

FACTORS AFFECTING KNOWLEDGE CONVERSION OF THAI BANK BRANCHES

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Abstract

This study focuses on factors affecting knowledge conversion of bank branches in Thailand. The four factors were information technology support, teamworking, social network and internal communication. The findings indicated that social network and information technology support had high influence on knowledge conversion respectively. The suggestions and directions for future research in the areas of knowledge management were also discussed.

บทคัดย่อ

การศึกษานี้มุ่งเน้นปัจจัยที่มีผลกระทบต่อการเปลี่ยนแปลงความรู้ของสาขานาคารในประเทศไทย ประกอบด้วยปัจจัย 4 ประการ ได้แก่ การสนับสนุนทางด้านเทคโนโลยีสารสนเทศ การทำงานเป็นทีม เครือข่ายทางสังคม และการสื่อสารภายในองค์กร ผลของการศึกษาพบว่าเครือข่ายทางสังคมและการสนับสนุนทางด้านเทคโนโลยีสารสนเทศมีอิทธิพลอย่างสูงต่อการเปลี่ยนแปลงความรู้ตามลำดับ การศึกษานี้ยังได้ให้ข้อเสนอแนะและแนวทางทางในการวิจัยต่อไปในด้านการจัดการความรู้

INTRODUCTION

The purpose of this study is to study factors affecting the capability of the organization to convert the new knowledge and existing knowledge together. As suggested by Nonaka (1991), to manage organizational knowledge effectively, organizations have to be able to convert or integrate the newly acquired knowledge and current

knowledge so that they can create new knowledge. This study aims to provide the insights of creating the new construct guided by past literatures which can be achievable and highly useful for the research in the areas of knowledge management. The context of the study was in banking industry at the bank branch level, where each bank represents one organization.

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Background of Banking in Thailand

Banking industry is one of the most competitive industries in any country. The importance of banking sectors to the economy is obvious in that banks provide financial services necessary for individuals, businesses and government agencies. As for the degree of competition in the Thai banking industry, there was clearly a higher degree of competition through these financial reforms. The Thai government had the Financial Sector Master Plan to help strengthen the financial systems.

According to the Bank of Thailand (2008), there are three forces of change in the Thai banking industry, which are emergence of new technology, liberalization and deregulation, and increasing customer sophistication

Bank consumers currently have many ways to access financial products and services. With new competitors, including foreign banks and nonbanks, such as AEON and GE Capital, domestic banks have had to adjust their resource and capabilities in order to improve their performance. In addition, new technological delivery methods, such as electronic banking or mobile banking, have been introduced to provide financial services to customers. For this reason, customers are becoming increasingly sophisticated in their demands for faster and more convenient services from financial service providers. In the past, banks competed heavily in traditional savings instruments. Currently, new investment products are being introduced to customers and have become new areas of competition. Banks now encounter these new challenges and need to adjust and improve their business opera-

tions to respond more efficiently and effectively to customers' expectations and to deal with competitors in the banking industry (Kubo, 2006).

These three forces of change obviously affect competition in the Thai banking industry because there are new forms of competitors, such as nonbanks providing several types of loans for customers. In order to achieve high performance and their goals, banks have to seek new ways to understand customers better and to improve their business operations.

In addition, according to Kubo (2006), the changes in the competitive environment of the Thai banking industry are noticeable in terms of ownership structures and regulations. After the financial crisis, for several banks the ownerships, formerly belonging to families, were transferred to the state and international banks. Although several changes occurred after the crisis in banking operations, the six largest banks provided approximately 70 percent of the total loans of the banking sector, indicating the stable market shares dominated by big banks.

In this study, the author has chosen to study seven commercial banks which have more than 100 full branches, located in the Bangkok area, including:

- Bangkok Bank
- Krung Thai Bank
- Kasikorn Bank
- Siam Commercial Bank
- Bank of Ayudhya
- TMB Bank
- Siam City Bank

These seven banks account for 837 branches out of 1,101 branches of all banks in Bangkok. Since Bangkok is the capital

of the country, bank competition is significantly high there. The importance of knowledge management in Bangkok is crucial for the branches to be able to respond to this competitive environment. Banks are one of the most important business sectors in the economy of any country. Moreover, the nature of the banking business is to operate 24 hours, such as ATM services. This implies the crucial role of knowledge management for banking operations.

Resource-Based View Theory

The resource-based view theory emphasizes strategies for utilizing existing firm-specific resources and also the relationship of firms' resources, development of new capabilities, and organizational performance (Wernerfelt, 1984; Teece, Pisano and Shuen, 1997). In order to control over resources, especially firm-specific assets, firms need to focus on skill acquisition, and on the management of knowledge and know-how. For this reason, organizational learning is the fundamental strategic issue that firms have to be concerned about. In addition, the combination of skill acquisition, learning, and accumulation of organizational and intangible assets leads to the greatest potential for achieving higher organizational performance.

Additionally, Davenport, De Long and Beers (1998) have stated that knowledge can also be defined as information combined with experience, context, interpretation and reflection. The purpose of information is to shape the person (a receiver) to make some difference in his or her outlook or insight, because information informs the receiver. In

contrast to data, information has purpose and relevance. Information is converted to knowledge when it is processed in the mind of a person and this knowledge can become information again when it is communicated to others in spoken or written words (Alavi and Leidener, 1999).

McDermott (1999) has suggested that knowledge differs from information, and sharing knowledge requires different concepts and tools. There are six aspects of knowledge that are different from information.

1. Knowing is a human act. Knowledge always involves people, especially people that know.

2. Knowledge is a residue of thinking. Thinking is a key to making information useful for users. Moreover, it transforms information into insights and insights into solutions for business practices. In one way, knowledge also comes from experience, but the experience alone is not sufficient, meaning that experience needs to be combined with thinking.

3. Knowledge is created in the present moment. Most people cannot articulate what they know and it is largely invisible to their thoughts when they have questions and start to think about the answer to a problem.

4. Knowledge belongs to communities. People learn and create knowledge when participating in communities, including families, neighbors, and with colleagues. For example, marketing specialists learn market survey methods, but they also learn marketing perspectives by asking questions about product use, customer behaviors, and so on. This knowledge is embedded in the marketing discipline and can be transferred

to others by professional practices.

5. Knowledge circulates through communities in many ways. Knowledge can flow within and through professional communities and from one generation to the next. The knowledge of communities is in the form of unwritten work routines, work products, textbooks, procedures, stories and specialized languages.

6. New knowledge is created at the boundaries of old knowledge. In learning new things, people normally compare the new things they learn with what they already know. The practice of professional work is related to the thinking that comes from experience and current information, and new knowledge emerges from thinking at the basis of current practice.

Types of knowledge

Karkouliau, Halawi and McCarthy (2008) have stated that knowledge has two forms, explicit and tacit. The first type is explicit knowledge, which can be documented and shared through information technology (IT). Explicit knowledge is structured, has fixed content, and is externalized and conscious (Martensson, 2000; Haldin-Herrgard, 2000). The second type is tacit knowledge, which exists in the human mind, behavior and perception. The characteristics of tacit knowledge are that it is personal, cognitive, and is difficult to explain in words or in writing (Gore and Gore, 1999).

Table 1: Knowledge Perspectives and Their Implications

Perspectives	Description	Implications for Knowledge Management
Knowledge vis- -vis data and information	Data are facts and raw numbers. Information is processed data. Knowledge is personalized information.	Knowledge management focuses on exposing individuals to potentially useful information and facilitating assimilation of information.
State of mind	Knowledge is the state of knowing and understanding.	Knowledge management involves increasing individual's learning and understanding through provision of information.
Object	Knowledge is an object to be stored and manipulated.	The major knowledge management issue is building and managing knowledge stock.
Process	Knowledge is a process of applying expertise.	The knowledge management focus is on knowledge flows and the process of creation, sharing and distributing knowledge.
Access to information	Knowledge is a condition of access to information.	The focus of knowledge management is organized access to and retrieval of content.
Capability	Knowledge is the potential to influence action.	Knowledge management is about building core competencies and understanding strategic know-how.

Source: Adapted from Alavi and Leidner, 2001.

Knowledge Conversion

Lee and Sukoco (2007) stated that the process of knowledge conversion (or also called knowledge creation) should be conducted at all levels of the organization. In addition, in order to create changes to enhance organizational performance or to respond to environmental changes, applying existing and new knowledge should be a guide to the improvement in organizational competences and performances. Further, Ju, Li and Lee (2006) and Cui, Griffith and Cavusgil (2005) have suggested that knowledge conversion means the process of making existing knowledge useful by organizing, integrating, coordinating, and disseminating activities.

Moreover, knowledge conversion can be seen as one aspect of the firm's dynamic capabilities, according to the resource-based view theory.

Teamworking

According to Greenough (1998), teamworking is a fundamental component of lean manufacturing, as mentioned in his study of an engine plant of a major UK motor manufacturer. With teamworking, organizations are introduced to new working practices and new products or even new manufacturing systems.

Moreover, Greenough (1998) has identified from research findings that workers highly value the opportunity to interact and to know more about other team members, resulting in knowledge transfers and exchanges among organizational members.

The culture of teamworking is an im-

portant aspect for the organization as the dynamic force to adapt to the new realities of the business world (Bradley, 1994). Therefore, senior managers have to plan carefully how to create an effective teamworking environment in the organization. Team learning has become one of the most important elements in teamworking as an important aspect leading to knowledge management in organizations. It is crucial to encourage teams to review their knowledge and experience from working and exchanging information among team members in order to improve the problem solving and decision making of the team and the organization. With a closer working relationship, organizations can clearly benefit from knowledge flows among individuals, groups, and departments with the clear guidelines provided by the organization executives.

Internal communication

In relation to the aspect of knowledge management, in Nonaka's work on *The Knowledge-Creating Company* (1991), redundancy-the conscious overlapping of company information, business activities, and managerial responsibilities-generates frequent dialogue and communication among workers, helping in the transfer of tacit knowledge. Thus, having frequent dialogues and communication assists with internal knowledge sharing, knowledge acquisition, knowledge conversion or creation, and knowledge application in the organization. Therefore, effective internal communication is significant for knowledge storage and capturing.

Welch and Jackson (2007) have indi-

cated that internal communication is comprised of the interactions and relationships between stakeholders within organizations across a number of interrelated dimensions, including internal line manager communication, internal team peer communication, internal project peer communication, and internal corporate communication. Furthermore, the participants in internal communication include all groups at different levels in the organization, as follows: all employees, strategic management, day-to-day management, work teams (departments, divisions) and project teams.

Information Technology Support

Hislop (2002) has mentioned that information technology plays important roles in the management of organizational knowledge, including the application of information technology systems. However, Hislop (2002) has suggested that information technology alone may not help the organizations to support fully knowledge management effectively, but integration with other factors, such as social networks among people and organizations could lead to knowledge management success.

The role of information technology has been mentioned in knowledge management research as one of the most important factors for managing organizational knowledge. Iftikhar, Eriksson, and Dickson (2003) have stated that information technology offers one of the strongest components of knowledge management development and includes a range of systems offering capabilities in knowledge management. Even though there are many benefits that information technol-

ogy has obviously provided for organizations, many concerns about the application and management of information technology should be raised, especially regarding large and complex information systems. In addition, several organizations have not understood that when they acquire information technology, the systems will generate good management outcomes.

Social Network

Lea, Yu, Maguluru and Nichols (2006) have concluded that a social network can be defined as a set of people, organizations or other social entities related and connected by a set of socially meaningful relationships, such as friendship, co-working, and interactions among participants of the networks, to effectively accomplish expected business outcomes by sharing expertise and resources. In addition, the social network normally provides participants with opportunities for finding social support and creating new business contacts for cooperation by exchanging social capital in many aspects, such as financial resources, goods or services, and knowledge resources.

According to Gregory (2007), the social network is a set of relationships between a group of individuals or organizations that usually have similar interests, and with these networks one can utilize the network or connections to learn from others. The social network can also be an important source of knowledge. By interacting with customers and suppliers, or by learning from external experts, an organization can capture and acquire new knowledge. In their research, Somchai Numprasertchai and Igel

(2005) stated that by forming social networks, for example, collaboration and exchange among universities and government agencies and industries can help to generate greater breadth and depth of research knowledge than pure in-house development. Weber and Khademian (2008) have noted that it is important to focus on relationships and involvement in taking what is known among social network participants and engaging the exchange among social network participants; in this way, new information or knowledge can be developed and combined into functional and useful practices for problem-solving purposes.

Data Collection Method

The study used questionnaires as a tool to collect data for the data analysis. The author randomly selected the bank branch by using Microsoft Excel with random functions. When targeted branches were selected, questionnaires were sent and followed up by telephone calls and bank visits. Last, the author collected all 277 questionnaires with no missing values, because when some questions were unanswered, the author called back or visited the branch so that the questionnaires could be completed. The total time spent on the data collection was approximately three months, from March to May 2008.

Structural Equation Modeling

As structural equation modeling is also known as a technique for theory testing Hair, Black, Babin, Anderson, and Tatham (2006)

stated that theory can be thought of as a systematic set of relationships providing a consistent and comprehensive explanation of phenomena and the model is used to represent the theory.

Ullman's (2006) structural equation modeling (SEM) can be seen as a collection of statistical techniques allowing a set of relations between one or more independent variables and one or more dependent variables to be analyzed and studied. In addition, structural equation modeling is also known as causal modeling, causal analysis, simultaneous equation modeling, and analysis of covariance structures. In SEM, constructs (or latent variables) are shown in circles and the observed variables (or measured variables) are depicted in rectangles.

Model Fit Indices

In structural equation modeling, the validity of the measurement model relies on the goodness of the fit of the measurement model and the sufficient evidence of construct validity. This goodness of fit shows how well the proposed or specified model can reproduce the covariance matrix among the indicator items.

There are several fit indices for model assessment. According to Hair et al. (2006), Hu and Bentler (1999), MacCallum and Austin (2000), main fit indices are used for model assessment, including Comparative Fit Index (CFI), Normed Fit Index (NFI), Non-Normed Fit Index (NNFI), and Incremental Fit Index (IFI).

Table 2: Measures of the Structural Model Fit

Items	Criteria
Comparative Fit Index (CFI)	>0.90
Normed Fit Index (NFI)	>0.90
Non-Normed Fit Index (NNFI)	>0.90
Incremental Fit Index (IFI)	>0.90

Source: Hu and Bentler, 1999; Hair et al., 2006.

Reliability Analysis, Convergent Validity and Discriminant Validity

Reliability analysis showed that all constructs had the Cronbach's alpha higher than .80, (the lowest value was .852) indicating highly reliable constructs (Hair et al., 2006). Anderson and Gerbing, (1988) provided comprehensive understanding for convergent validity and discriminant validity, which were important validities to measure before further conducting research on structural equation modeling. According to Hair et al. (2006), convergent validity means the ability of some measures to have convergent validity when they are highly correlated with different measures of similar constructs. In other words, convergent validity is the extent to which the scale correlates positively with other measures of the same construct. The results shown as convergent validity were tested by evaluating the magnitude of factor loadings of observed variables on the proposed constructs or latent variables.

To measure, convergent validity, confirmatory factor analysis was used by confirming that all scale items loaded significantly on their hypothesized construct factors (Anderson and Gerbing, 1988). Anderson and Gerbing (1988) also stated that when all the t-values exceed the standard

of 2.00, satisfactory convergent validity is indicated. The chi-square statistic tests of both measurement models are significant as anticipated when the sample size becomes large. Other fit indices demonstrated good fit of the models. The results of this study provided the lowest t-value of 9.775, greater than 2.00. Discriminant validity can indicate that one construct differs from other constructs. According to Anderson and Gerbing (1988) and Jiang, Klein, and Crampton (2000), the discriminant validity was examined for each pair of constructs at a time to compare the difference between χ^2 test of fixed and free models, where the results should exceed $\chi^2 (1, 0.05) = 3.841$ in order to conclude that two constructs has discriminant validity. In this study, the lowest difference between free and fixed models was 31.551, higher than 3.841, showing that the constructs have discriminant validity.

Table 3: Descriptive Statistics of Observed Variables

Construct	Observed variables	Min	Max	Mean	S.D.
Information Technology Support	it1: Our bank branch provides IT support for communication among members.	2	7	6.16	0.915
	it2: Our bank branch provides IT support for searching for and accessing necessary information.	2	7	6.16	0.895
	it3: Our bank branch provides IT support for systematic knowledge storing.	2	7	6.15	0.965
	it4: Our bank branch provides IT support for collaborative work with other branches.	3	7	6.16	0.895
	it5: Our bank branch provides IT support for data analysis.	1	7	6.00	1.068
Knowledge Conversion	kc1: Our bank branch has processes for transferring organizational knowledge to individuals.	2	7	6.03	0.855
	kc2: Our bank branch has processes for distributing knowledge throughout the organization.	3	7	5.99	0.893
	kc3: Our bank branch has processes for integrating different sources and types of knowledge.	1	7	5.72	0.920
Social Network	sn1: Our bank branch has close co-operation with our stakeholders, such as companies, universities, technical colleges, etc. are fomented.	1	7	5.74	1.018
	sn2: Our bank branch is in touch with professionals and expert technicians.	3	7	5.67	0.931
	sn3: Our bank branch encourages its employees to join networks made up of people (such as customers and suppliers) from outside the organization.	2	7	5.52	1.009
Teamworking	tw1: In our bank branch, we have a team-based working environment.	2	7	6.13	0.760
	tw2: In our bank branch, we have team-based problem solving.	2	7	5.96	0.811
	tw3: In our bank branch, we use team-based decision-making methods.	2	7	5.97	0.836
Internal Communication	ic1: Our bank branch has frequent communication within the organization.	4	7	6.24	0.752
	ic2: Our bank branch has effective processes for communication among departments.	1	7	5.94	0.823
	ic3: Our bank branch has processes for two-way communication between management and staff.	2	7	5.94	0.909
	ic4: Our bank branch has processes supporting information flow within the organization.	3	7	5.84	0.820
	ic5: Our bank has processes for exchanging information and ideas within our branch.	4	7	5.88	0.852
Branch Size (Persons)		6.0	45	14.78	5.075
Branch Age (Years) 2.0		62	21.31	9.799	
The number of years the respondents have worked in the branch.		1.00	39	9.16	8.054

The data were collected from seven banks in the proportion discussed in the previous chapter, totaling 277 bank branches. For data collection, questionnaires were distributed to bank branches in the Bangkok area. The main respondents were bank managers and assistant bank managers, and in some cases the managers assigned other staff to answer the questionnaires. From the data collection, bank managers and assistant managers of bank

branches were the respondents to the questionnaires at 88.81% and others assigned by bank managers were 11.19%.

Proposed Model

The proposed model of four factors (information technology support, teamworking, internal communication, and social network) and knowledge conversion

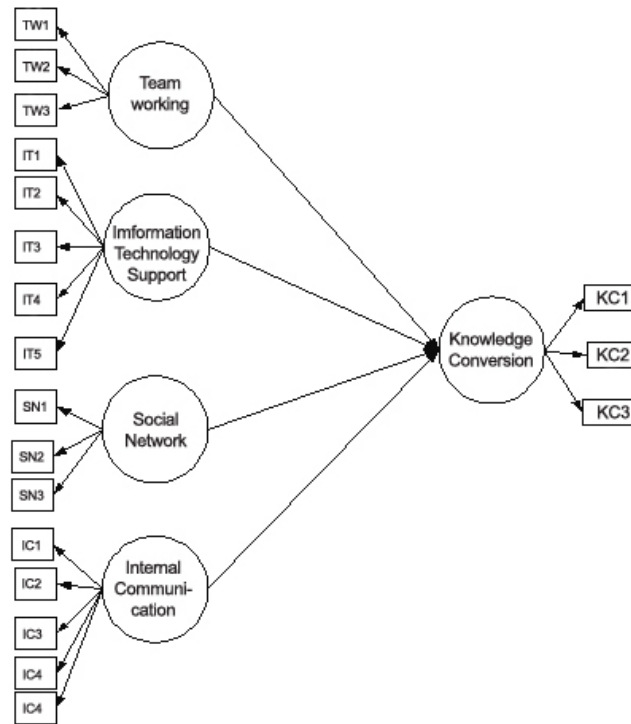


Figure 1: Proposed Model

Table 4: The Results of Proposed Model

Items	Fit Indices	Criteria
Comparative Fit Index (CFI)	0.930	>0.90
Normed Fit Index (NFI)	0.940	>0.90
Non-Normed Fit Index (NNFI)	0.948	>0.90
Incremental Fit Index (IFI)	0.948	>0.90

Note: Chi-square = 554.545 based on 148 degrees of freedom

Table 5: The Relation of Parameters and Parameter Estimates of Proposed Model

The Relation of Parameters	Standardized Estimates
Information Technology Support → Knowledge Conversion	.319* (5.189)
Teamworking → Knowledge Conversion	.168* (2.889)
Social Network → Knowledge Conversion	.3.73* (6.887)
Internal Communication → Knowledge Conversion	.294* (3.765)

Note: * indicated statistical significance at .05 and t-values are shown in parentheses.

The fit statistics exceeded the criteria of 0.90. CFI, NFI, NNFI and IFI were higher than 0.90. Therefore, it can be concluded that the model fit well with the data. Therefore, further analysis can be conducted.

This model showed the effects of the factors of information technology support (path coefficient = .319 and t-value = 5.189), social network (path coefficient = .373 and t-value = 6.887), teamworking (path coefficient = .168 and t-value = 2.889) and internal communication (path coefficient = .294 and t-value = 3.765) directly on knowledge conversion. This step indicates clearly the effects of four factors on knowledge conversion at the bivariate level, where social network and information technology support indicate highest influences on knowledge conversion respectively. The goal of this model is to study the direct impact of the four factors and knowledge conversion.

Conclusion and Further Research

This research has identified factors affecting knowledge conversion. The findings of this study provided that in order to achieve greater success in knowledge conversion activities, organizations have to focus on the effectiveness of these factors, including information technology support, social network, teamworking, and internal communication. Moreover, the roles of social network and information technology support appeared to have significant impacts on knowledge conversion of the organization. Therefore, organizations should focus more on these factors to improve the long-term performance of managing organizational knowledge. For the future, researchers can extend the development of these constructs for studying in the other dimensions of knowledge management research, such as the concept of knowledge management capabilities and the relationship between knowledge management capabilities and organizational performance.

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