BENEFITS, BARRIERS AND SOLUTIONS OF KNOWLEDGE MANAGEMENT

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ABSTRACT
While the main objectives of knowledge management are to safeguard an organisation's intellectual capital and protect employees' intellectual property, the effort of capturing knowledge will in turn ensure that valuable information is transferred and used by another worker at the right time, resulting in the increase of employees' independence, innovativeness, performance and productivity. These will then be translated in terms of increase in sales, revenue and shareholder value. However, there are barriers to knowledge management. Knowledge management requires change and expertise. Change has to be implemented within allowable time and cost constraints. Encouraging employees to share their knowledge with others requires incentives. The use of technological and psychological aids would help ensure the effectiveness of knowledge management practices.

INTRODUCTION

It has been said that knowledge is power. However, the power of knowledge can only be realised when the knowledgeable person is willing to share it with others. Sharing knowledge is easier said than done. Knowledgeable persons or the so-called knowledge workers will often refuse to share their knowledge with others since they regard it as part of their personal belonging. They are not alone. Even top-level management declines to promote the importance of sharing knowledge with their employees because of time and cost constraints, lack of expertise and more importantly, the unwillingness to undergo tedious changes. Their reluctance is understandable, and resistance to change is expected, especially among the experienced and the more senior personnel. To be effective, the changes should affect not only the procedural norms and culture at the work places, but should ultimately affect the corporate set-up of the organisation.

In spite of these hindrances, organisations and firms still aspire to gain the highest profits. The means of achieving the target is from the ideas of thoughtful managers and CEOs. An innovative way to obtain the highest profit is by applying knowledge management practices, which represent a departure from traditional management practices.

It comes as simple as this. When knowledge workers document their valuable knowledge in the storage devices of computers, their knowledge can and will be accessed by other employees in their firms. These employees will make use of this information for various purposes as required in their job tasks. Just by clicking the 'mouse', for instance, a manager will know his or her organisation's annual profit and market growth without having to meet both the organisation's financial controller and marketing executive who might not be available at the critical moment when they are most needed. Besides, if knowledge is carefully managed and effectively utilised, the question of 'who is to be blamed' will not arise.

Nevertheless, the significance of sharing

knowledge is not so obvious to some firms, organisations and employees. The value of wine is said to increase with age, and analogically, positive relationship also holds between the value of knowledge and the extent of sharing. The more knowledge is stored and shared, the higher will be its value to organisations. However, if sharing of knowledge is regarded as an obstacle, how can firms and organisations preserve it (knowledge)? In relation to that, there is a growing realisation that the application of knowledge management has barely taken off the ground, and there is an urgency to increase the pace. It is in this context that the present paper looks at the benefits, barriers and solutions of knowledge management.

More specifically, the study seeks to clarify some of the basic values and problems in the area, and also suggests several approaches to encourage the implementation of knowledge management. Both are relevant points to the main theme.

DEFINITION OF KNOWLEDGE MANAGEMENT

Knowledge management is defined as sharing tacit and explicit knowledge among knowledge workers within an organisation. Tacit knowledge is the knowledge learned by experience. Explicit knowledge is factual information that acts as intellectual capital of the organisation. Knowledge workers are seen as the organisation's staff who possess information that can create value to the organisation by enhancing customer satisfaction. Knowledge management thus refers to managing intellectual resources and includes improving efficiency in meeting client and customer needs.

Hence, knowledge is a form of intangible asset. It is classified as the intellectual property of employees and the intellectual capital of organisations. Consequently, the need to store and share knowledge within an organisation and keep abreast with the latest technology gives the management department and CEOs the responsibility to manage the organisation's intangible assets such as intellectual property and intellectual capital from being abused by illegal outflow. While there are procedures and regulations to deal with such abuses, knowledge management also provides incentives to employees who are willing to share and use knowledge effectively to enhance the profitability of the organisation as well as to advance the organisation's overall mission.

McInerney (2002) defined knowledge management as an effort to advance the organisation's mission by making accessible and sharing both explicit factual information and tacit knowledge that exist in an organisation. Tacit knowledge is usually based on the experience and learning of individual employees. The eventual goal is to share knowledge among workers in the spirit of learning, renewal and innovation. In order for knowledge to be shared, it must be in a form which others can have access to, thus portraying knowledge management as a new network-based system. In her article, McInerney (2002) did not elaborate on knowledge management precisely. Like the tip of an iceberg, her superficial treatment of knowledge management does not provide a fair comprehension of the various aspects of the subject such as the methods or ways of sharing knowledge among knowledge workers in an organisation.

In line with the definition, Barth (2000) emphasised that knowledge management refers to the practice of harnessing and exploiting intellectual capital to gain competitive advantage and customer commitment through efficiency, innovation and more effective decision-making. He also stressed that knowledge assets need to be managed for the greatest possible return on investment. He defined explicit knowledge as codified information that is regarded as the property of the firm. Tacit knowledge is the property of the knowledge workers and is difficult

to be transferred since it is in people's mind. Barth was able to explain knowledge management and related it to the business organisations of today in the easiest way to be understood even though he did not provide ways of managing knowledge.

BENEFITS OF KNOWLEDGE MANAGEMENT

Safeguard intellectual property

Knowledge management is an aid for organisations to manage their intellectual resources. Organisations can safeguard their intellectual capital, and thus protect the employees' intellectual property. One of the popular ways of applying knowledge management practices is by transferring knowledge among knowledge workers within their organisation using computer input devices. The effort of capturing knowledge will ensure that valuable information is transferred and used by another worker at the right time, resulting in the increase of employees' independence and innovativeness, performance and productivity.

According to a report by the Chartered Institute of Management Accountants, intellectual capital can be seen as the possession of knowledge, applied experience, organisational technology, customer relationships and professional skills (Anon., 2002). The report further explained that intellectual capital statements are used as an internal knowledge management tool, as a mechanism of improving relationships with different stakeholder groups, for personal development and to construct a "true" value of a company. The report did not establish a strong relationship between knowledge management and intellectual capital. Furthermore, it did not provide information on ways to manage intellectual capital.

According to Clarke (2001), the OECD (Organisation for Economic Cooperation and Development) highlighted that know-how and know-who knowledge are more tacit and difficult to measure even though they are the most valuable knowledge to be possessed. Knowledge management enabled firms to share and combine elements of know-how. Clarke (2001) further mentioned that the strategic business drivers of knowledge management are concerned with how to protect and develop intellectual capital of the company, improve performance, sustain intelligence, enhance learning and promote continuity in innovation. He related knowledge management to strategic business and knowledge economy.

Consequently, according to Zimmermann (1998), Jim Hickey (Vice President of marketing for Authentica) stated that intellectual property is a vital asset that needs to be protected and managed. In order for the intellectual property to gain value, it has to be shared. Sharing knowledge among departments within an organisation can reduce or eliminate potential disasters in publicising the information. The applications for knowledge management systems help safeguard intellectual property.

One of the areas of growth in intellectual property management is in using knowledge management systems to manage the internal process of bringing an idea for a new product or other innovations from concept to fruition. Zimmermann (1998) is able to provide examples regarding the importance of safeguarding intellectual property by applying knowledge management system. However, she did not report on the impact of knowledge management on the organisation as a whole.

Increase in revenue and shareholder value

An organisation is said to gain benefits in terms of increase in revenue and shareholder value. This can be achieved by transforming enterprise knowledge into profitable ideas, products and solutions. A survey done by MAKE (Global Most Admired Knowledge Enterprise) proved that organisations devoted to growth through innovation and knowledge management created

shareholder value twice as fast as their competitors (Teleos, 2003).

Perrin (2001) followed a similar approach in formulating her views on the subject, and thus agreed with the axiom that knowledge is power. The aims of knowledge management practices are to improve efficiency in meeting client or customer needs, enhance customer satisfaction and increase revenue. Financial services organisations are aware of the need to use the knowledge properly since knowledge is both valuable and dangerous. George Kalorkoti (managing director of Lorien) stated that knowledge management could have great benefits for the institution and the customer in that it makes far more information readily available more quickly and more cheaply. In addition, Geoff Smith (European Head of knowledge and content management services at Cap Germini Ernst & Young) stated that knowledge management helps organisations to speed up their time to market products or services. The author gives various examples regarding the impact of knowledge management in industries. However, she did not provide ways to overcome knowledge management hurdles.

Increase in sales

In addition, knowledge management is said to contribute to increasing sales. It is very difficult for the sales force to customise products and services according to customer wants and needs in the market. Thus, with the help of knowledge management, everything is possible. A knowledge management system can help the sales force to better understand the potential range of offerings and how they can be customised. In addition, expert databases can give them access to others with knowledge of particular customers, industries, or technology applications to draw on for insight during the sales process.

For example, in order to integrate and make useful information from 35 acquisition companies, Platinum Technology (a software company) created Jaguar, a web-based pool of knowledge that is comprised of 82 Lotus Notes databases and 13 intranets. The system houses information that is central to Platinum's business, which includes competitors' prices, customer profiles and corporate travel policies. Jaguar has become a vital tool in supporting its sales force. Platinum Technology has gained 6 million US dollars worth of sales in the first year of the implementation of Jaguar (Myers, 2001).

BARRIERS TO KNOWLEDGE MANAGEMENT

The need to undergo corporate, cultural and procedural changes

Problems come to the fore when many organisations nowadays are not adopting knowledge management practices in their organisations even though they have realised that knowledge management is beneficial to them.

Their objections are mainly based on the need to undergo corporate, cultural and procedural changes as well as to build a pool of personnel with the necessary expertise (Fluss 2002). Before practising knowledge management, rigorous organisational self-assessment must be performed to ensure the readiness and acceptance of employees towards the changes made by knowledge management. Moreover, Mason and Pauleen (2003) stressed that the major barriers of knowledge management lie in three aspects, namely, organisational culture, leadership and lack of awareness of knowledge management. Although Mason and Pauleen were able to provide extensive findings on the barriers of knowledge management, they did not discuss the underlying reasons for the existence of knowledge management barriers.

Time and cost constraints

Time and cost constraints are regarded as further impediments to knowledge management. It is expensive to integrate KM technology. Fluss (2002) noted that traditional KM vendors such

as Primus and ServiceWare offer feature-rich and mature KM offerings with advanced workflow, authoring, editing and publishing capabilities. However, their products are expensive, difficult to use and time-consuming to implement.

Reluctance of employees to share their knowledge

The reluctance of employees to share their knowledge with others will place further hindrances to the practices of knowledge management. Their fear is not without basis. When an organisation is downsizing or when there is rampant job hopping among knowledge workers, outflow of useful information will occur in the organisation resulting in the intellectual property of the affected organisation being compromised. Zimmermann (1998) mentioned that one of the biggest problems in managing intellectual property is getting knowledge workers to document their ideas. Experts agreed that forcing knowledge workers to fill out online forms should be ruled out.

Deriving extensively from the text, Williams (2001) demonstrated some empirical data on knowledge management practices. A survey showed that the implementation of knowledge management processes and techniques within the business and managerial sector is immature. In particular, nearly 30 per cent of the companies covered have no plans to implement knowledge management in their organisation. He agreed that financial institutions would have to face the risk of drowning in information and being left behind by those who are leveraging on knowledge. The article was more concerned with the impact of knowledge management on financial institutions. He did not elaborate on the other aspects of knowledge management i.e. organisational culture and intellectual resources.

SOLUTIONS

Several solutions have been suggested in order to encourage the implementation of knowledge management in an organisation. The solutions suggested are technological aids, easy to use knowledge maps and organisational tools, cooperation between top and middle level management and incentives.

Technological aids

Some technological aids to manage knowledge must be given their due consideration. Technological aids such as electronic voting, intellectual capital accounting system, document management system, Cognos PowerPlay and Applix TM 1(business intelligence software) can be used to ensure the effectiveness of knowledge management in an organisation.

Coates (2001) introduced electronic voting. Electronic voting has the benefit of anonymity. The top echelon that gives a talk to a group in his or her unit using an electronic voting capability will get instant feedback pertaining to his or her employees' reaction towards the talk. Electronic voting could change laboratory life and facilitate openness central to knowledge management. However, Coates limits his survey coverage to England and America.

Business intelligence software such as Cognos PowerPlay and Applix TM 1 can enhance knowledge management practices (Stimpson 1999). The business intelligence software pulls data from old legacy databases and puts it into Applix's multidimensional TM1 database on a server. Then, it allows an unlimited number of users to browse that database simultaneously using either Microsoft Excel or Cognos Power Play as a browser. End users have the ability to easily navigate data and visualise trends because the data are presented and organised in the form of charts, tables and figures.

The software insulates end-users from database complexities and allows them to focus on value-added analysis. Moreover, managers are able to access, explore and analyse mission-critical data for faster decision making, resulting in increased productivity and profitability of the

organisation. Although Stimpson did emphasise the importance and usage of knowledge management in the company, he did not address the issue from other management perspectives.

The application of document management system may be considered as the current solution to store knowledge in a company. The use of Microsoft SharePoint will help users to search accurate information and aggregate data from multiple data repositories and file formats. Interwoven's Collaborative Document Management Solution (CDM) provides teams and groups with the ability to share and leverage the knowledge contained within business documents. This is important in order to ensure that the right document is available to the right person or team and at the right time from an Internet browser. Xerox FlowPort integrates various paper-driven devices (faxes, photocopiers, etc.) into groupware, e-mail and document management. Xerox DocuShare is a Web-based document management system that allows users to post and retrieve information in any format (text, scanned images, video clips, MS Office documents, sound files and executables).

Documentum 5 supports all content types, including traditional documents, XML, Web content, and rich media and also allows end-to-end encryption for data communication and data storage, and secures content with solutions such as digital rights management and records management. Lotus Discovery Server generates and maintains user profiles and tracks relevant end-user activities, identifying those individuals who may be subject matter experts, and creating an organisational knowledge map (Lindvall *et al.*, 2003). However, Lindvall *et al.*(2003) did not discuss the drawbacks of these tools in knowledge management practices.

Easy-to-use knowledge map or navigational tools

Stuart (1996) and Fluss (2002) suggested several ways to overcome obstacles of knowledge management such as easy-to-use knowledge map or navigational tools. There is also a suggestion on fast attempts at knowledge management that are believed to reduce serious information overload. They also suggested that the information must be accessible and available everyday enterprise-wide.

Cooperation between top and middle level management

Cooperation between top and middle level management in an organisation is imperative in managing knowledge. Stuart (1996) pointed out that the creation of an effective knowledge management system must be supported by cultural perspectives such as by creating supportive and collaborative work culture and eliminating traditional rivalries in the organisation. The management department should try to discourage the old axiom of "knowledge is power" in the employees' mind, the influence of which will result on knowledge being treated as their personal belonging. Managers must show the benefits of knowledge management practices to their employees so that employees believe that cultural change is necessary. Moreover, there is also a need to provide trust, sharing, communication and a supportive organisational culture in order to enhance the application of knowledge management (Mason and Pauleen, 2003).

Incentives

Scott (2001) highlighted that in dealing with the reluctance of workers to share their knowledge, the management department need to look from the psychological point of view. An approach to be considered is through incentives. Incentives or rewards are given to those workers who are willing to share their knowledge and penalise those workers who fail to cooperate with the organisation. The approach suggested by Scott (2001) is in line with the old theory developed by B.F. Skinner.

Skinner developed a theory called operant conditioning. Operant conditioning is defined as a type of conditioning in which desired voluntary behaviour is a function of its consequences. People learn to behave to get something they want and to avoid something they do not (Robbins 1998). This means that employees who are willing to share their knowledge with others are being rewarded and avoid being punished or penalised. Scott's article is more concerned with knowledge management in psychology and the technical perspective rather than from the management perspective.

Thus, even though there are some negative impacts of knowledge management, the benefits of implementing knowledge management must be given its due consideration. It is widely recognised that only knowledge management can store workers' knowledge and safeguard the organisation's intellectual property in the most effective way to be used by others in the future. Hence, the aforesaid measures to overcome the pitfalls of knowledge management must be implemented.

SUGGESTIONS FOR FUTURE RESEARCH

This article is an attempt to shed further light on this ongoing investigation. The new strategies for managing knowledge represent a significant departure from traditional management orthodoxy. There is a small, but growing cluster of researches that specifically focus on managing knowledge in management perspectives and its relationship with the macro and microenvironment of an organisation. Specifically, the paper aims to encourage further research, debate and action on this topic with a greater emphasis on other aspects of knowledge management, namely, from the motivation, culture, accounting and marketing perspectives.

CONCLUSION

The benefits of knowledge management outweigh the negative impacts. Knowledge management will lead to the achievement of the organisation's mission, enhancement of employees' independence and innovativeness, improvement in performance and productivity, increase in sales, revenue and shareholder value.

Nevertheless, problems such as the need to undergo corporate, cultural and procedural changes, lack of expertise, and time and cost constraints impede the growth of knowledge management practices. In addition, the reluctance of workers to share knowledge with others places further obstructions to the application of knowledge management.

Thus, several measures have to be introduced to smoothen the application of knowledge management. The solutions suggested are document management system, electronic voting, business intelligence software, incentives to the workers and provision of trust, sharing, communication and a supportive organisational culture.

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