, validation of knowledge, knowledge introduction, dissemination of knowledge and application of knowledge¹⁰. When the company applies the KM

model to its manufacturing process, the quality of the product is increased. This KM model can be used at all stages of works such as development, production, repair and maintenance. This is KM model.



Source : **D. Ghelase et al 2011**

CONCLUSION

Knowledge has become increasingly important today. Even data, information and knowledge are often used to mean the same. This question causes technological difficulties. In order to avoid increased costs, waste of resources and increased inaccuracies, a knowledge management system is required. Knowledge-based engineering is an engineering approach, using a specific product template to store knowledge of the product, the techniques used in design, evaluation and manufacturing.

Today, awareness is more and more relevant. Even the same is often used in records, information and knowledge. This topic raises technical problems. A system of knowledge management is necessary in order to avoid higher cost, waste of resources and increasing inaccuracies. Information-based engineering is a technology approach, using a product model in which the product information, design, evaluation and manufacturing techniques are stored.

To achieve these objectives, the competitive management uses the reinforcement learning to get to know the market and the unsupervised on-line learning technique to get to know the machining system. Note that researcher propose to give managers a knowledge management model, so that they can interact with the economic environment market. This knowledge management model represents a technical-economic model that can be used for competitive management of the manufacturing process without requesting experiments and based on the extraction of the knowledge from the previous experience.

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