

THE INTEGRATION OF KNOWLEDGE MANAGEMENT IN THE OPERATIONS OF MALAYSIAN BANKS

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ABSTRACT

The globalization of financial markets forced bankers to be knowledge-based and be more efficient in managing knowledge in their banking operations. The importance of this function is accentuated further by the call from the Central Bank of Malaysia (Bank Negara Malaysia) to integrate the concepts of knowledge management in banking operations. In this paper, we discuss a research model called: Banking Knowledge Management Model (BKMM), which encompasses knowledge creation, knowledge retention and knowledge sharing and more importantly, how each of these elements can be integrated to enhance the quality of banking operations. The various components of BKMM are explained and we illustrate the application of BKMM in two Malaysian commercial banks. We find that the two banks apply the concept of knowledge management in line with BKMM but differ in their knowledge management approach. Despite different approach, both banks derive many benefits from applying knowledge management in their operations. We expect a wider application of BKMM by other banks in Malaysia would create a culture that promote and enhance knowledge management in the banking sector.

ABSTRAK

Globalisasi pasaran kewangan memaksa bank beralih kepada pengurusan berasaskan pengetahuan dan cekap menguruskan pengetahuan dalam operasi perbankan. Pentingnya pengetahuan disokong oleh Bank Negara Malaysia (BNM) dengan menerapkan konsep pengurusan pengetahuan dalam operasi perbankan. Artikel ini membincangkan model kajian iaitu Model Pengurusan Pengetahuan Perbankan (MPP) yang terdiri daripada elemen penciptaan pengetahuan, pengekalan dan perlindungan pengetahuan dan perkongsian

pengetahuan. Setiap elemen ini penting diintegrasikan dalam penambahbaikan kualiti operasi perbankan. Komponen MPP yang pelbagai diperincikan dan aplikasi MPP dilakarkan melalui dua buah bank perdagangan di Malaysia. Dapatan mendapati kedua-dua bank mengaplikasi konsep pengurusan pengetahuan selari dengan MPP tetapi berbeza dari segi pendekatan yang dilaksanakan. Walaupun berbeza pendekatan, kedua-dua bank memperoleh banyak faedah daripada pelaksanaan pengurusan pengetahuan dalam operasi mereka. Dijangkakan aplikasi MPP yang menyeluruh oleh bank di Malaysia dapat melahirkan budaya yang mempromosi dan mengembangkan pengurusan pengetahuan dalam sektor perbankan.

INTRODUCTION

In a highly demanding business world today, an organization's competitive edge depends almost entirely on how well it can manage and deploy its corporate assets. These assets can be categorized into tangible and intangible assets. Traditionally, tangible assets like plant, equipment, inventory and financial capital are considered the most fundamental corporate assets. Intangible assets play a very little or marginal role in an organization regardless from which industry it comes from (Vorbeck, Heisig, Martin & Schutt, 2001). Generally, many organizations until today still downplay the importance of their intangible assets. However, despite managing and giving prime focus to all their tangible assets, these organizations still find it very hard to gain the advantage to beat their competitors. Hence, it is getting greater attention of the managers that organizations require a much broader range of resources to be able to compete and succeed in the current competitive market. This is evident by an increasing number of organizations giving more emphasis to their intangible assets, previously left idle, unexplored and unmanaged (Vorbeck *et al.*, 2001).

To compete and become successful in their own market, organizations are urged to learn how to manage their intangible asset, "Knowledge", effectively. This practice is generally known as Knowledge Management or sometimes is referred to as business intelligence. Knowledge management is the concept in which an enterprise consciously and comprehensively gathers, organizes, shares, and analyzes its knowledge in term of resources, documents, and people skills (Lyons, 2000). The emergence of this "knowledge era" is radically changing what creates value in organizations (Carlisle, 2002), whereby the long-term viability and prosperity of an organization increasingly depends on its ability to leverage the hidden value of its intangible assets. Therefore, knowledge management is now becoming an

undeniably important intangible asset. The continuous change in market expectations and the demands for new products gradually changes the working environment where capital and labor-intensive firms are replaced by knowledge intensive firms, and routine work by knowledge worker.

Knowledge Management in Banking Sector

For the past 20 over years, banks have been actively automating their manual processes. This has resulted in the creation of many information systems even within one bank. While these information systems are able to help banks better manage their processes and resources, they have also created a number of setbacks. One major setback of information system in the past was that it resulted in the creation of huge volumes of data and information, resulting in a phenomenon like information explosion or information overload. This phenomenon occurs when the banks are faced with over whelming amount of information, and they had to take time to go through the bulk of information and to select the best one to use. When there was heavy load of information, it resulted in slower response rate and if this happened frequently, inefficiency occurred. Consequently, efficient and effective recovery measures of resource and knowledge have increasingly become an imminent research issue in recent times.

Without proper management information systems, plans, procedures and tools, managing information could become a very serious task and an annoying problem in banks because some of this information would be useless and considered '*junk*' and regarded as noise. Nonetheless, realizing the important roles they play in the economy, banks are trying to create efficient, reliable management information system and it is a bank's priority to capture and manage their data and information, and turn it into organizational knowledge or business intelligence. However, the lack of process definition, classification, a comprehensive knowledge management model, and a suitable knowledge based business model could make the efforts futile.

This scenario, however, has changed. More efforts and resources are employed to make knowledge management successful since in today's modern banking, information and knowledge are treasured assets and revenue generating. The Governor of Bank Negara Malaysia declared this importance during the official launch of the "*Towards a Knowledge-Based Organisation*" programme in October 2000:

“If we are to be a central bank, with farsightedness and an ability to face new challenges, we need to be equipped with the expertise and the means to implement appropriate policies, and have confidence in our actions. An important component of this future is that the Bank must fully embrace and employ the principles of knowledge management. Whilst the principal objectives of the central bank remain unchanged, the new knowledge management strategies refocus the Bank’s policies and practices in managing knowledge as a key corporate asset, and in leveraging and exploiting knowledge to better achieve these objectives”.

The application of knowledge management in the banking industry does not really differ from other industries but the increasing complexity of banking environment makes its implementation more difficult. Banks have realized the crucial role of knowledge management in gaining an edge in this competitive field, but there have been laggards in the adoption of knowledge management. Usually this is due to wait and see attitude of what will be the true benefits and pitfalls experienced by early adopters. According to an International Data Corporation’s (IDC) survey conducted across more than 600 banks in Western Europe, only 20% of banks are currently applying knowledge management principles (Blesio & Mollignani, 2000). This application is actually more prevalent among large banks. With greater awareness of the importance of knowledge management, IDC expects this situation to change in the near future, and knowledge management will become a priority for the banking sector.

Then, what is new in knowledge management in banking sector? Apart from large volumes of data and information, the use of information technology in managing knowledge has given knowledge management a new dimension. In line with global trend, the knowledge management progress (KMPs) introduced by the Central Bank of Malaysia focuses more on information technology tools in managing knowledge. The KMPs is as shown in Figure 1. It is important that the use of technology and the “*social process of technology use*” are harmonized (DeSanctis & Poole, 1994). With this harmonization and appropriate strategies, information technology could help to carry out and maximize the benefits of many of the management initiatives, on knowledge management applications.

The knowledge management progress outlined in Figure 1 suggests that knowledge management is not only a technology but technology that is fundamental to the knowledge management progress. Duffy

(1999) defines knowledge management as “a process that drives innovation by capitalizing on organizational intellect and experience”. Knowledge management is also intended to promote and support the creation of new knowledge, thus contributing to innovation, an essential ingredient for banking success.

Global knowledge source acquisition. <i>Internet Access, Commercial Database</i>		Knowledge management in organisation. <i>Direct, Real time, Continuous learning</i>	
Knowledge sharing in banks. <i>“EDMS”, Data collection and Knowledge Godown</i>		Give value to individual knowledge. <i>Corporate Register</i>	
Integrated communication network. <i>E-mail</i>	Multi-function working group. <i>Virtual discussion room</i>	Inter-departmental knowledge sharing. <i>Intranet internal page</i>	
<i>The Process of Knowledge Management Progress</i>			

Source : Bank Negara Malaysia, 2000.

Figure 1
Knowledge Management Progress (KMPs)

In this paper, we aim to highlight firstly, the extent of knowledge year management integration among local commercial banks in Malaysia. The objectives of this research is to introduce a new knowledge management model which we call Banking Knowledge Management Model (BKMM). This model is based on the concept of knowledge management postulated by Wiig and Prusak. Secondly, to examine to what extent this model has been applied by two Malaysian commercial banks; Maybank and AmBank. Specifically, a case study was conducted to find out the integration of each component of the BKMM in these two banks.

This article is organized as follows. In the first section, we discuss the concepts of knowledge management in banking sector. In the second section, we present BKMM, the new knowledge management research model which contains explanation of the key components comprising the environmental factors, the people and technology factors, the knowledge creation, knowledge retention and knowledge sharing. In the third section, we present our findings on the application of the BKMM in Maybank and AmBank.

We believe that this study will assist bankers in Malaysia to develop capabilities to manage their intangible asset better, to utilize knowledge management concept and the model to provide competitive edge and to create value for their banks.

Knowledge and Knowledge Management Definition

Knowledge is the main element that inspires knowledge management initiatives in any sector. The knowledge-based era forced the banking institutions to view knowledge as one of the main competitive advantages. The issues on knowledge management discussed in corporations are somehow relevant to banking institutions since *“it gets tougher in financial landscape because it is such a knowledge-oriented environment”* (Davenport, 1998; ISIS, 2002).

When mentioning knowledge management, the interpretation of knowledge itself must be clarified. Allee (1997) explains in detail that knowledge archetype relates to data, information, knowledge, meaning, philosophy, wisdom and union. Basically, the archetype defines data as many whitecaps in a larger sea of information. It is considered as information only when data are linked to another data. In relation to that, information becomes knowledge only when it is analyzed, linked to other information and compared to what is already known.

There are researchers who define knowledge in the context of know-why, know-what, know-how, know-who, know-where and know-when, in order to relate it with managing knowledge concepts. For instance, Van den Bosch and Van Wijk (2001) present a conceptual framework of managerial knowledge integration. Know-what can be defined as something people carry around in their head and pass between each other but in contrast, know-how embraces the ability to put know-what into practice (Brown & Duguid, 2002). On the other hand, Japanese researchers like Nonaka, Toyomo and Konno (2002) define knowledge by emphasizing on the relative, dynamic and humanistic dimensions rather than the traditional Western epistemology (the theory of knowledge) that focuses on the absolute, static and non-human view of knowledge. They agree that :

“knowledge is created in the spiral that goes through two seemingly antithetical concept such as order and chaos, micro and macro, part and whole, mind and body, tacit and explicit, self and other, deduction and induction and creativity and control” (Nonaka *et. al*, 2002).

Basically, knowledge can be differentiated into two types; explicit knowledge and tacit knowledge (Nonaka *et. al*, 2002). The comparison between the two types are shown in Table 1.

Table 1
Explicit Knowledge Versus Tacit Knowledge

Author(s)	Explicit	Tacit
Nonaka <i>et al.</i> (2002)	<ul style="list-style-type: none"> * Can be expressed in form and in specific language and shared in the form of data, scientific formula, specification, and such like. * Can be processed, transmitted and stored relatively easily. 	<ul style="list-style-type: none"> * Highly personal and hard to formalize. * It is deeply rooted in action, procedures, routines, commitment, ideas, values and emotions.
Van den Bosch and Van Wijk (2001)	<ul style="list-style-type: none"> * As it is articulated, codified and teachable, knowledge is easier transferable internally. * Much explicit knowledge is built on a foundation of tacitly shared knowledge. 	<ul style="list-style-type: none"> * Difficult to articulate, codified and teach, since it is emanates from context-specific personal experience and learning-by-doing. * Often takes the form of rules and routines.
Lyons (2000)	<ul style="list-style-type: none"> * Knowledge that has in some way been documented or codified. * It is easily classified, categorized, combined, and distributed to others. * It is typically stored in a knowledge-based or document management system. 	<ul style="list-style-type: none"> * Knowledge held by human being. It is based upon personal experience that is accumulated over an extended period of time. * It is influenced by intangible factors. * Takes the form of rules of thumb, intuition, tips and techniques, internalized skills, best practices, gut instinct and even knowledge of who to contact for information which is not in one's own expertise.
Vorbek <i>et al.</i> (2001)	<ul style="list-style-type: none"> * Documented and ideally structured knowledge that is fairly easily accessible and available in different media. 	<ul style="list-style-type: none"> * Exists in the head of the company's professionals. * Includes experiences, ideas, rules of thumb, tips and tricks that have not yet received attention from previous management models they deserve.

Source: Nonaka *et al.*, 2002; Van den Bosch and Van Wijk, 2001; Lyons, 2000; Vorbek *et al.*, 2001.

Knowledge management can be viewed from different perspectives and a knowledge management practices are widely implemented in business, firms and corporate fields. The discussion on knowledge management definition is mainly inspired from those fields.

Quintas (2002) discusses three different priorities that bring to different responses by firms in their knowledge management initiatives. Many firms in the West give priorities to capturing employees' knowledge, exploitation of existing knowledge resources or assets, and improved access to expertise. Others mainly focus on "capturing and re-using past experience, after-action reviews to capture learning, and building and mining knowledge stores" (Quintas, 2002). The third priority, focus on generic knowledge management initiatives that promote better communication, learning and knowledge sharing. In addition, today's organizations recognize the importance of knowledge creation and seek to create a culture that supports knowledge creation. Quintas (2002) quotes the definition of knowledge management from Xerox as follows :

"Knowledge management is the discipline of creating a thriving work and learning environment that fosters the continuous creation, aggregation, use and re-use of both organizational and personal knowledge in the pursuit of new business value" (Quintas, 2002).

The following definition is related to the exploitation of experts' knowledge and the importance of knowledge sharing among employees :

"Knowledge management is about more than the management of hardware and software and solving problems of user friendliness. It is also concerned with making the best possible use of the creativity and expertise of people and the effective management of dynamic social processes which generate and exploit a wide range of differing types of knowledge" (Carlisle, 2002).

Application of Knowledge Management

Knowledge management has been implemented and practised by public and private sectors. There are several examples of knowledge management application successfully implemented in the banking sector such as:

World Bank is renowned as one of the champions in knowledge management application and it has an extensive knowledge

management approach in place. Relevant know-how was an identified, captured and entered into the knowledge base so that it could be accessible by all staff. Relevant parts of the system are now becoming attainable externally. As such clients, partners, and stakeholders around the world are able to have access to the know-how of the World Bank. For example, an Indonesian official needs to know the international experience on private sector involvement in vocational training. Through the help of the Human Development Network, the relevant task team leader in charge is able to give to the official within a short time frame, a comprehensive analysis of the international experience.

When Swedish Insurance giant Skandia expanded its “*points of sale*” from 5,000 to 50,000 in less than five years, senior management began to look for a more effective and efficient manner of transferring knowledge and increasing its use throughout its global operations. The firm has successfully leveraged internal know-how to substantially reduce start-up time for new ventures to seven months, compared to an industry average of seven years.

Bank of Montreal (BMO) is the oldest bank in Canada. It is also the Canadian third largest bank with sales of \$US12.23 billion in 2000 (Dzinkowski, 2001). BMO is a leader in customer centric knowledge based solution. This bank wanted to change the status quo of the traditional knowledge discovery lifecycle and capture the potential benefits of improving the efficiency of turning models into production. As a result of this, during 2000/2001, BMO participated in a multimillion dollar project that helped to make the knowledge discovery process in the bank more economical, error-free and faster.

Deutsche Bank is the biggest Euro zone bank and the world’s second largest bank (Dzinkowski, 2001). Deutsche Bank has embraced the concept of knowledge management through its strategy of continuous, concentrated corporate learning and intellectual capital branding. It implemented this idea through the creation of the Deutsche Bank University (DBU). DBU is in the initial stage of development and to a large degree follows the thinking of what are recognised by industry experts as best practices in developing a corporate university as an umbrella organization for learning.

Benefits of Knowledge Management

There are many benefits to be reaped from knowledge management. For example, Foundation Knowledge lists 44 generic benefits of knowledge management on its website (Cong & Pandya, 2003).

However, only key benefits of knowledge management are addressed in this paper.

In an organizational setting, benefits can occur at two levels; individual and organizational (Cong & Pandya, 2003). At the individual level, knowledge management provides employees opportunities to enhance skills and experience by working together and sharing other people's knowledge and learn from one another, thereby improving personal performance, which leads to better career advancement.

At the organizational level, knowledge management provides two major benefits for an organization:

1. Improving the organization's performance through increased efficiency, productivity, quality and innovation. Organizations that manage knowledge claim higher rates of productivity. By having greater access to their employees' knowledge, organizations make better decisions, streamline processes, reduce re-work, increase innovation, have higher data integrity and greater collaboration (CIO Council, 2001).
2. Increasing the financial value of the organization by treating people's knowledge as an asset similar to traditional assets like inventory and capital facilities (U.S Department of Navy, 2001).

BANKING KNOWLEDGE MANAGEMENT MODEL (BKMM)

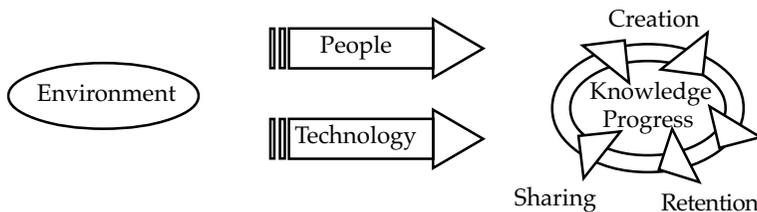


Figure 2
Banking Knowledge Management Model (BKMM)

Based on the literature review, we have come up with a conceptual model to better describe the knowledge management progress. The model is as shown in Figure 2. The environment forces (such as the importance for an organization to maintain its competitive advantage by managing knowledge well or the requirement of the organization to distribute its knowledge among its geographically dispersed human resources) may compel an organization to initiate a knowledge

management programme. Similarly, through a combination of people and technology, information and energy are transformed into Knowledge Progress and structures that produce products and services. Lastly, the model introduces three components in the Knowledge Progress. They are knowledge creation, knowledge retention and knowledge sharing.

Environment

In any work environment, most jobs are imprecise: best decisions depend on circumstances and available knowledge. Time pressure demands that organizations capitalize on lessons learned and past experience. However, this approach has many limitations as the decisions made based on past experience may not be the most appropriate one. Consequently, there is a need for a sophisticated level of “*know-how*”, “*know-what*”, “*know-who*”, “*know-where*” and “*know-why*”. Organizations need to have high performance to respond to market demands such as the right product at the right time, customer focused service and marketing strategies, high performance organizational practices and access to high value of information and knowledge.

A high performance organization pursues its goals in a changing environment by adapting and enhancing its behavior according to what it knows about itself and the world in which it needs to succeed. It is therefore a learning organization that is skilled at creating, acquiring, organizing and sharing knowledge that can gain competitive advantage. Two major components influencing the success of an organization in adopting knowledge management are people and technology.

People

A challenge for knowledge management is managing and training people to embrace a knowledge management oriented culture. According to Duffy (1999), sharing knowledge especially proprietary or individual knowledge could result in power redistribution and face cultural resistance. Many studies emphasize the importance of corporate culture in successful knowledge management (Earl & Scott, 1999; Havens & Knapp, 1999). Some even claim that knowledge management can be successful only with a change in culture. Furthermore, the new culture must be integrated with existing business processes and practices. Communication, reward systems, and leadership are important cultural factors in implementing knowledge management.

Technology

Knowledge in today's organizations can be characterized as "fragmented" (Duffy, 1999). There are extremely large volumes of knowledge dispersed in organizations with ever-increasing size. Accompanied with mergers, acquisition and alliances, banks are becoming more and more diversified in the type of businesses they operate. Information technology is only effective if used properly in data management. Now the question is whether information technology can do the same for knowledge management to enhance knowledge management initiatives.

To allow knowledge sharing anytime anywhere, several types of technological tools are available. Mobile technology, portable hardware and software, networks, email, teleconferencing and intranets are some of the commonly used technologies for knowledge creation and sharing. Knowledge repositories and data warehouse are some of the technologies used for data retention.

The people and technology are the elements that contribute to knowledge progress. Knowledge progress can be divided into three components namely knowledge creation, knowledge retention and knowledge sharing.

Knowledge Progress

Inkpen (1996) characterizes knowledge management progress as "a set of organizational actions that establishes the basis for accessing and exploiting knowledge". Knowledge related work, categorized by Davenport and Prusak (1998) are accessing, generating, imbedding and transferring. Three major components are involved in knowledge progress: knowledge creation, knowledge retention and knowledge sharing. The essence of knowledge management is to manage those components for organizational effectiveness.

Knowledge Creation

This is the progress in which knowledge is captured and defined. Explicit knowledge can be easily captured and put in the form of a manual, booklet, or document. On the other hand, tacit knowledge is imbedded in social structures, and therefore, it needs to be extracted, codified, and made explicit. Through this codification process, tacit knowledge is transformed into explicit knowledge.

Knowledge Retention

Another important knowledge progress component is the retention of knowledge. The main purpose of retention is to allow reuse of knowledge. Knowledge retained can be readily shared. Protection of knowledge is equally important. Without security measure, the integrity of the knowledge could be at stake. Erroneous knowledge is just as damaging as inaccessible knowledge, if not more.

Knowledge Sharing

When we communicate knowledge, it is the process of sharing. Both explicit and tacit knowledge can be shared. However, explicit knowledge can be shared more easily and will have little risk of creating error in the process. Tacit knowledge, which is hard to articulate, is the challenging part of knowledge sharing. In any case, sharing should be as direct as possible with few intermediaries (Buckman, 1998).

In this section, we present the experiences of two commercial banks that have succeeded in applying knowledge management. Here, we analyze the knowledge management progress of Maybank and AmBank. The knowledge management progress adopted were examined and the findings were grouped to fit each of the components in Banking Knowledge Management Model (BKMM).

FINDINGS FROM STUDIES ON LOCAL BANKS

Maybank

Maybank is the largest commercial bank in Malaysia. It has many branches and subsidiaries locally and abroad. With such a large banking network and a wide customer base, Maybank has applied knowledge management initiative in handling and maintaining its banking operations.

Environment

We found that some of the environmental factors that compelled the bank to go for knowledge management are: (i) the need to maintain customer knowledge (customer relation management (CRM)) (ii) competitive intelligence, and (iii) service knowledge. The management opine that knowledge management progress is important to maintain the bank's competitive edge as well as its proprietary knowledge of its customers and business.

People

The bank's culture consists of its knowledge enterprising characteristics that promote knowledge sharing. Part of this unique culture enables the world's most knowledgeable experts to stay in touch with all levels of the Maybank staff, thus encouraging group problem solving and sharing of new ideas and knowledge. The study shows that the top management is proactive in changing the work culture within Maybank to embrace knowledge management.

Technology

In terms of technology, Maybank has incorporated knowledge management in the form of webpage known as Maybank2u. Maybank2u is a webpage of knowledge bases used as a world-wide resource by Maybank customers and employees. It is the network through which Maybank employees share knowledge electronically and then pass it on to its customers. Maybank2u is represented by an inter-related collection of databases. It supports rapid exchange of knowledge between employees and customers although they are separated by time and space. Integrating electronic forums, libraries (online) and e-mail, Maybank2u gives Maybank employees and customers unlimited access to banking expertise, services and resources in Malaysia and worldwide.

Knowledge Creation, Retention and Sharing

In Maybank, we find that a feedback loop was set up where queries relating to a particular problem that could not be answered by the customer service consultant were posted on the forum. Usually a request for help was picked up by anyone who had the expertise in the related field. However, if the request was unattended to for a few hours, then the forum specialist would pick up the request, identify the potential experts and try to get their attention to answer the queries. During the process, the knowledge is organized, validated, and stored into the repository and would be ready for distribution and used or reuse if a similar query is requested in the future.

AmBank

AmBank is one of the Malaysian anchor banks. The knowledge strategy adopted in AmBank brings forward a systematic approach to creating and harvesting the knowledge of the bank. The objective is to place its best collective knowledge at the fingertips of everyone in the bank.

Environment

For AmBank, it is important to improve human resources and management of human resource. The bank views its competitive advantage can only be sustained by continuously improving the knowledge and expertise of employees, motivating and empowering employees at different levels to use their knowledge to pursue strategic objectives of the bank. Re-organizing and restructuring human resources, rearranging specialist division of knowledge and expertise, and maintaining close links with customers are also some of the strategies adopted to gain the bank's competitive advantages.

People

Following a merger exercise with other local banks in 1998, AmBank has acquired many employees with different work cultures since they were from different banks. Thus, the major challenge was how to streamline technical information exchanges among the employees. In order to meet the challenge, the bank offered rewards to employees that shared knowledge among themselves. This reward was given to encourage greater knowledge sharing among staff and indirectly promoted knowledge management practices in the bank.

Technology

AmBank developed e-libraries in the form of distributed databases that could be accessed by everyone in 24 hours. The e-libraries were developed and maintained by the employees. These facilities give them an understanding of what e-libraries represent, how they should be used and the benefits they could get in meeting the overall drive to improve services. These e-libraries are facilities that are not provided by other banks' to their customers. Therefore, these facilities provided by AmBank are at present unique, in term of the application of knowledge management compared to Maybank.

Knowledge Progress

AmBank has full time employees logging customer problems and queries into the e-libraries and maintaining them. The e-libraries have an extensive range of customer services and in some cases, solutions in store that can be retrieved and used to solve problems. The e-libraries are used as a reference tool and a store of knowledge and experience on processes that contribute significantly to final services rendered to bank customers.

DISCUSSION ON FINDING

This section discusses the findings on knowledge management practice that are being used by Maybank and AmBank. Overall, we found that the usage of knowledge management by the two banks is still at the infant stage even though the concept of knowledge management has already been embraced by the banks. We find that the two banks' motivation to practice knowledge management are to improve knowledge and expertise of their employees, to motivate and empower employees at different levels to use their knowledge in delivering banking services, to reorganize and restructure human resources and to improve the interfaces for knowledge sharing. However, a wider application of knowledge management is still very much desired in order to generate greater knowledge sharing in bank to customer and customer to customer relationships.

We note that Maybank and AmBank differ in their practice of knowledge management model. Maybank's model focused on codified method of knowledge management while AmBank used the personalized method although the latter codified its processes into e-libraries and databases for all the personnel and customers to use. However, Maybank customers have an additional advantage to access to a 24-hour banking services at a faster speed. This provides a competitive advantage to Maybank and its customers.

However, both banks used various technologies for knowledge management. Among these technologies, databases and webpages are the most common types of technologies used followed by e-mail. Through these technologies, knowledge, both explicit and tacit, are created and retained in databases. With these facilities, knowledge are accessible and can easily be shared among employees and customers. Based on Maybank and AmBank experience, it could be said that banks which apply knowledge management can enjoy the benefits of having more knowledgeable workers and greater knowledge sharing. This would contribute to greater efficiency and bank performance improvement.

CONCLUSION

In this paper, we highlight the concept of knowledge management and the importance of knowledge management integration in banking sector. A research model; Banking Knowledge Management Model (BKMM) based on knowledge management concepts is developed to study to what extent this model has been applied by two Malaysian

commercial banks; Maybank and AmBank. Based on our findings, we find that the two leading commercial banks have applied the concepts of knowledge management as incorporated in the model. However, the extent of knowledge management integration as evident in this two banks are still small because keen competition and dynamic market changes motivate them to start knowledge management initiatives. We also find that distributing and sharing knowledge among the employees so as to empower them to take timely decisions is one of the main reasons for knowledge management integration in banks. Knowledge management practices are integrated in banking sector through people and technology. Although Maybank focuses on codified method and AmBank adopts personalized method, both banks find they derive many benefits from applying knowledge management practices in their operations.

The contribution of this paper is firstly, presenting the extent of the application of knowledge management in two Malaysian commercial banks based on the Banking Knowledge Management Model (BKMM). Secondly, creating awareness of the benefits of knowledge management integration. Thirdly, BKMM serves as an initial conceptual framework for bankers to integrate knowledge management in their banks. The applicability of the model is demonstrated by the experience of the two banks. Since our study only covers two banks, we suggest that a more comprehensive research be conducted on a large number of banks to optimize the benefits of knowledge management integration in the banking sector.

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