# FACTORS INFLUENCING THE USE OF KNOWLEDGE MANAGEMENT SYSTEMS: A CASE STUDY OF THE MANUFACTURING SECTOR AND SERVICE SECTOR IN THAILAND

**KANYARAT KAMPROM**

**A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY PROGRAM IN BUSINESS ADMINISTRATION FACULTY OF BUSINESS ADMINISTRATION RAJAMANGALA UNIVERSITY OF TECHNOLOGY THANYABURI ACADEMIC YEAR 2016**

# FACTORS INFLUENCING THE USE OF KNOWLEDGE MANAGEMENT SYSTEMS: A CASE STUDY OF THE MANUFACTURING SECTOR AND SERVICE SECTOR IN THAILAND

**KANYARAT KAMPROM**

**A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY PROGRAM IN BUSINESS ADMINISTRATION FACULTY OF BUSINESS ADMINISTRATION RAJAMANGALA UNIVERSITY OF TECHNOLOGY THANYABURI ACADEMIC YEAR 2016**

| | |
|---|---|
| **Dissertation Title** | Factors Influencing the Use of Knowledge Management Systems: A Case Study of the Manufacturing Sector and Service Sector in Thailand |
| **Name – Surname** | Miss Kanyarat Kamprom |
| **Program** | Business Administration |
| **Dissertation Advisor** | Assistant Professor Youdthachai Lertworaprachaya, Ph.D. |
| **Dissertation Co-advisor** | Mr. Chalermsak Lertwongsatien, Ph.D. |
| **Academic Years** | 2016 |

---

**DISSERTATION COMMITTEE**

……..…..……. Chairman
(Associate Professor Kanibhatti Nitirojntanad, D.B.A.)

…….……. Committee
(Associate Professor Arunee Intrapairoth, Ph.D.)

…….……. Committee
(Assistant Professor Sungworn Ngudgratoke, Ph.D.)

……. Committee
(Mr. Chalermsak Lertwongsatien, Ph.D.)

……. Committee
(Assistant Professor Youdthachai Lertworaprachaya, Ph.D.)

Approved by the Faculty of Business Administration Rajamangala University of Technology Thanyaburi in Partial Fulfillment of the Requirments for the Degree of Doctor of Philosophy

……..…… Dean of Faculty of Business Administration
(Assistant Professor Nartraphee Chaimongkol, Ph.D.)
May 22, 2017

| | |
|---|---|
| **Dissertation Title** | Factors Influencing the Use of Knowledge Management Systems: A Case Study of the Manufacturing Sector and Service Sector in Thailand |
| **Name-Surname** | Miss Kanyarat Kamprom |
| **Program** | Business Administration |
| **Dissertation Advisor** | Assistant Professor Youdthachai Lertworaprachaya, Ph.D. |
| **Dissertation Co-advisor** | Mr. Chalermsak Lertwongsatien, Ph.D. |
| **Academic Year** | 2016 |

## ABSTRACT

A growing interest in knowledge management systems has led to rapid change in using the knowledge management systems in organization. Knowledge management consists of three important compartments including users, management, and technology. Information technology plays a crucial role in a knowledge management system (KMS) both in production and service of business.

The aims of this study were 1) to investigate the factors that influence the use of KMS in organizations especially in production and service, 2) to study the behavior of users who applied KMS in their organizations, and 3) to examine the results of applying Unified Theory of Acceptance and Use of Technology (UTAUT) in organizations. The population consisted of approximately 107,386 KMS users who are members of Thailand Productivity Institute. The randomized samples were 400 executive managers and employees. The research instruments included a survey questionnaire for collecting quantitative data and an interview for collecting qualitative data. The data from the questionnaire were collected from July to September 2016. Approximately 43 percent (172 out of 400 copies) of the questionnaire were returned. For qualitative data, users of KMS in both the production and service sections of four organizations were interviewed during November and December 2016. The four organizations were THAI Catering Department (Don Mueang), CAT Telecom Public Company Limited, TOT Public Company Limited, and Virtual Link Solutions Co, Ltd. (Vlink)

The data were interpreted using the structural equation model (SEM). The partial least square (PLS) regression was used to assess relation, accuracy and reliability of the collected data and hypotheses. The results showed that 59.60 percent of effort expectancy affected KMS intention while 50.60 percent of usage behavior had an effect on KMS intention. Only 33.70 percent of the facility condition directly affected usage behavior. In conclusion, factors which influenced KMS usage were performance expectancy, effort expectancy, social influence, facility condition, behavioral intention and usage behavior. The facility condition and KMS intention which directly affected the behavior of users were the mediator of the model.

**Keywords:** knowledge management systems (KMS), unified theory of acceptance and use of technology (UTAUT)

**Acknowledgements**

The success of this thesis was made possible by the extraordinary assistance from my advisor, Assistant Professor Dr.Youdtachai Lertworaprachaya, and from my co-advisor, Dr.Chalermsak Lertwongsatien. These two individuals provided invaluable counsel and suggestions throughout the entire process and, especially, helped me to correct problematic areas to make the research and this thesis as complete as possible. I express my deepest gratitude to my advisor and co-advisor.

I would also like to expressly thank Associate Professor Dr. Kanibhatti Nitirojntanad, Chairman of the thesis examination committee, and Associate Professor Dr. Arunee Intrapairoth and Assistant Professor Dr. Sungworn Ngudgrathoke, members of the examination committee for their high quality recommendations on how to improve the dissertation.

Full thanks go to Dr. Umawasee Sriboonlue, President of the Doctor of Philosophy Program in Business Administration, of the Faculty of Business Administration, of Rajamangala University of Technology Thanyaburi who kindly proof read my thesis to ensure accuracy and completeness.

I greatly appreciate Assistant Professor Dr. ReuangdateWongla, Rector of Uttaradit Rajabhat University (in office from 2014 to the present), Assistant Professor Sittichai Hansombat, former Rector of Uttaradit Rajabhat University (in office from 2004 to 2013), Assistant Professor Dr. Irawat Chomraka, Dean of the Faculty of Management Science (in office from 2012 to the present), and Assistant Professor Mani Chu-iat, former Dean of the Faculty of Management Science (in office from 2007-2011)Uttaradit Rajabhat University for their support for my educational scholarship throughout the entire period of study and for their support for the production of this thesis.

Special thanks go to the respondents to the data collection instruments, who work in the production and services sectors of industry. Their cooperation make the research possible, and I greatly appreciate that they sacrificed their valuable time to participate in the data collection and provided valuable recommendations. I am indebted to the authors of texts, research papers, and other academic documentation, domestic

and international, which helped me to understand the theoretical and practical foundations for this research.

My heart goes out to my Group 2 peers who provided love, motivation and mutual support.

Finally, highest gratitude goes to my family: My father Samran Kamprom, my mother Yanisa Kamprom, Lt. Col. Parinya Kamprom, Dr. Wichayaporn Kamprom, and Mr.Ronasit Chalermlap who provided magnificent inspiration and moral support which gave me the confidence and determination to successfully complete my higher education and produce this dissertation. The knowledge and wisdom I have gained from the process of this research and dissertation is dedicated to my parents and all those who supported me.

Kanyarat Kamprom

## Table of Contents

## Table of Contents (Continued)

## List of Tables

**Page**

## List of Figures

**Page**

## List of Figures (Continued)

**Page**

# CHAPTER 1
# INTRODUCTION

The world today is changing rapidly and, in particular, areas such as information technology (IT), marketing, services, products and manufacturing. Those areas require knowledge, high technology, creativity and knowledge management (KM) in order to gain advantages over their competitors. It is evident that products which are created by using high technology or machines are more valuable than other products. At present, the competition is changing from establishing a larger company to conducting faster processes. Therefore, KM is indispensable for applying new technology and managing efficient processes in an organization. The organizations that use knowledge, skills, and technology to produce their product gain more advantages than those who only use machines and equipment. KM consists of several essential steps including creating new knowledge, distributing the knowledge and using the knowledge. Apparently, the use of KM has become a key driver for today's economy which leads to the growth, wealth, and employment creation in all industries.

At present, organizations are confronting various problems in KM. Some organizations lack experts and specialists, knowledge is shared only narrowly, knowledge sharing is not considered as a part of the job description, there is no distribution of knowledge from persons who attend seminars, finding information takes a long time, the information obtained is out of dated and incomplete, the work is not continuous and often reverts to the beginning, the work has the same mistakes and lack of correct information, there is no creativity or new ideas, there is a lack of special training such as seminars, meetings and in-service training for workers, there is in effective use of knowledge and, finally, the knowledge is person-specific and usually disappears when personnel leave the organization.

Given these problems, many organizations in Thailand are attempting to find novel models and methods to improve their organizations, achieve efficiency, and improve competitiveness. Therefore, KM is a promising system for developing organizations. This study concentrates on the factors which affect the use of KM in the private sector in Thailand.

Chapter one provides an overview of the research problem which consists of background, statement of the problem, and the objective of the study. The research questions and hypotheses are discussed later, followed by depiction of the conceptual framework, definition of terms, limitations of the study, and organization of the study. Finally, this chapter presents the scope and outline of the study including expected outcomes from the research.

## 1.1 Background and Statement of the Problem

Knowledge Management (KM) is an important driver for performance of an organization. Moreover, KM is powerful for competitive advantage. A previous report stated that "The new keys to the future are composed of a well-developed mind, a passion to learn, and the ability to put knowledge to work" (SCANS Report). These correlate with the study of Hahn and Subramani which stated that "Knowledge management initiatives in an organization are increasing, and firms are making significant IT investments in deploying knowledge management systems (KMS)" (Hahn and Subramani, 2000). One of the organizations that supports KMS is the Thailand Productivity Institute (FTPI) which is under the supervision of the Ministry of Industry. As a leading organization with a reputation for conducting activities to improve productivity and competitiveness, FTPI provides a wide range of services, namely consultation, training, R&D, as well as schemes to further promote productivity in every aspect of Thai society. FTPI provides services in a total of six areas including consultation and training; productivity research; productivity promotion; publications; productivity knowledge center; and cooperation and academic exchange with international networks (Annual report 2014, FTPI, pp. 29).

FTPI applies KM for performance in the organization. First, it is important to understand the concept of KM within the organization. Second, check the tools and system in organization strategy for development. Third, create a KMS for the organization. Finally, KM has effectiveness in the organization.

The KMS can be visualized as a triangle. Goals stated by a KM initiative define the KM instruments that should be supported by the KMS's functions and control their deployment. The KMS component consist of the strategy, scope, organizational

design, type of contents, and cultural aspects. Participants and communities or knowledge networks are the targeted user groups that interact with the KMS in order to carry out knowledge tasks. The knowledge tasks are organized in acquisition and deployment processes required for the management of knowledge (Jafari et al., 2009).

KMS has been described as a comprehensive ICT platform for collaboration and knowledge sharing with advanced services that are contextualized, integrated on the basis of a shared ontology and personalized for participants networked in communities (Jafari et al, 2009). IT-based systems are developed to support and enhance the organizational process of knowledge creation, storage/retrieval, transfer and application (Aliavi & Leidner, 2001).

**Importance of the study**

This study applied the Unified Theory of Acceptance and Use of Technology (UTAUT) framework to examine the influence of factors on the use of KMA. UTAUT is a useful tool for new technology introduction. Moreover, the UTAUT framework helps users understand drivers of acceptance in order to proactively design interventions targeted at users that may be less inclined to adopt and use new systems (Venkatesh et al., 2003).

The UTAUT Model explains four important factors including the performance expectancy, effort expectancy, social influence, and facilitating conditions (Venkatesh et al., 2003) and four moderating variables including gender, age, experience and voluntariness of use. There is a relation between the KMS and behavioral intention to help business growth and confer competitive advantages for management.

## 1.2 Purpose of the Study

The purposes of this study are to extend the concept of the previous works as follows:

1.2.1 To examine the factors that influences the use of KMS;

1.2.2 To study the usage behavior of end users of KMS for organizations in Thailand;

1.2.3 Provide a UTAUT framework to adapt for KMS in organizations.

## 1.3 Research Questions and Hypotheses

### Research Questions

The research question of this study is “What are factors influencing the use of KMS in the individual level of an organization?”

### Hypotheses

### Performance Expectancy

Venkatesh et al (2003) defined performance expectancy as “the degree to which an individual believes that using the system will help a person to attain gains in job performance” (Venkatesh et al., 2003). Previous research reported that performance expectancy was a significant forecaster of behavioral intention.

Hypothesis 1: Performance expectancy will significantly influence intention to use KMS.

### Effort Expectancy

Effort expectancy is defined as “the degree of ease associated with the use of the system”. Previous research suggested that latent variables related to effort expectancy were significant in determining a person’s intention to adopt new technology (Zhou et al., 2010; Venkatesh et al., 2012).

Hypothesis 2: Effort expectancy will significantly influence intention to use KMS.

### Social Influence

Social influence means the extent to which a person perceives how they should use the technology. Previous research demonstrated that social influence was significant in determining an individual’s intention to use new technology (Moore and Benbasat, 1991; Venkatesh et al., 1996; Thompson et al., 1991).

Hypothesis 3: Social influence will significantly influence intention to use KMS.

### Facilitating Conditions

Facilitating conditions means the extent of availability of technical support for using the new technology (Venkatesh et al., 2003).

Hypothesis 4: Facilitating conditions will significantly influence intention to use KMS.

**Intention to KMS use**

Based on primary theory for all of the intention models discussed above we expect that behavioral intention would be the best predictor of actual behavior.

Hypothesis 5: Behavioral intention will significantly influence intention to use KMS.

## 1.4 Conceptual Framework

This research integrates a conceptual model to understand the variation of KMS usage based on the UTAUT framework (Venkatesh et al., 2003).

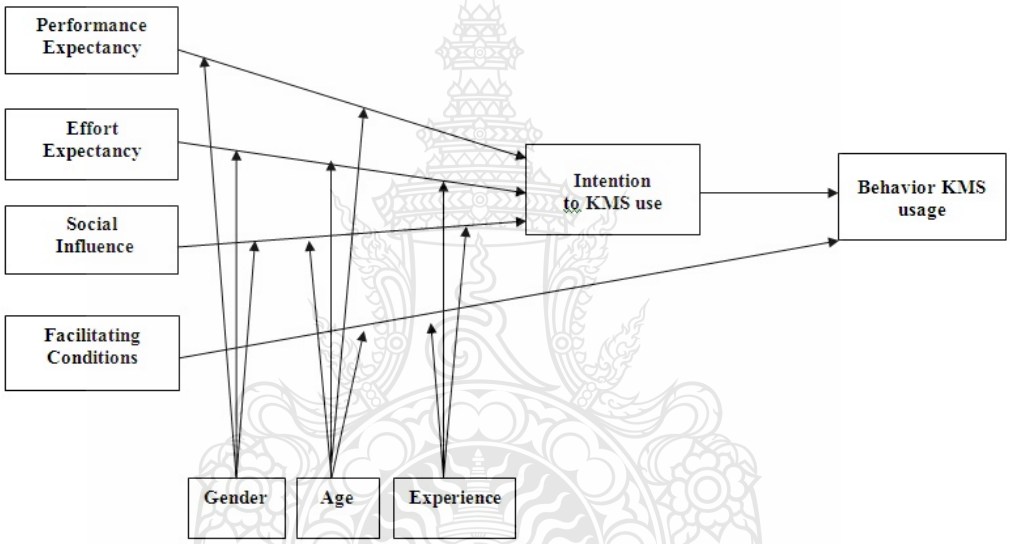



**Figure 1.1** Conceptual model for extent of KMS use in manufacturing and service sectors in Thailand

## 1.5 Definition of Terms

KM in the organization refers to the practice of selectively applying knowledge from previous experience for making decisions and improving the organization's effectiveness (Jennex, 2005).

KMS refers to IT-based systems developed to support and enhance the organizational process including knowledge creation, storage/retrieval, transfer and application (Aliavi & Leidner, 2001).

UTAUT involves intention to use, behavior acceptance, and use of technology at the individual or organizational level. Those are influenced mainly by the performance expectancy, effort expectancy, social influence, and facilitating conditions. The moderating variables in relation to usage behavior are gender, age, experience and voluntariness of use (Venkatesh et al., 2003).

Organization culture refers to organizational culture which has been extensively studied in management research KMS.

### 1.6 Delimitations of the Study

This study focuses on the individual level that uses KMS in organizations including the government and private sectors. The second delimitation concerns the sample size that require large size and also data security. The final limitation is the finding of best models for contribution of the factors influencing the use of KMS in the organization.

### 1.7 Structure and Content

This research report is organized into five chapters. Chapter One provides the conceptual perspective including background and statement of the problem, purpose of the study, research questions and hypotheses, conceptual framework, delimitations of the study, and structure and content. Chapter Two identifies and proposes the literature review related to this study. A comprehensive literature review is conducted in order to establish a basis for this study founded on principles, theories and research of the UTAUT framework which influences use of the KMS in an organization. Chapter Three describes the methodology and description of the research which consists of research design, population, sampling, data gathering, research instrument, and data analysis.

**1.8 Expected benefits to be derived from the research**

This research may be useful for the KMS in the business sector as follows:

1.8.1 Explain and understand the behavior of people or organizations in using a new IT system.

1.8.2 The findings in this research may be useful guidelines for researchers and practitioners for ongoing study in the future.

1.8.3 This model will provide a useful tool to help understand and predict intention to use the KMS in organizations and contribute to the competitive advantage for organizational performance.

# CHAPTER 2
# REVIEW OF THE LITERATURE

## 2.1 Introduction

In this chapter, the author will start with the information technology (IT) acceptance concept since it is the current emerging viewpoint. The knowledge management (KM) system review from the organizational IT usage will be consequently discussed, followed by the Unified Theory of Acceptance and Use of Technology (UTAUT) reviews. Next, the researcher will review both academic and practical approaches on the effort expectancy, performance expectancy, facilitating conditions and social influence, followed by the behavioral use and intention. At the end, the organization application of KMS will be mentioned since it is the research's focus area.

## 2.2 Knowledge Management Systems (KMSs)

### 2.2.1Definition of KMS

Aliavi&Leidner (1999) observed that "Knowledge management is an organizational systemic and specified process to acquire, communicate and organize information for the explicit knowledge and tactics of employees for them to use it with more effectiveness and productivity toward their work"

**Table 2.1** Definitions of Knowledge Management Systems

| **Authors** | **Definition of KMS** |
|---|---|
| Gray, (2000) | The subject of considerable interest of the academics and practitioners in the past decade. |
| Peter H. gray, (2000) | The subject of considerable interest of academics and practitioners from the past decade, with less cumulative empirical research, to place the causal mechanisms of the influence of KMS on organizational performance. |
| Aliavi&Leidner, (2001) | The development of IT-based systems will support and enhance knowledge creation, application, transfer and storage/retrieval processes in the organization. |

**Table 2.1** Definitions of Knowledge Management Systems (Cont.)

| Authors | Definition of KMS |
|---|---|
| Gole et al., (2001), Holsapple& Singh, (2001) | Anticipated to allow for more adaptability and flexibility with subsequently long-term competitiveness of the firm for survival. |
| Adams & Lamont (2003), Country Monitor (1998) | Networked systems where the leveraged knowledge and information are shared with the whole enterprise, and internet–based access is also provided for the suppliers and customers globally. |
| H.Hasan&E.Gould, (2003) | An "activity" using architecture in the unit of analysis which is able to implement together in the current approaches and technologies. |
| Money, (2004) | A web–based tool for management and document repository |
| William Money, (2004) | A web-based management tool and document repository with the primary intent to support the goals of the organization. |
| Jun Xu& Mohamed Quaddus, (2005) | It involves IT systems application with other resources in the organization for the strategic knowledge management in a more systematic and effective way. |
| Speier& Poston, (2005) | Facilitation of the company's intellectual resources sharing in efficient and effective ways. |
| Khalifa, Yan Yu and NingShen, (2008) | The specific organizational knowledge processes and resources-focused information system. |
| Jennex&Olfman, (2011) | IT/ICT components included in the system with the users, repositories, using processes and/or knowledge generating, knowledge use culture, and the initiative for KM. |
| Muhammed, J.Doll, Deng, (2011) | Offering the organization the benefits but including risks either from technical or IT-related factors, plus, the KM-related cultural, behavioral and strategic factors, similar to various information systems (IS) types. |

**The KM process can be divided in seven types as follows:**

1. Knowledge Identification is when the KM committee and teams from the network of all organizational units jointly consider the mission, vision, objectives and the strategic issues of the organization, as well as the analysis to accomplish those objectives. This considers whether the knowledge is required and selects the crucial and necessary knowledge for the organization to process for KM. Goals are set with the scope of KM that is integrated with ongoing plan.

2. Knowledge Creation and Acquisition is setting the form of activity or project to generate and seek selected knowledge to process through KM such as the

setting for training, inviting the people with knowledge and diverse experience to join meetings or work together in teams across the work lines or convening the seminar for brainstorming, etc.

3. Knowledge Organization is to gather the empirical knowledge and knowledge of people to systematically store it for quick and convenient access to develop a manual of operations, and knowledge web archive to be the up-to-date source of learning.

4. Knowledge Codification and Refinementis to form the confidence that the gathered knowledge is the correct knowledge, up-to-date and benefits use in the real operations. Producing an operations manual making must involve the qualified committee members who have high experience in KM to check, filter and adjust content for accuracy before publishing in any media.

5. Knowledge Access Access is to allow the organization personnel to conveniently access the knowledge by storing information via the advanced communication technology system or in the organizational website, library or the learning corner of the units as well as any publicized forms.

6. Knowledge Sharing is the activity launched for the organization personnel to exchange the knowledge such as the venue for knowledge exchange, KM Day activity and inviting people with diverse knowledge and experience to meet or work in a team or broadcasting the knowledge via IT systems such as a Web board.

7. Learningrefers to the personnel that received the new knowledge and experience. This involves applying the knowledge to the operations for further development for the creative initiative in the development, planning improvement and further creation of the organization’s innovation management.

**Learning pyramid theory**

Yamazaki described the Learning Pyramid Theory based on research about the knowledge characteristics. Knowledge can be divided into four types, from the base up to the top, in which each type of knowledge will have the different characteristics but with the following relationships:

Data are the facts related to some story from observation without the analysis process or classifying into categories, i.e., it is raw data.

Informationis the data that has passed the analysis process and has been systematically categorized for the benefit in each subject.

Knowledge is the information that has been processed through a comparison process in connection with other knowledge, and creates new understanding until it can be used for the benefit in summarizing and decision-making for any situation without time limitations.

Wisdomis the application of knowledge to resolve the problem or develop the personnel functions in the organization.

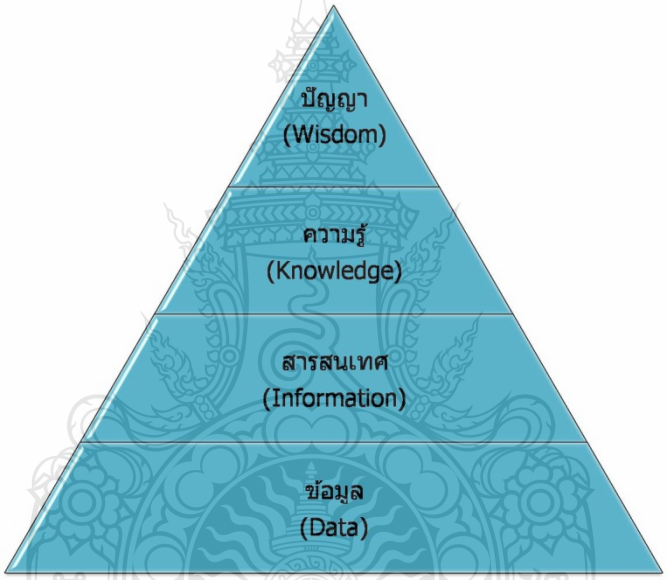



**Figure 2.1** Learning pyramid theory

Knowledge Spiral or SECI Model

This is the concept by Nonaka& Takeuchi which is another theory on a simplified understanding of KM that is better suited for Thai culture in which knowledge is transferred inter-personally. From the knowledge perspective, Explicit Knowledge and Tacit Knowledge alternate until the new knowledge is formed and never stops growing. Knowledge exchange can be divided into four methods.

1.Socialization is the knowledge sharing and exchanging from Explicit Knowledge to Tacit Knowledge by exchanging the direct experience of people through

informal communication. It can take the form of meeting to exchange experiences, methods of problem solving, and work training between supervisor and subordinate.

2.Externalizationis to transfer the knowledge from Tacit Knowledge into Explicit Knowledge. It is to extract the knowledge from people and transmit it into written form such as textbooks and operation manuals.

3.Combination is the gathering of knowledge from the Explicit Knowledge, and refers to the knowledge gathering from the textbook and books.

4.Internalization is to bring the Explicit Knowledge into the knowledge base. Tacit Knowledge is to apply the knowledge to practice, such as when the supervisor writes the operations manual for the subordinate to read and use.

It can be seen that the activity is the stimulus for the KM process to apply the learning and promote innovation. Most of the organizational problems result from various factors such as KM activity that did not aim to manage the core knowledge, or did not aim at the core mission of the organization, or the knowledge exchange that was not on the core issue that is important for the improvement of operational efficiency and effectiveness. An important shortcoming is that the organizational personnel do not search for knowledge stored in the database to benefit the work. There is a lack of confidence in the accuracy of existing knowledge since there is no clear knowledge filteringsystem.

**KM Tool**

The following tools need to be used for KM to improve efficiency and effectiveness for the organizational personnel:

1.Communities of Practice, orCoP,are the group of people from the same work group with the formal or informal interest in some subject with the aim to exchange the knowledge and form the new knowledge on the subject of interest.

2. Cross-Functional Teamis a work team or committee whose members work together under the belief that the success of any task requires having specialists from various aspects to exchange experiences and work together.

3.After action review,orAAR,is the mutual review of the working process to seek opportunity and obstacles in the operations. From the AAR, we may identify the

good practices and the guidelines toward the improvement of performance. The AAR is used to test on the level of goals accomplishment.

4.Dialogueis for the group members exploit the best attributes of each participant without too narrow a scope. The final answer is unknown, and there is no time limit for each person. It is an open space with the friendly atmosphere for those who joined in the activity.

5.Peer Assistanceis the giving or receiving suggestions or the valued experiences from people or the organization that can contribute to success on the subject.

6.Action Learningis to learn from the real practice to assess the cause and leads to the problem solving by improving operational effectiveness.

**2.3 Theory of Information Technology Acceptance (IT acceptance)**

The study of human behavior regarding technology acceptance has the following theoretical basis:

**2.3.1 Theory of Reasoned Action (TRA)**

The TRA as proposed by Fishbein and Ajzen (1980) is one of the social psychology theories that has been applied to most human behavior [1] to explain the relationship between the attitudes and beliefs on behavior. Changes in human behavior result from the unwavering faith and individual behavior since it is considered as the proper actions because former actions will always be reconsidered by people (Fred D Davis, 1989). The TRA has been deployed in individual recognition technology research (Bagchi, Kanungo, &Dasgupta, 2003).

According to TRA, although individual behaviors are caused from the party's decision, the factors have directly determined the behavior which is the intent to reflect the behavioral intention. This is driven by two major reasons related to theoretical TRA, attitudes toward behavior and the norms of the surrounding behavior (Subjective norms).

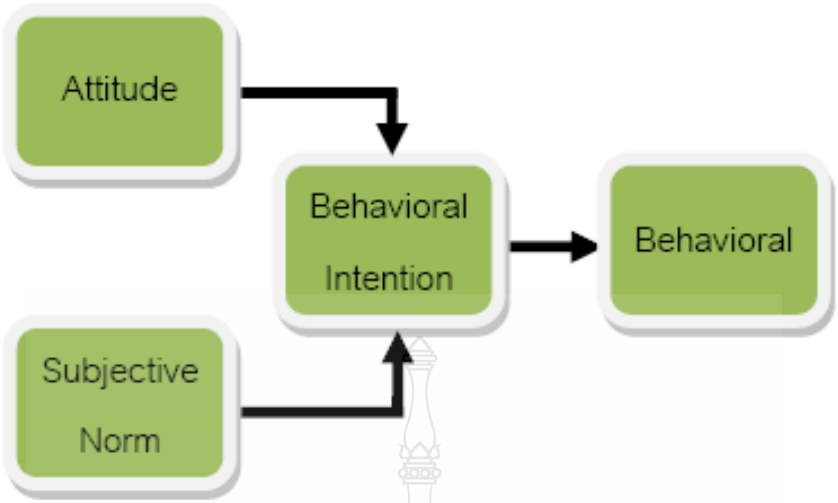



**Figure 2.2** The model of relationship in the TRA (Fishbein and Ajzen, 1975)

Figure 2.2presents the factors of attitude in an individual in which the overall assessment will be conducted based on their beliefs and gives the behavioral results either on positive or negative feelings. The positive outcome results from the beliefs in individual behavior; guests tend to have the positive attitude toward the behavior while, if the results are negative, guests tend to end such behavior.

The surrounding behavior or norm is the individual perception through expectations. The group of individuals in the society is important to them, whether to reflect their behavior or not. This has motivated individuals to fulfill other individual requirements in the society, especially from the groups like the family or colleagues in the party. However, there still are limitations in TRA since the individual behavior may not truly reflect intentions if there is complexity in the ability to control one's action (Ajzen, 1991).

**2.3.2 Theory of Planned Behavior (TPB)**

Ajzen(1985) proposed the Theory of Planned Behavior (TPB) which is the social psychology theory that was developed into the TRA by Ajzen (1991) to increase the awareness of behavioral control. In any behavioral display (perceived behavioral control) to lessen the theory limitation, TRA can be applied in the study. In various contexts, behavior can form the understanding in individual adoption of technology (Taylor and Todde, 1995b; Harrison et al, 2003).

TPB studies the individual behavior principles that have been driven by the intended behavior. There are three influential factors on the behavioral intention, namely, the attitude toward the behavior, surrounding behavior or norms, and the perceived behavioral control. The relationship among the above TPB theoretical model is shown in Figure 2.3

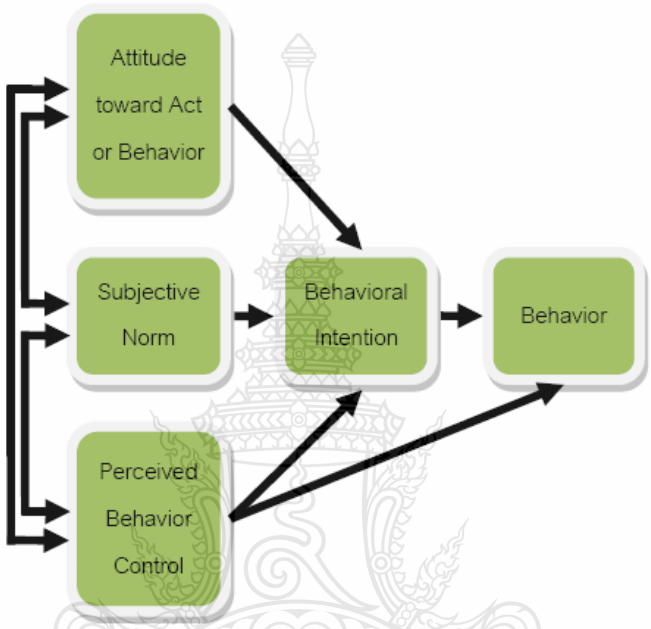



**Figure 2.3** The model factors of the relationship between TPB (Ajzen, 1991).

Figure 2.3shows that the relationship between intention/behavior is influenced by the attitude behavior, norms of the surrounding behavior, and the perceived behavioral control in various ways. The direct influence on the behavioral recognition is their behavior control before display which is acknowledged as the ease and difficulty of the behavior. If it is perceived by people that they can, in such circumstances, behave to achieve the desired results, they will be more likely to display the behavior.

Ajzen (2002) also believed that several of factors are under control by the person, for instance, the skills and knowledge as well as the external factors like other individuals. Any facilitating conditions on the use of factors such as the perceived behavioral control reflect the behavior that is determined from the individuals' belief towards the factors, for example continual operations that could promote or inhibit the

control beliefs behavior and the recognition of the power of the factors that influence confidence (Efficacy) for the persons to behave in a certain way. However, there are some limitations of TPB that affects the ability of TPB to explain attitudes and behavior. Possible errors include the restrictions from the inconsistencies between individual willingness and their actual behavior over time (Fred D. Davis, 1985). Thus, this leads to the theory of the Technology Acceptance Model, or TAM development.

**2.3.3 Technology Acceptance Model (TAM)**

A technology acceptance model or TAM was established as a theory to measure the success of customizable technology, as proposed by Davis (1985). Additional to TRA as a theoretical model, TAM development and study focused on the information systems adopting concept; the party theme is unlikely with the surrounding behavior applied to the actual behavior prediction. As can be seen in Figure 2.4 the model adapted by Fred D Davis, Bagozzi, &Warshaw (1989) or TAM has excluded the attitude toward the behavior. It intends for a more thorough explanation (Venkatesh, Morris, Davis, & Davis, 2003) and ability to predict the individual's IT adoption according to Davis et al. (1989). Moreover, it tries to describe the relationship between intention and behavioral recognition of technologies. The relationship between the theoretical TAM according to Davis (1989) is shown in Figure 2.5 below.

Although TAM can be effectively used for the IT adoption forecasting, Taylor and Todde(1986) said that there are some limitations of TAM. In addition, Malhotra and Galletta(1999) mentioned factors that result in actual use. They only intended to show the behavior that leads to further expansion of the TAM development via different factors included for the study of the IT adoption context for wider coverage (Chan & Lu, 2004; Kim & Malhotra, 2005)

The principle of TAM studies on the influential factors on the behavioral intention in IT use consists of four aspects: external variables (External variables), recognizing the benefits of IT (Perceived usefulness or PU), recognizing the ease of system usage (Perceived ease of Use or PEOU), and Attitude toward use. The relationship between TPB in the above theoretical model is shown in Figure 2.6.

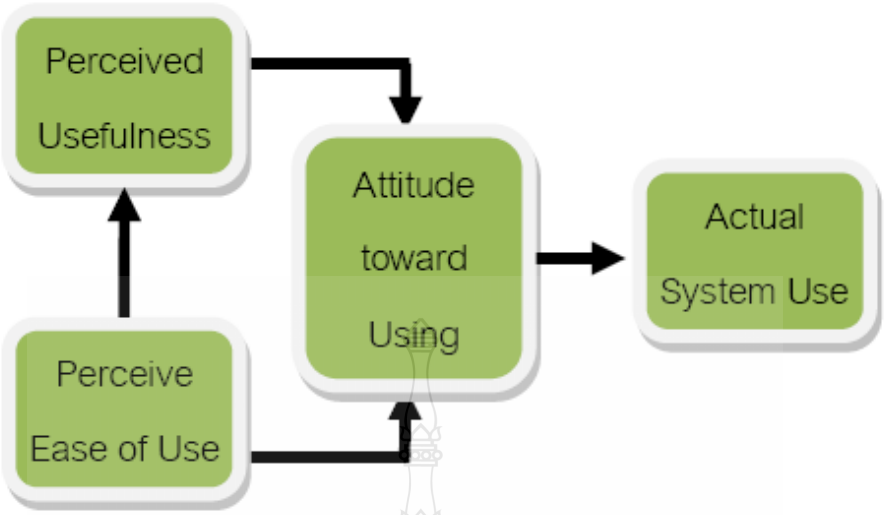



**Figure 2.4** The original model of TAM (Fred D. Davis, 1985)

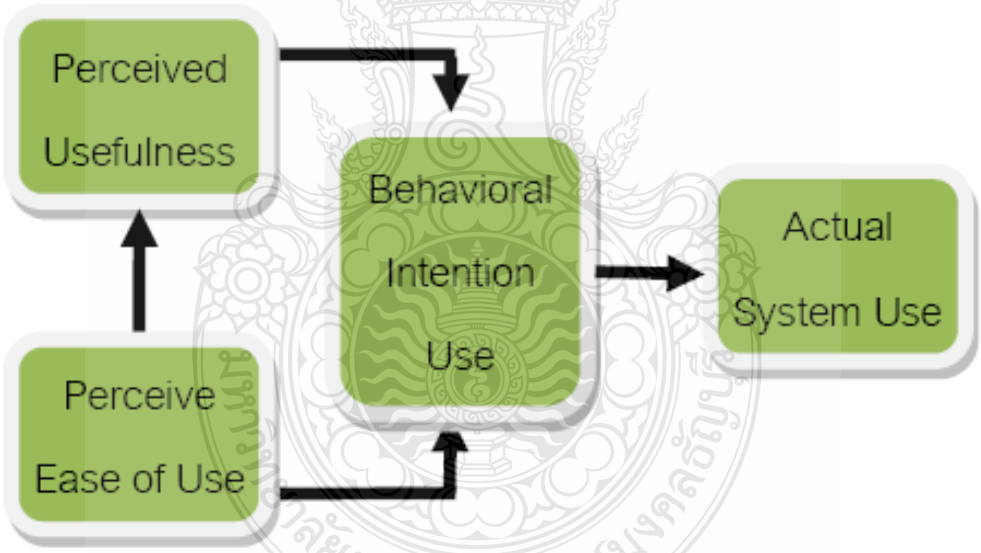



**Figure 2.5** The model of the relationship of factors with TAM(Fred D Davis et al., 1989)(Venkatesh et al., 2003).

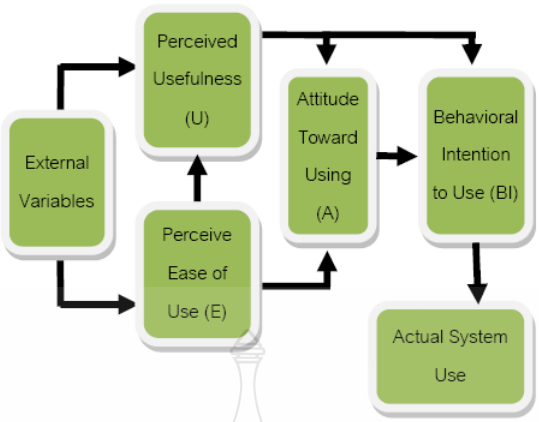



**Figure 2.6** The model further extends the relationship between TAM and factors (Davis et al., 1989).

Figure 2.6shows that external variables, for example, demographic science (Demographic) and experience (Previous experience) can influence the perception of the benefits to be gained from IT and the perception that the system is easy to use.

Recognizing the benefits of IT is a determinant for recognition that IT will help in the performance improvement and have direct effect on the behavioral intention.

The perception that the system is easy to use is a factor to determine the terms of success or volume, and whether it will meet the expectations or needs. The factors also affect the IT benefits perception as well.

Attitudes toward work are influenced by the perceived benefits of IT and the perception that the system is easy to use, while the willingness to show active behavior has been influenced by attitude of use and the recognition of IT benefits and all results for the adoption of practical use. In addition, past research results demonstrate the need to include other variables into the TAM to form a better understanding on how to describe new technology adoption in individuals (Rivera Green, 2007). Also, there is the need to explain the reason that a person becomes aware of the information systems benefits (Venkatesh& Davis, 2000).

Accordingly, Venkatesh and Davis proposed TAM2 to further expand and develop TAM to help forecasting the system behavior. The research by Mei-Ying Wu et al, (2008) studied the relationship of web 2.0 website behavioral usage by TAM2.

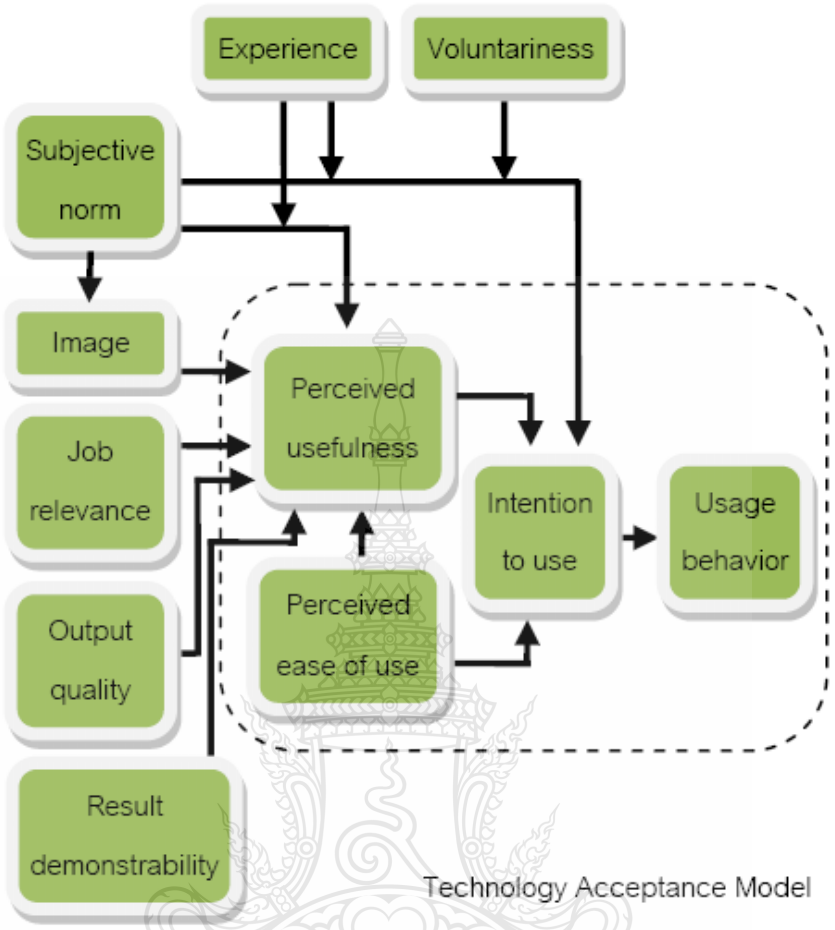



**Figure 2.7** The model further extends the relationship between the TAM 2 (Mei-Ying Wu et al, 2008)

TAM2 has improved the external variables and previously arising factors (antecedents) that influence the perception of the IT benefits and perception of the ease of system use, to give more up-to-date information. The research identified the social influences, such as: (1) the norms of surrounding behavior (2) voluntariness, and (3) image throughout the process. Intellectual (cognitive instrumental process) factors include: (1) Job relevance (2) Output quality (3) Results demonstrability, and (4) recognizing that the system is easy to use. Thus, these are the factors contributing to the new technology adoption that is introduced as a new concept.

As for the TAM2 norms of the surrounding behavior, the key determinants for the intention to use and the influence on the IT benefits perception and the positive

image, moderating variable, experience and voluntariness are coupled and linked between the intention of use and the norms of the surrounding behavior.

It also found that the factors may include the quality of results that can be demonstrated prior to the influences on the benefits perception from the IT. The norms from the surrounding individuals will also positively influence the using intention.

**2.3.4 Model of PC Utilization (MPCU)**

MPCU is based on the Theory of Inter-personal Behavior by Triandis(1977). MPCU has been used in the information systems context to forecast the use of personal computers, and the model is suitable to be used for individual IT adoption forecasting (Thompson et al., 1991).The model is used to forecast the use behavior rather than to explain the intention (Al-Khaldi& Wallace, 1999; Thompson, Higgins, & Howell, 1994)

The principle of MPCU is that personal computer use is driven by: (1) the long-term consequences; (2) the belief in the ability of information systems to enhance performance (Job-fit); (3) innovations that are easier or more difficult to use (Complexity); (4) effects of applications on emotions, such as joy, delight, fear, embarrassment or resentment (Affect toward use); (5) the relationship from social factors between the cultural expression and treatment on each other in social situations (Social factor); and (6) the facilitation conditions which are the factors promoting theease of operations, for instance, systems to support the computer equipment.

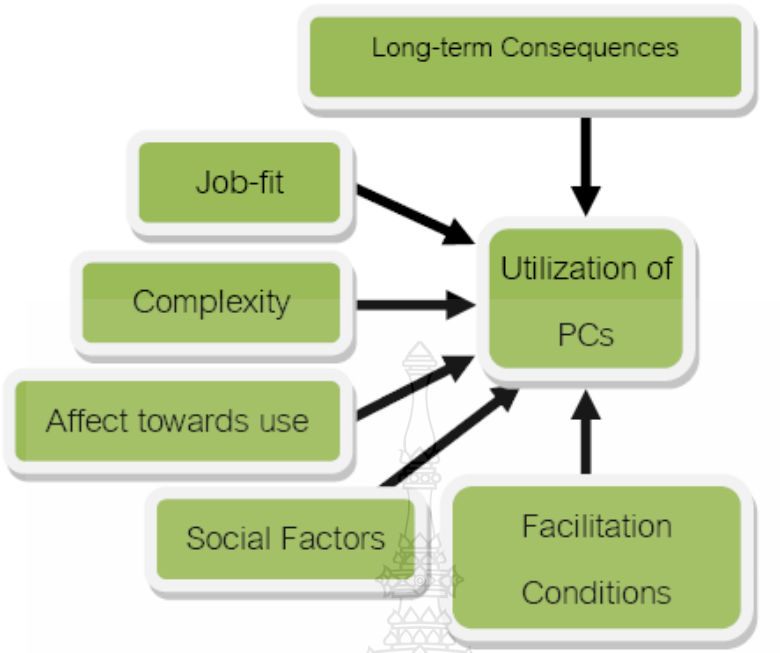



**Figure 2.8** The relationship between MPCU and factors(Thompson et al., 1991)

### 2.3.5 Diffusion of Innovation Theory (DOI)

The DOI Theory is a basic tenet of sociology proposed by Rogers in the 1960s to study the published innovations of Moore and Benbasat (Characteristics of innovation) from the Theory of Property (The theory of perceived attribute). This is one of the key elements for which DOI Theory is popularly applied to study individual adoption of innovation (Agarwal & Prasad, 1997; Blake, Neuendorf&Valdiserri, 2005; Cheung, Chan, &Limayem, 2005).

The innovative features present the easier acceptance of innovation as featured by five reasons: (1) Innovation has the relative advantage on the recognition of innovation which can be better used than before; (2) Ease of use is the recognition on the ease of innovation usage; (3) Visibility: It can be observed others in the organization on information systems use; (4) Compatibility is consistent to the needs or experiences of people with the innovation potential; and (5) The results can be presented prior to obtaining benefits from the innovation use and that must be able to be tangibly observed.

### 2.3.6 Motivational Model (MM)

MM, as proposed by Vallera, is used in psychological research. Education incentives can affect the behavior as stated in the study by Fred D Davis, Bagozzi, &Warshaw (1992) on the adoption of new technologies (Chenoweth, Minch, &Gattiker, 2009; Igbaria, Parasuraman, &Baroudi, 1996; Smith, Johnston, Shanks, & Rahim, 2007).

The Principles of Motivation Theory are the process of incentive or motivation that occurs with individuals who take the effort to push for the ongoing actions with certain guidelines for the desired goal accomplishment. This behavior is caused by various stimuli to drive and respond. Intrinsic motivation is the recognition that there is the motivation from the direct relationship of the individual to interact with the extrinsic motivation and to recognize the human motivation that could take place when the person expects, after finishing their work, to get things they expected from it. In this model, the person needs compensation or reward from the work done.

### 2.3.7 Social Cognitive Theory (SCT)

SCT is one of the theories used to study human behavior as presented by Bandura (1986). According to the theory, it describes the behavioral intention of individuals that will be driven by their own confidence or self-efficacy and the outcome expectation. Compeau& Higgins (1995b) studied the SCT in the computer-use context to see how it can be applied to IT adoption (D. Compeau, Higgins, & Huff, 1999; D. R. Compeau& Higgins, 1995).

The principles of SCT are that the behavioral intentions of individuals can be driven via five factors: (1) Performance expectancy that results in the expectation-performance outcome; (2) Self-expectancy, or personal expectation of outcome; (3) Confidence of users; (4) Effect, the consequences of the behavior from the personal preference behavioral consequences from computer use; (5) Anxiety, or the feeling of concern or the reaction that occurs when using a computer.

### 2.3.8 Combined-TAM-TPB (C-TAM-TPB)

C-TAM-TPB, is a theory developed by Taylor and Todde (1995a) to further expand the annexation of TAM norms of the surrounding behavior as well as the recognition of their own behavioral control from TPB in combination with TAM in data

storage which is even more complex (Taylor & Todd, 1995). From their own behavioral control recognition, the individual behavior reflects the barriers to use the individual skills and norms of the people surrounding them, with limitations to identify group opinion from people in society that may be crucial for the users in the future (Lin, Wang, & Hwang, 2010; Mathieson, 1991).

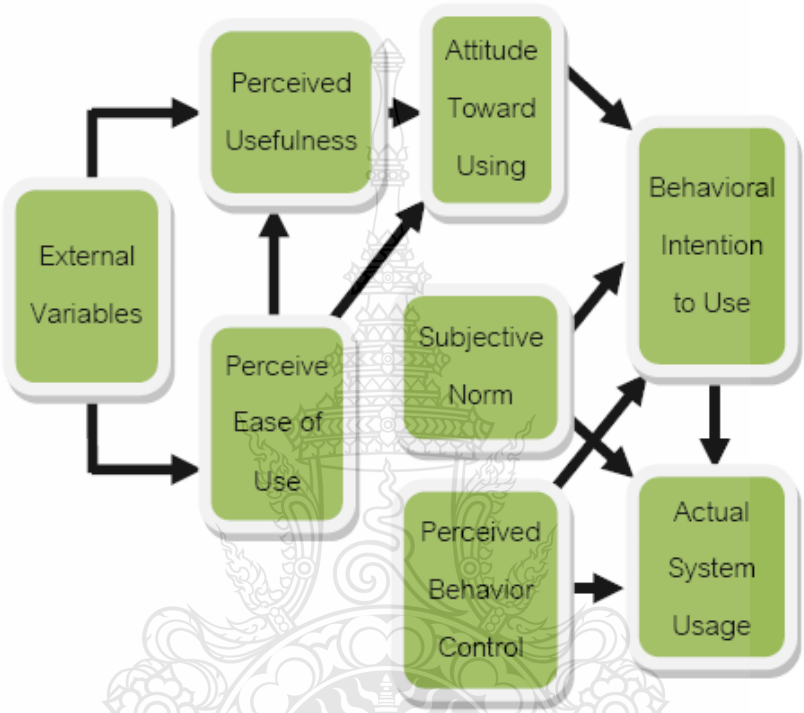



**Figure 2.9** The relationship between CTAM-TPB and factors (Taylor & Todd, 1995)

Figure 2.9shows the relationship between behavioral intention to use and actual usage which is directly influenced by norms of the surrounding behavior and the perceived of behavioral control.

**2.3.9 Unified Theory of Acceptance and Use of Technology (UTAUT)**

UTAUT encompasses eight model theories and was first proposed by Venkatesh et al., (2003). UTAUT has been mostly applied to theoretical problems rather than practical applications. Therefore, there is a need to explain technology adoption of each model under the theory (Unified theory) based on the relationships among various

factors about technology adoption in the individual sectors (such as entertainment, telecommunication, banking, and pubic administration) with the behavioral intentions as the primary variables (Ajzen, 1991).

UTAUT has been driven by behavioral intention. The factors which influence behavioral intentions are: (1) Performance expectancy; (2) Effort expectancy; and (3) Social influence which are the facilitating conditions to direct applications with the relation on the usage habits. There are four variables: (1) Sex (2) Age (3) Experience and (4) Voluntariness of use with the crucial link to the eight model theories. The relationship between the factors and parameters/variables of UTAUT is presented in Figure 2.10.

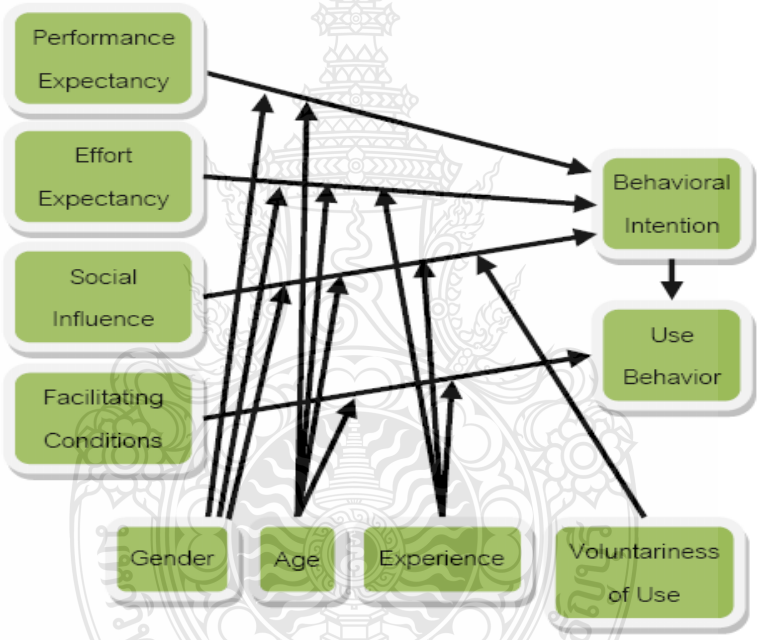



**Figure 2.10** The factors of the relationship between UTAUT and factors (Venkatesh et al., 2003)

Figure 2.10The relationship of behavioral intention/behavior is influenced by three main factors while the facilitating conditions have a direct influence on the behavior in the parameter/variable model which is expanded from the main factors that are responsible for the intention that influences usage behavior across many key areas.

Although we can use the model to efficiently forecast UTAUT recognition technology, the variable is an extension model that can boost the accuracy of predictors. However, it is shown from the recent research that only a small number of factors under

the main factor, without the field parameters/variables, is applied. Therefore, it is important to expand and develop the scope of theories to seek the salient factors that can cover the education in the technology user's context with the focus on consumer technology use. The group has a lot invested on these individuals on whether they use the new technology application and the target group of the service. A different emphasis is on the technology using conditions within the employees' business organizations (UTAUT) and the consumer technology condition (UTAUT2), thus, leading to the modified model development of UTAUT or UTAUT2.

The above restriction is applied to Venkatesh and colleagues' extended model of modified UTAUT development into UTAUT2. There are three factors, namely, the incentives on entertainment (Hedonic motivation), value (Price value) and chronic (Habit) that can reduce restrictions. This can be used to better explain the intention to use technology in the consumer behavioral context.

The concept of UTAUT2 focuses on the specific context intention and, more particularly, on the consumer technology context since the new concept proposed byAlvesson&Kärreman, (2007); and Johns(2006) argues that the new context can cause significant changes in theory on various aspects regarding the new context. The relationship between the factors may not significantly correlate anymore or there could be a shift of the relationship between factors (either or indirect relation), or may cause a new relationship between factors. These can cause changes in theory and lead to new knowledge creation.

Using the UTAUT2 principle to study the people that are driven by behavioral intentions factors that influence their behavioral intention, there are seven aspects: (1) performance expectancy, (2) effort expectancy, (3) social influence, (4), facilitating conditions, (5) incentives entertainment, (6) value and (7) the familiarity on three variables: (1) sex (2) age and (3) experience, except the variable of voluntariness. The study cannot be operated since the sample is based on the Consumer Mobile internet voluntary relationship between the factors and UTAUT2 theory model as shown in Figure 2.11.

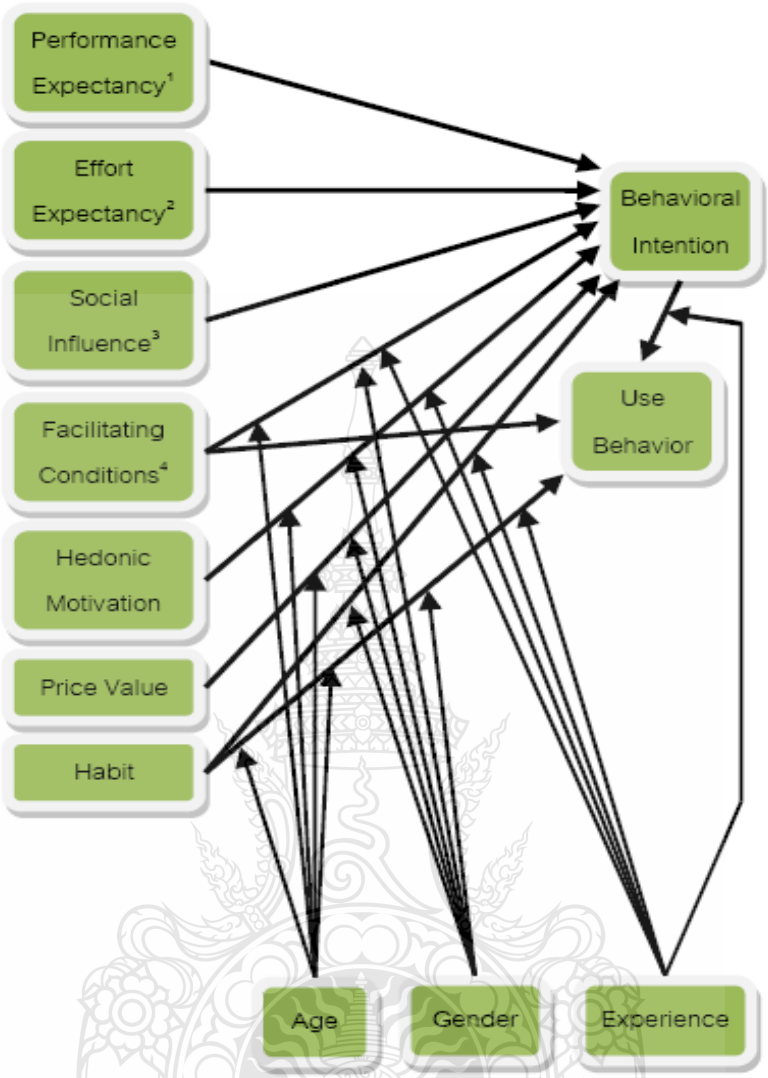



**Figure 2.11** The relationship between UTATU2 and factors (Venkatesh et al, 2012)

The relationship between behavioral intentions is influenced by seven key factors: (1) performance expectancy, (2) effort expectancy, (3) social influence, (4) facilitating conditions, (5) incentives entertainment, (6) value, and (7) the conditions that will facilitate the implementation with the direct influence on spending behavior. For the parameters/variables, there are three variables with the new relationship to influence behavioral intentions in four main areas: (1) What conditions facilitate the usage, (2) incentives entertainment, (3) value and (4) routine that appear on the solid line. The parameters/options vary from the experience on the behavioral intentions to use.

Thus, the changes that occur can be summarized as follows: (1) the three crucial factors were added into the UTAUT2 model are derived from the recent research results on common technology adoption by consumer. The four crucial factors from the UTAUT model are the review, comparison, analysis, and synthesis theory of IT adoption based on eight theoretical studies in the employee sector; the relationship changes in the UTAUT model and the new relationship between the factors that will be described in the next section.

**Table 2.2** Factors of technology acceptance of Knowledge Management Systems

| Factors | Authors | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Fishbein& Ajzen, 1975 | Davis, 1989 | Venkatesh& Davis, 2000 | Davis, 1992 | Ajzen, 1991 | Taylor & Todd, 1995 | Thompson et al, 1991 | Moore & Benbasat,1991 | Compeau& Higgins,1995 | Venkatesh et al, 2003 |
| Attitude Toward Behavior | ✓ | | | | ✓ | ✓ | | | | ✓ |
| Subjective Norm | ✓ | | ✓ | | ✓ | ✓ | | | | ✓ |
| Perceived Usefulness | | ✓ | ✓ | | | ✓ | | | | ✓ |
| Perceived Ease of Use | | ✓ | ✓ | | | | | | | ✓ |
| Extrinsic Motivation | | | | ✓ | | | | | | ✓ |
| Intrinsic Motivation | | | | ✓ | | | | | | ✓ |
| Perceived Behavioral Control | | | | | ✓ | ✓ | | | | ✓ |
| Job-fit | | | | | | | ✓ | | | ✓ |
| Complexity | | | | | | | ✓ | | | ✓ |
| Long-term Consequences | | | | | | | ✓ | | | |
| Affect Towards Use | | | | | | | ✓ | | | ✓ |
| Social Factors | | | | | | | ✓ | | | ✓ |
| Facilitating Conditions | | | | | | | ✓ | | | ✓ |
| Relative Advantage | | | | | | | | ✓ | | ✓ |
| Ease of Use | | | | | | | | ✓ | | ✓ |
| Image | | | | | | | | ✓ | | ✓ |
| Visibility | | | | | | | | ✓ | | |
| Compatibility | | | | | | | | ✓ | | ✓ |
| Results Demonstrability | | | | | | | | ✓ | | |
| Voluntariness of Use | | | | | | | | ✓ | | |
| Outcome Expectations Performance | | | | | | | | | ✓ | ✓ |
| Outcome Expectations Personal | | | | | | | | | ✓ | ✓ |
| Self-efficacy | | | | | | | | | ✓ | |
| Affect | | | | | | | | | ✓ | ✓ |
| Anxiety | | | | | | | | | ✓ | |

The overview of the KMS technology acceptance variable factors from the nine theories for technology adoption consist of 1) The theory of reasoned action: TRA, 2) The theory of planned behavior: TPB, 3) The technology acceptance model: TAM, 4) The model of PC utilization: MPCU, 5) The diffusion of innovation theory: DOI, 6) The motivational model: MM, 7) The social cognitive theory: SCT, 8) A model combining the technology acceptance model and the theory of planned behavior: C-TAM-TPB, and 9) Unified Theory of acceptance and use of technology: UTAUT.

**2.4 Composition of ATIP revenue role as the determinants of user acceptance**

The role of the model factors on the above elements of the relationship between UTAUT and UTAUT2 is determined by the user acceptance and the application behavior (Venkatesh et al., 2003). There are different levels based on the relationship of each direct or indirect factor that affects the using behavioral intention. The role of each factor in each model will be used as the operational measure based on the indicators, either similar or dissimilar, and, thus, leads to the factors as indicated below.

**2.4.1. Key factors and the indications of the direct relationship to intention / behavioral using of UTAUT model.**

The factors indicate that there is a direct relationship between the willingness and the usage behavior that can be classified into four groups according Venkateshet (2003): (1) performance expectancy, (2) effort expectancy, (3) social influence, and (4) ease of use, which are discussed in more detail below.

**Performance Expectancy**

This is the belief in individual efficiency that is able to help increase the operational efficiency in the technology users. Factors associated with the significant similarities to the performance expectations consist of five indicators: (1) the IT benefits recognition (TAM and C-TAM-TPB) that can be measured from the output level (Productivity), performance (Performance), effectiveness (Effectiveness) and benefits (Usefulness); (2) the belief of the individual in the ability of information systems. Using information systems to adopt the measure for functional optimizing (MPCU) of the impact on the application performance or the effect on the job performance to shorten the work time and to increase the quality of results and the effectiveness, with the enrichment of the quantity of output that can be applied to assist

the job; (3) external motivation (MM) is used to measure the efficiency, effectiveness and productivity benefits and the awareness of the IT benefits (TAM and C-TAM-TPB). This also includes the level of success measurement (Accomplish) and the ease of use, and (4) the expected results of the work (SCT) also being used for effectiveness measurement by less time spent to achieve more work quality. The expectations are for the others to see their own abilities and the opportunity to be promoted, and (5) the innovation with the advantage or the advantage over (DOI) which is used to measure the successfulness on the productive quality of work, ease of use, productivity, and benefits.

**Effort Expectancy**

Effort Expectancy is the simplicity of use. Factors associated with this concept are similar to the expectations in an effort which contains the three indicators: (1) recognition that the system is easy to use (TAM/TAM2) so that it does not require much effort (Free of effort); (2) difficult or easier innovation to use (MPCU) measures the level of complexity, time, learning; and (3) easy to use (DOI) is used to measure the difficulty of being understood (Understandable) and time-consuming.

**Social Influence**

Social influence is the recognition of the individual in their beliefs and expectations in new IT usage. Factors associated with the concept of social influence are: (1) norms of the surrounding behavior (TRA, TPB, TAM/TAM2 and C-TAM-TPB) that measure the act as worthy or unworthy, and (2) social factors (MPCU), which measures the surrounding people influenced such as the supervisors and colleagues.

**Facilitating Conditions**

Facilitating conditions refers to the individual belief in the organizational infrastructure that will promote the usage. There are three factors that are related or have the same conditions to facilitate the deployment: (1) behavioral control recognition where TPB and C. -TAM-TPB are adopted to measure the availability of required resources to gain advantage, knowledge and ability. However, Ajzen (1985) showed that the Hierarchical or Higher-order model explains the perceived details of behavioral control in various ways which it is created from the confidence of users. Bandura (1986) measured the person's capabilities and their control ability. Control

requires the availability of resources to exploit the knowledge and capabilities; (2) conditions that facilitate the use of (MPCU) is to measure the availability of required resources in taking advantage of, and (3) consistency or the user (DOI) that measures the levels of agreement (Compatible) and (Fit).

**2.4.2. Factors with the indirect relationship with the behavioral intention by the UTAUT model**

Factors are classified into three areas: (1) attitudes towards the use of technology; (2) trust of users; and (3), anxiety, with details as follows:

**Attitudes toward technology use**

The entire feeling is the individual reaction on the use where there are four factors from this group: (1) attitudes toward behavior (TRA TBP and C-TAM-TPB) was used to measure the level of good or bad, ignorance – interest, pleasant – unpleasant, and like - unlike, (2) intrinsic motivation (MM) are used to measure the levels of satisfaction, (3) effect from the use (MPCU) is used to measure on the level of interest and fun, and (4) the consequences of the behavior (SCT) measures the level of frustratingand anxiety.

**Self-efficacy**

This refers to the individual ability to use (SCT) to measure the knowledge, capacity and availability of resources required to gain advantage.

**Anxiety**

This is a reaction to the behavior while using a computer (SCT) and it is used to measure the level of feeling (Feel), hesitancy (Hesitate), fear (Scares/intimidating), and the confidence of users. Anxiety (SCT) is a factor with a direct relationship to intention as shown from Venkatesh& Davis (2000) that the confidence of users comes from knowledge, skills, etc. while hesitancy , fear, etc. are the anxiety factors that are indirectly related to intention (Venkatesh& Davis, 2000). Through the perception that the system is easy to use from the confidence of users, the anxiety is, thus, different from the effort expectancy since the perception of the ease of system use is the simple example in terms of concepts to observe the indicator.

### 2.4.3. Moderating variable in the UTAUT model

The role of four key moderator variables: gender, age, experience and voluntariness are crucial in linking of the eighth theoretical model which was found to increase the accuracy of model prediction to be even more effective after the extension of the model.

## 2.5 Organizational Culture

The organizational culture, as defined by Schein (1985), is the set of implicit assumptions held by the group members that can determine the way to behave and respond from the group to its environment. The conceptual organizational culture consists of three distinctive cultural types: bureaucratic, innovative, and supportive (Wallach, 1983)

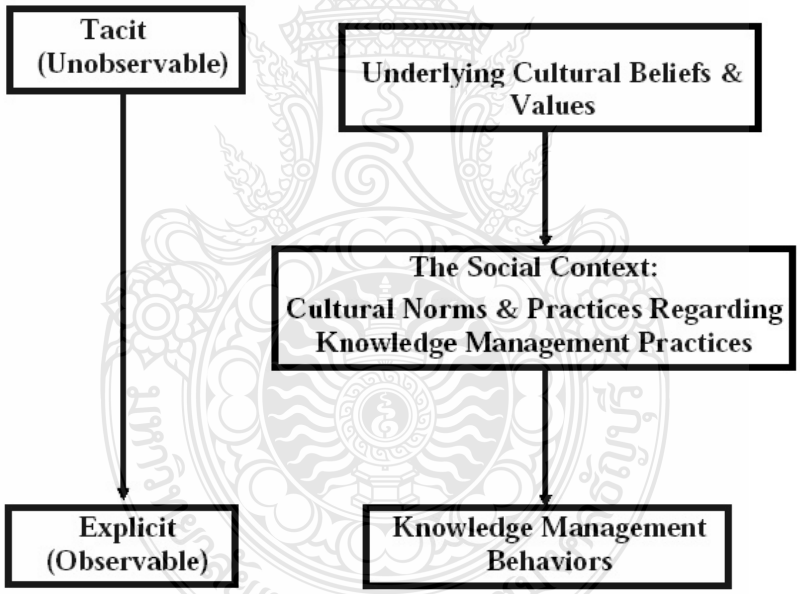



**Figure 2.12** The impact of organizational culture on KM behaviors (Leidneret.al., 2006).

Figure 2.12explains the conceptual linkage between culture and KM behavior. Moreover, it gives a useful explanation of the conceptual linkage between culture and KM behavior. However, further explanation is required to inform the understanding on the cultural types that exist within the organization

# CHAPTER 3
# RESEARCH METHODOLOGY

## 3.1 Introduction

This chapter presents a model/theoretical framework and research design for the study entitled “Factors influencing the use of knowledge management systems: a comparative study of end users between the manufacturing sector and service sector in Thailand”. The research design consists of research hypotheses, research instruments, population and sample, pilot study, reliability analysis, validity analysis, data collection, data analysis, and time table. This chapter also includes a summary of relevant points and overview of the next chapter.

## 3.2 Model/ Theoretical Framework

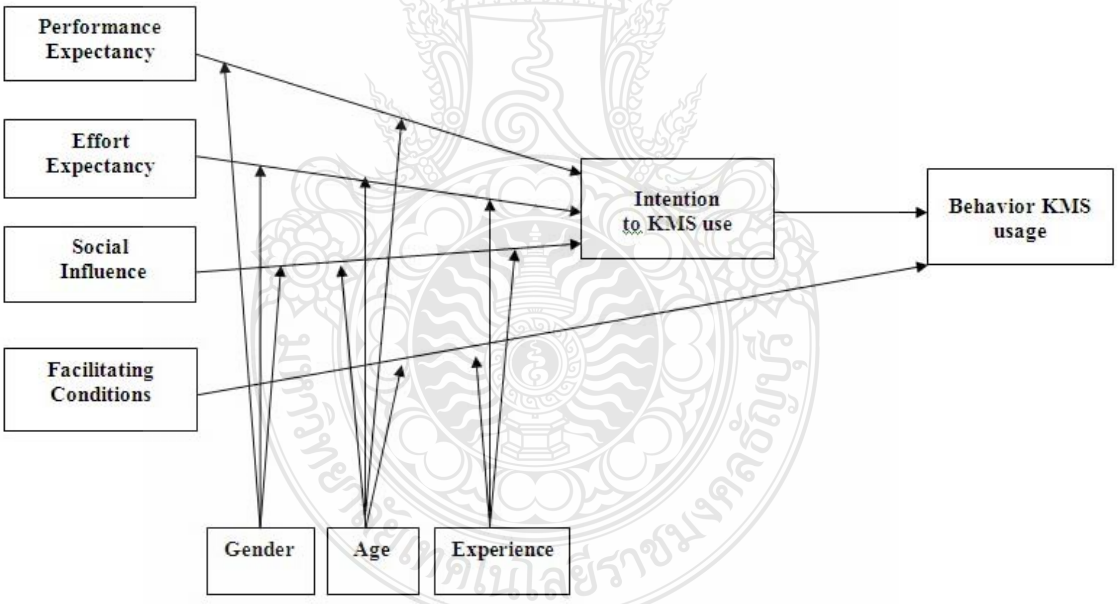



**Figure 3.1** Conceptual model for extent of KMS using in organization

Research Hypotheses

Hypothesis 1: Performance expectancy will have a positive influence on intention to KMS usage.

Hypothesis 2: Effort expectancy will have a positive influence on intention to KMS usage.

Hypothesis 3: Social influence will have a positive influence on intention to KMS usage.

Hypothesis 4: Facilitating conditions will have a positive influence on intention to KMS usage.

Hypothesis 5: Behavioral intention will have a positive influence on KMS usage.

### 3.3 Research Design

This research combines qualitative and quantitative data collection. The target population and sample were obtained from such organizations in Thailand as education, government, private sector, and financial institution. Structured self-administered questionnaire and in-depth interviews were used to collect data. In addition, the interviews were done with the CIOs and end users of organizations in Thailand. The close-ended questionnaires were sent to KMS users who were randomly sampled from the name lists of the organizations in Thailand. The questionnaires consisted of the indicators with a five- points Likert scale, ranking from 1 (strongly disagree), 2 (quite disagree), 3 (slightly disagree), 4 (neither agree nor disagree) and 5 (slightly agree). The overall of research design in particular is explained in the following sections.

#### 3.3.1 Population and Sample

This study was interested in the KMS usage of organizations in Thailand listed in the Office of Knowledge Management and Development (OKMD). The population for the study consists of the current end users in both manufacturing and service sectors. The organization samples consist of two sectors including following sub-groups.

**Table 3.1** The population from Office of Knowledge Management and Development

| No | Population Subgroup | Sector | Population (N) | Sample (n) |
|---|---|---|---|---|
| 1 | CAT Telecom Public Company Limited | Service | 6,403 | 24 |
| 2 | TOT Public Co., Ltd. | Service | 16,498 | 61 |
| 3 | Kasikornbank Public Co., Ltd. | Service | 21,614 | 81 |
| 4 | Bank For Agriculture and Agricultural Co-operatives | Service | 19,288 | 72 |
| 5 | Siam Cement Public Company Limited | Manufacturing | 34,901 | 130 |
| 6 | PTT Exploration and Production Public Co., Ltd., | Manufacturing | 2,208 | 8 |
| 7 | Sermsuk Public Co., Ltd. | Manufacturing | 6,105 | 23 |
| 8 | Dynasty Ceramic Public Co., Ltd. | Manufacturing | 369 | 1 |
| | Total | | **107,386** | **400** |

Source of Data: Annul Report year 2015, April 2015.

The sampling technique researcher used SRS (Simple Random Sampling) for sampling from each strata by proportion. Kline (2003) proposed that the Structure Equation Model (SEM) depends and is sensitive on the sample size. Bentler and Chou (1987) recommends that sample size should be 5 matter per available for normal data. However, Loehlin (1992) indicates that the sample size should be at least 100 cased, but it is preferable at 200 cases. Whereas, the population size is 107,386 and sample size is 400 end users. This study uses the partial least square (PLS) path modeling, which sample size is SEM condition.

**3.3.2 Instrument**

The framework for this study was developed from theories and concepts related to the workplace. The design of this study at individual level is based on qualitative and quantitative approaches. Qualitative approach in this study is the interviews of chief information officers (CIO) in use KMS. In additions, quantitative approach is the questionnaires for KMS usages in the organization. The first part is to ask for demographic information of the participants and interview for chiefs information officers (CIO) about KMS in organization. The second part of the questionnaire

contains the questions about the UTAUT to KMS usage. The questionnaire is developed from 31 items of the survey from Venkatesh el al. (2003) as well as 38 items of the survey from Kijsanayotin et al. (2009) based on 5 dimensions with a 7-point Likert-scale. The full survey is shown in appendix A.

Furthermore, the questionnaire was translated into Thai language and all parts of the questionnaires were validated by experts in human resources and management. Finally, a pre-test of the instrument was implemented to assess reliability.

### 3.3.3 Pilot Study

A Pilot Study is a pre-study that uses a small experimental design. The researcher collects data from a small group for testing and improving the qualities and efficiency of the instrument. Moreover, the questionnaire will be translated into Thai language and will be tested the reliability for directly and correctly measurement. The details of questionnaire are provided in Appendix A.

### 3.3.4 Reliability Analysis

The reliability is defined as the boundary to which questionnaire, test, observation or any measurement procedure produce the same results on repeated trials (Cooper & Schindler, 2003). The internal consistency reliability is related to the scope that the items on the test or the instrument are measured for the same thing. If the individual items are highly correlated with each other, it could be confident that the instrument is high reliability of the entire scale. The instrument of this study consists of the indicators which measure the level of three factors: performance expectancy, effort expectancy, social influence, and facilitating conditions factors. There is a five- points Likert scale rating, ranking from 1 (strongly disagree) to 5 (strongly agree). Hence, the coefficient alpha (Cronbach, 1951) was applied. Ho (2006) proposed that the value of Cronbach's alpha should be above 0.80.

## 3.4 Data Collection

The validity and reliability of the original instruments in this study were assessed using the three steps of translation model proposed by Brislin (1970, 1986) in order to avoid the distortion of cultural effects and ensure that the Thai-translated version still maintains accuracy of original intent.

The first step was a forward translation from the original version in English into Thai. Then, the Thai version was reviewed by a monolingual reviewer who can communicate only in Thai to adjust incomprehensible or ambiguous wordings. For this study the instrument was reviewed by two clerks with little communication experience in English. The last step was a back-translation of the Thai version into English. For this study the instrument was back-translated by a university professor and a human resources manager. The translated version was reviewed and evaluated for content validity by three professors in the information systems field. Finally, the complete translated instrument was pre-tested.

### 3.5 Data Analysis

The data analysis begins by rechecking for completion of the questionnaires collected from the subjects. The purpose is to summarize the content. The result can be described from the research questions. Moreover, the final recheck number of usable questionnaires is done from missing or uncompleted sets of data. Finally, the data from completed questionnaires are analyzed.

**Descriptive Statistics**

Descriptive statistics included frequencies, mean, variance, and standard deviation. Descriptive statistics were applied to gender, age, marital status, education, experience in the company, current position, department, and frequency of KMS use.

**Partial Least Square (PLS)**

The research model applied the PLS path modeling. This method is quite robust against manifest variables' skewed distributions, multi-co-linearity within blocks of manifest variables and between latent variables, and misspecification of the structural model (Caselet al., 1999:2000 and Jurgenet al. 2005).

PLS path modeling simultaneously evaluates the measurement model and the structural model by relating the associated constructs. The measurement model is part of the research model which portrays the relationships between a construct and its associated manifest variables (measurement items). A PLS path model analyzes and interprets data in two stages: (1) assessment of the measurement model by examining the reliability and validity of the composite of items measuring each construct, and (2)

assessment of the structural model. The interpretation sequence aims to ensure that there is a reliable and valid measurement of constructs before drawing conclusions regarding the relationships among those constructs.

The research study used PLS path modeling for model analysis because our project attempted to predict factors that influence IT acceptance and IT use. This study leaned more toward a predictive research model than a theory-confirmatory model. We also wanted to simultaneously evaluate the reliability and validity of the measures of the constructs in the model and estimate the relationships among these constructs.

Furthermore, many manifest variables in our research data were not normally distributed. In addition, there is potential multi-co-linearity between latent variables in the model. Finally, PLS path modeling has been commonly used by information systems researchers and those investigating technology adoptions, including those who conducted the study that developed the UTAUT model.

### 3.6 Chapter Summary

Chapter Three explains the research methodology including the model/theoretical framework, research hypotheses, the instrument, population and sample, pilot study, reliability analysis, validity analysis, data collection, data analysis, and timetable. The next chapter will present the results of this study.

# CHAPTER 4
# RESEARCH RESULTS

## Introduction

This chapter presents data preparation, followed by the pre-test, refining and reliability analysis, construct assessment and validity analysis, structure equation model of research model/theoretical framework, hypothesis testing, and results. This chapter concludes with a summary of results, the relevant points and an overview of the next chapter.

## 4.1 Data Preparation

This section presents how data was prepared before the analysis, beginning with the population and sample, and testing of the normal distribution of data.

### 4.1.1 The Population and Sample Rate

The population of this study were individuals in organizations listed in the Office of Knowledge Management and Development (OKMD), which were under control by the Securities and Exchange Commission (SEC). The organization samples were selected from both manufacturing and service sectors in Thailand. The population universe was 107, 386 users. The samples were obtained through stratified random sampling technique from eight strata of organizations, and simple random sampling from each stratum by proportion. The sample size was calculated using Yamane's formula (1973) with sampling error 5%, yielding a prescribed sample size was 398 users. The actual sample was 400 respondents. The data collection instrument was pre-tested with 30 individuals. The researcher sent the finalized questionnaire to 400 employees of the eight organizations. Data collection spanned April 2015 to March 2016.

### 4.2.2 Normal Distribution of data

Before performing the statistical analysis, the normal distribution of the data was tested. Normal distribution was assessed by considering skewness and kurtosis. The normal distribution has zero skewness and zero kurtosis (Pearson, 1895). First, skewness is measured by standardizing the difference between mean and mode. The

skewness scores from the sample were between -1 and +1 (Hildebrand, 1986). West and Finch (1997) proposed that the value of skewness index should be between -3 and +3 to approximate the normal distribution. Decarlo (1997) suggested that the kurtosis scores should be between -3 and +3 to assume that data is normally distributed. Besides, Karl (2005) proposed that the skewness score and kurtosis score from a large sample (n ≥150) were approximately normally distributed. Furthermore, Rose et al. (2015) suggested that we can assessed normal distribution by using the standard error of both skewness and kurtosis from specialist-statistics package such as SPSS. Applying the rule of dividing each value by its standard error, give 0.76 for skewness and 0.68 for kurtosis, both well within limits, and for the large samples can use , it is confirmed that the samples were normally distributed (Rose et al., 2015).

The results indicate that the value of skewness ranged from -1.475 to 3.000 with standard error of skewness of 0.472, and the value of kurtosis ranging from -1.776 to 2.697 with standard error of kurtosis of 0.918 (presented in Appendix A). Therefore, the normal distribution assumption was satisfied. Furthermore, the results of exploration by using a histogram with normality curve found that all of variables can assume normal distribution.

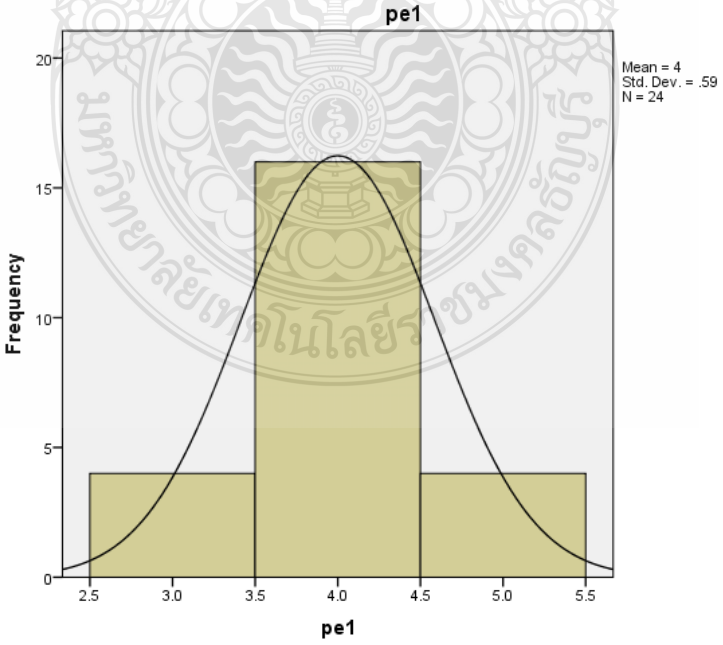



**Figure 4.1** Normal Distribution of Performance Expectancy

### 4.2 Partial Least Square (PLS)

Most of research at present use many factors or complex variables such as marketing research, social research, etc. Thus, the data analysis must be use advance statistics, for example, multiple regression analysis (MRA), factor analysis, discriminant analysis, logistic regression, etc. These techniques are first-generation techniques which belong to the core set of statistical instruments that are able to identify and confirm theoretical hypotheses based on analysis of one simple model at a time (Haenlein & Kaplan, 2004; Piriyakul, 2010). The limitations of these techniques are 1) the postulation of a simple model structure with one dependent and several independent variables, 2) all variables are considered as observations (McIntosh & Lobaugh, 2004; Haenlein & Kaplan, 2004), and the estimate of all variables are measured without error.

The research in many disciplines require to models which are more complex and more realistic, and this means that there are many dependent variables, given the desire to investigate the effect of mediating or moderating variable on the relationship between one or many dependent and independent variables (Hair et al., 2010; Haenlein & Kaplan, 2004).

Joreskog developed a new technique by using covariance, namely, the structure equation model (SEM) in 1973. SEM is a second-generation model which analyzes the relationship between variables at multi-levels, both inner structure model and outer structure model at the same time (Haenlein & Kaplan, 2004; Piriyakul, 2010). SEM has 2 types 1) Covariance-Based SEM (CBSEM) which analyzes by maximize similarity between covariance structure. The examples of Covariance-Based SEM are LISREL, AMOS, EOS, and SEPATH (Chin, 1998b; Haenlein & Kaplan, 2004). 2) Variance-Based SEM (VBSEM) which analyzes by using ordinary least squares method (OLS); the statistical software for VBSEM is PLS (Chin, 2001; Haenlein & Kaplan, 2004).

PLS is a modern statistical technique developed by Wold in 1966 (Haenlein & Kaplan, 2004; Abdi, 2007). PLS combines features and ability from principle component analysis (PCA) of factor analysis and multiple regression (Abdi, 2007; Piriyakul, 2010). The goal of PLS is analysis, discrimination and prediction of the set of dependent variables from a very large set of independent variables (Haenlein & Kaplan,

2004; Abdi, 2007). PLS first became popular in chemometrics (Wold, 2001; Abdi, 2007) and, now, PLS is becoming a tool of choice in the social sciences (McIntosh & Lobaugh, 2004). Consequently, PLS is flexible and has the advantage that it involves no limitations about the assumption of the population as scales of measurement (Fornell & Bookstein, 1982; Haenlein & Kaplan, 2004) and it works without normality of distribution (Haenlein & Kaplan, 2004; Piriyakul, 2010). Moreover PLS-SEM can work particularly well with small sample sizes (Hair et al., 2011), the appropriate sample size should not be less than ten-fold of the number of indicators of latent variables or 100-200 observations (Chin, 2001; Hairetal., 2010).

### 4.3 Demographic Summary

In this section we present the respondent and organization's demographic information comprising gender, age, status, education, work experience, position, type of the organization and number of employees.

**Table 4.1** Summary of Respondent's Demographics

| Characteristics | Frequency | Percent |
|---|---|---|
| **Total** | **172** | **100.00** |
| **Gender** | | |
| Male | 61 | 35.47 |
| Female | 111 | 64.53 |
| **Age** | | |
| Lower 30 years old | 18 | 16.47 |
| 30-39 years old | 46 | 26.74 |
| 40 years old onward | 108 | 62.79 |
| **Marital status** | | |
| single | 81 | 47.09 |
| married | 85 | 49.42 |
| divorced | 6 | 3.49 |

**Table 4.1** Summary of Respondent's Demographics (Cont.)

| Characteristics | Frequency | Percent |
|---|---|---|
| **Total** | **172** | **100.00** |
| **Education levels** | | |
| Lower than Bachelor degree | 6 | 3.49 |
| Bachelor degree | 112 | 65.12 |
| Master degree onward | 54 | 31.39 |
| **Work experiences** | | |
| 1-3 years | 13 | 7.56 |
| 4-5 years | 12 | 6.98 |
| 6-9 years | 20 | 11.63 |
| 10 year onward | 127 | 73.84 |
| **Position** | | |
| Division head level | 75 | 43.60 |
| Operations level | 97 | 56.40 |
| **Type of organization** | | |
| Financial business | 11 | 6.40 |
| Service business | 28 | 16.28 |
| Real estate and construction | 9 | 5.23 |
| Technology and communication | 124 | 72.09 |
| **Number of employee** | | |
| not over than 300 personnel | 8 | 4.65 |
| more than 300 but not over than 500 person | 5 | 2.91 |
| more than 500 but not over than 1,000 person | 2 | 1.16 |
| more than 1,000 person | 157 | 91.28 |

The data were collected during December 2015 to April 2016. The respondents were end users of their organization and the majority of the respondents were female (64.5 percent) and age 40 years or more (62.8 percent). About half were married (49.4 percent), with a bachelor's degree (65.1 percent), work experience of ten years or more (73.8 percent), and working at the operations level (56.4 percent). The

type of host organization is technology and/or communication (72.1 percent) and the number of employees was more than 1,000 (91.3 percent).

**Table 4.2** Summary of KMS using behavior in the organization

| Characteristics | Frequency | Percent |
|---|---|---|
| **Total** | 172 | 100.00 |
| **Frequency of use KMS per week** | | |
| 1 time per week | 105 | 61.05 |
| 2-3 times per week | 33 | 19.19 |
| 4-5 times per week | 10 | 5.81 |
| more than 5 times per week | 24 | 13.95 |
| **Time period as the member in KMS** | | |
| 1-5 months | 53 | 30.81 |
| 6-10 months | 12 | 6.98 |
| 12 months | 7 | 4.07 |
| more than12 months | 100 | 58.14 |
| **Accessing into KMS to record the content per months** | | |
| 1- 4 times per month | 148 | 86.05 |
| 5-8 times per month | 9 | 5.23 |
| 8-12 times per month | 4 | 2.33 |
| 13 or more times per month | 11 | 6.40 |
| **Using KMS to searching for information per week** | | |
| 1 time per week | 100 | 29.17 |
| 2-3 times per week | 32 | 29.17 |
| 4-5 times per week | 16 | 9.30 |
| more than 5 times per week | 24 | 13.95 |

The frequency of use KMS in the organizations was 1 time per week (61.0 percent), the time period as a member in KMS was more than12 months (58.1 percent), accessing KMS to record data occurred 1- 4 times per month (86.0 percent) and using the KMS to search for information occurred 1 time per week (58.1 percent).

### 4.4 Result of Constructs

This section presents the descriptive statistics of the six constructs of the research model including performance expectancy, effort expectancy, social influence, facilitating conditions, behavioral intention and usage behavior.

#### 4.4.1 Results of performance expectancy

This part was presented the descriptive statistics including mean and standard deviation of the first construct which was performance expectancy.

**Table 4.3** Mean and Standard Deviation of performance expectancy

| Characteristics | $\bar{X}$ | Standard Deviation |
|---|---|---|
| **KMS (Performance expectancy)** | | |
| 1. Using KMS has benefits for your regular work | 4.01 | .753 |
| 2. Using KMS helps you accomplish work faster | 3.87 | .706 |
| 3. Using KMS is to increase the work effectiveness and efficiency | 3.96 | .695 |
| 4. Using KMS is to increase the work progress opportunities | 3.76 | .663 |

The performance expectancy had the maximum mean for “Using KMS has benefits for your regular work” (4.01), the next highest mean was for “Using KMS increases the work effectiveness and efficiency” (3.96) and the minimum mean was for “Using KMS increases the work progress opportunities” (3.76).

### 4.4.2 Results of effort expectancy

This section was shown the mean and standard deviation of the second construct which was effort expectancy.

**Table 4.4** Mean and Standard Deviation of effort expectancy

| Characteristics | $\bar{X}$ | Standard Deviation |
|---|---|---|
| **KMS (Effort expectancy)** | | |
| 1. KMS has the accurate and complete content | 4.08 | .653 |
| 2. KMS has the benefit content, interesting and being the source of knowledge | 4.09 | .686 |
| 3. KMS uses the easy understandable language and grammatically correct | 3.82 | .731 |
| 4. KMS can search for the content as required | 3.84 | .664 |
| 5. KMS has the credible information content | 3.90 | .658 |
| 6. Learning the methods of KMS using is easy for you | 3.84 | .711 |
| 7. KMS is easy for you and you are skillful in using it | 3.80 | .714 |
| 8. You found that KMS in the organization is easy to use | 3.78 | .705 |

The effort expectancy had the maximum mean item was “KMS has the benefit content, interesting and being the source of knowledge” (4.09), the item with the next highest mean was “KMS has the accurate and complete content” (4.08), and the item with the minimum mean was “You found that KMS in the organization is easy to use” (3.78).

### 4.4.3 Result of social Influence

This part was presented the mean and standard deviation of social Influence.

**Table 4.5** Mean and Standard Deviation of social influence

| Characteristics | $\bar{X}$ | Standard Deviation |
|---|---|---|
| **KMS (Social influence)** | | |
| 1. The authority in the organization affects on your KMS using behavior | 3.78 | .745 |
| 2. The authority in the organization is important to your KMS using | 3.66 | .735 |
| 3. Top executives of the organization gain the benefits from using KMS | 3.67 | .700 |
| 4. Your organization support the using of KMS in all units | 3.82 | .739 |

The social influence had a maximum mean item for "Your organization supports the use of KMS in all units" (3.82), the item with the next highest mean was "The authority in the organization affects your KMS use behavior" (3.78), and the "The authority in the organization is important to your KMS using" was minimum mean (3.66).

**4.4.4 Result of facilitating condition**

This part was presented the mean and standard deviation of the facilitating condition.

**Table 4.6** Mean and Standard Deviation of facilitating condition

| Characteristics | $\bar{X}$ | Standard Deviation |
|---|---|---|
| **KMS (Facilitating conditions)** | | |
| 1. You have the necessary resources in using KMS | 3.90 | .777 |
| 2. You have the necessary knowledge in using KMS | 3.80 | .733 |
| 3. KMS cannot work together with other systems that you regularly use | 3.76 | .794 |

**Table 4.6** Mean and Standard Deviation of facilitating condition (Cont.)

| Characteristics | $\bar{X}$ | Standard Deviation |
|---|---|---|
| 4. There is the team or unit that provides consultancy on KMS for the assistance service on any system problems | 3.77 | .720 |
| 5. You can give feedback and define the problems of the system works via KMS | 3.82 | .755 |

The maximum mean item of facilitating conditions was "You have the necessary resources in using KMS" (3.90), the next highest mean was for "You can give feedback and define the problems of the system works via KMS" (3.82). The minimum mean item was "KMS cannot work together with other systems that you regularly use" (3.76).

**4.4.5 Result of intention behavioral**

This part was presented the mean and standard deviation of the intention behavioral.

**Table 4.7** Mean and Standard Deviation of intention behavioral

| Characteristics | $\bar{X}$ | Standard Deviation |
|---|---|---|
| **Knowledge Identification** | | |
| 1. Set to have the Intranet system network to search for the knowledge related to the laws, regulations, instructions and the operational guidelines of the organization. | 4.12 | .801 |
| 2. Set to have the Intranet system network for knowledge searching about the organization governing | 4.11 | .761 |
| 3. Set to have the Intranet system network for knowledge searching about the information that supports the organizational operation | 4.12 | .740 |

**Table 4.7** Mean and Standard Deviation of intention behavioral (Cont.)

| Characteristics | $\bar{X}$ | Standard Deviation |
|---|---|---|
| 4. Set to have the Intranet system network for knowledge searching about the experiences and skills of each department works in the organization | 3.77 | .775 |
| **Knowledge Creation and Acquisition** | | |
| 5. Set for the Chief of knowledge operation (CKO) and the committee to responsible for the(KM) project | 3.38 | .945 |
| 6. Set for the regular KM seminar in the work unit | 3.39 | .644 |
| 7. Set for the regular training to increase the knowledge | 3.65 | .738 |
| 8. Exchange the experiences with those with former experiences regularly | 3.26 | .826 |
| 9. Forming the information to support the operation (information service) | 3.46 | .819 |
| **Knowledge Organization** | | |
| 10.Process on the manner, instructions and operational guidelines in each work line | 3.69 | .867 |
| 11. Arrange for the operation manual for each work line | 3.62 | .938 |
| 12. Storing the information at the central information center and distribute them on the Intranet system | 3.80 | .851 |
| 13. Providing the similar standard, fast and convenience information searching on Intranet system | 3.73 | .925 |
| 14. Always improve and update the information | 3.65 | .909 |
| **Knowledge Codification and Refinement** | | |
| 15. Arrange for the information of any work characteristics in each organizational department in the Intranet system | 3.70 | .608 |
| 16. Arrange for the operational guidelines the conform with the work characteristics in each department of the organization and always give the new launch | 3.45 | .806 |

**Table 4.7** Mean and Standard Deviation of intention behavioral (Cont.)

| Characteristics | $\bar{X}$ | Standard Deviation |
|---|---|---|
| 17.Arrange for the information related to the characteristics of work in each department to support the operation | 3.53 | .850 |
| 18.Arrange to have the online library to support the operational information | 3.24 | .936 |
| **Knowledge accessing** | | |
| 19.Proving the KMS system to study | 3.59 | .891 |
| 20. People can access into the Intranet system to search for the support information about the relate tasks | 3.64 | .822 |
| 21.In the Intranet system, people can access to search for the information as required | 3.63 | .824 |
| 22. Arrange for the knowledge exchanging activity for the organizational employees | 3.29 | .903 |
| **Knowledge sharing** | | |
| 23. Arrange for the CoP (Community of practitioners) | 3.10 | .922 |
| 24. Provide the Web Board for knowledge exchange | 3.59 | .990 |
| 25. Arrange the personnel to alternate their jobs to exchange the knowledge and working experiences | 3.12 | .932 |
| 26. Provide the knowledge to the personnel in the unit by the specialist of each aspect | 3.28 | .874 |
| 27. There are knowledge exchanges from the teach on each type of work on the Intranet system | 3.10 | .892 |
| **Learning** | | |
| 28.Bring the knowledge gained to develop the operational methods and suitable time in services providing | 3.35 | .792 |
| 29. Bring the knowledge gained to develop the operational works toward the effectiveness | 3.42 | .809 |

**Table 4.7** Mean and Standard Deviation of intention behavioral (Cont.)

| Characteristics | $\bar{X}$ | Standard Deviation |
|---|---|---|
| 30. Bring the knowledge gained to develop the innovation for the continual learning | 3.35 | .827 |
| 31. Bring the knowledge gained to develop the atmosphere forming to be the continual learning knowledge | 3.33 | .830 |

The behavioral intention had seven variables including knowledge identification, knowledge creation and acquisition, knowledge organization, knowledge codification and refinement, knowledge accessing, knowledge sharing and learning. The maximum mean items were “Set up the Intranet system network to search for the knowledge related to the laws, regulations, instructions and the operational guidelines of the organization” and “Set up the Intranet system network for knowledge searching about the information that supports the organizational operation” (4.12). The next highest mean was for “Set up the Intranet system network for knowledge searching about the organizational management” (4.11). The item with the minimum mean was “Arrange for the CoP (Community of practitioners) ” and “There are knowledge exchanges for each type of work on the Intranet system” (3.10).

### 4.4.6 Result of behavior usage

This part was presented the mean and standard deviation of behavior usage

**Table 4.8** Mean and Standard Deviation of behavior usage

| Characteristics | $\bar{X}$ | Standard Deviation |
|---|---|---|
| **KMS (Attitude toward using technology)** | | |
| 1. KMS has the good working concept | 3.87 | .689 |
| 2.KMS can help your work becomes more interesting | 3.74 | .627 |
| 3. KMS can help you work happily | 3.56 | .659 |
| 4. You can work together with KMS | 3.69 | .662 |
| **KMS (Self-efficacy)** | | |
| 1. You can operate or use KMS without previous learning | 3.46 | .625 |
| 2. If there is no colleague or the specialist on KMS, you will be able to operate or work with KMS | 3.51 | .607 |
| 3. You can contact to the KMS specialist in the organization to ask for help in case of any problem | 3.59 | .665 |
| 4. You have enough time to study and understand KMS using in the organization | 3.48 | .597 |
| 5. You have the facilities that enhance for the working with KMS in the organization | 3.63 | .659 |
| **KMS (Anxiety)** | | |
| 1. You have the anxiety about using KMS in the organization | 2.82 | .836 |
| 2. You afraid to lose a lot of information during the use of KMS especially the miss press of buttons | 2.77 | .742 |
| 3. You have hesitation to use KMS of the organization since you afraid to make mistake and unable to solve | 2.78 | .761 |
| 4. KMS will warn about the work in case of any mistake in the system use | 3.01 | .733 |
| **KMS (Behavioral intention to use the system)** | | |
| 1. You intend to learn to use KMS of the organization in the next 6 months | 3.70 | .743 |

**Table 4.8** Mean and Standard Deviation of behavior usage (Cont.)

| Characteristics | $\bar{X}$ | Standard Deviation |
|---|---|---|
| **KMS (Behavioral intention to use the system)** | | |
| 1. You intend to learn to use KMS of the organization in the next 6 months | 3.70 | .743 |
| 2. You expect to learn to use KMS in the organization in the next 6 months | 3.66 | .735 |
| 3. You plan to learn to use KMS in the organization in the next 6 months | 3.67 | .771 |
| 4. In case that you used KMS of the organization, you intend to continue use it | 3.58 | .685 |
| **Usage Behavior** | | |
| 5. You cannot estimate the cost and benefit of using KMS in the organization before any time of usage | 3.75 | .839 |
| 6. You deliberately consider about the use of KMS in the organization before every time of usage | 3.52 | .696 |
| 7. You automatically learn to use KMS in the organization | 3.57 | .693 |

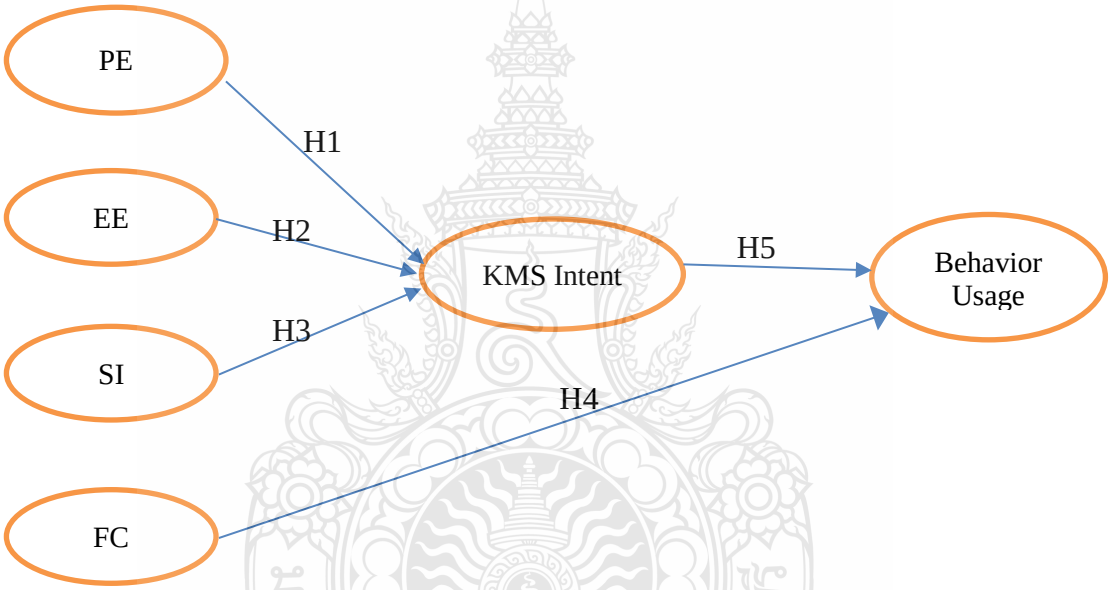
The usage behavior had five variables including attitude toward using technology, self-efficacy, anxiety, behavioral intention to use the system, and usage behavior. The maximum mean item was “KMS has the good working concept” (3.87), the next highest mean was for “You cannot estimate the cost and benefit of using KMS in the organization before any time of usage” (3.75). The minimum mean item was “You are afraid to lose a lot of information during the use of KMS especially if you press the wrong key” (2.77).

## 4.5 Hypothesis Testing Results

### 4.5.1 Research Questions

Thissection presented the results of six research questions: (1) Does the performance expectancy influence KMS intention? ; (2) Does the effort expectancy influence KMS intention?; (3) Does the social influence KMS intention?; (4) Does the facilitation condition affect on behavior usage?; and (5) Does the KMS intention affect usage behavior ?.

From five research questions and reviewed literature four main constructs from conceptual framework that presented in Figure 4.2.




PE = Performance expectancy, EE = Effort expectancy
SI = Social influence , FC = Facilitating condition

**Figure 4.2** Conceptual Model /theoretical framework

The results of model in this study are presented in Figure 4.3.

**The Hypothesis of the study**

H1 : There is a positive relationship between performance expectancy and KMS intention.

H2 : There is a positive relationship between effort expectancy and KMS intention.

H3 : There is a positive relationship between social influence and KMS intention.

H4 : There is a positive relationship between facilitating conditions and usage behavior.

H5 : There is a positive relationship between KMS intention and usage behavior.

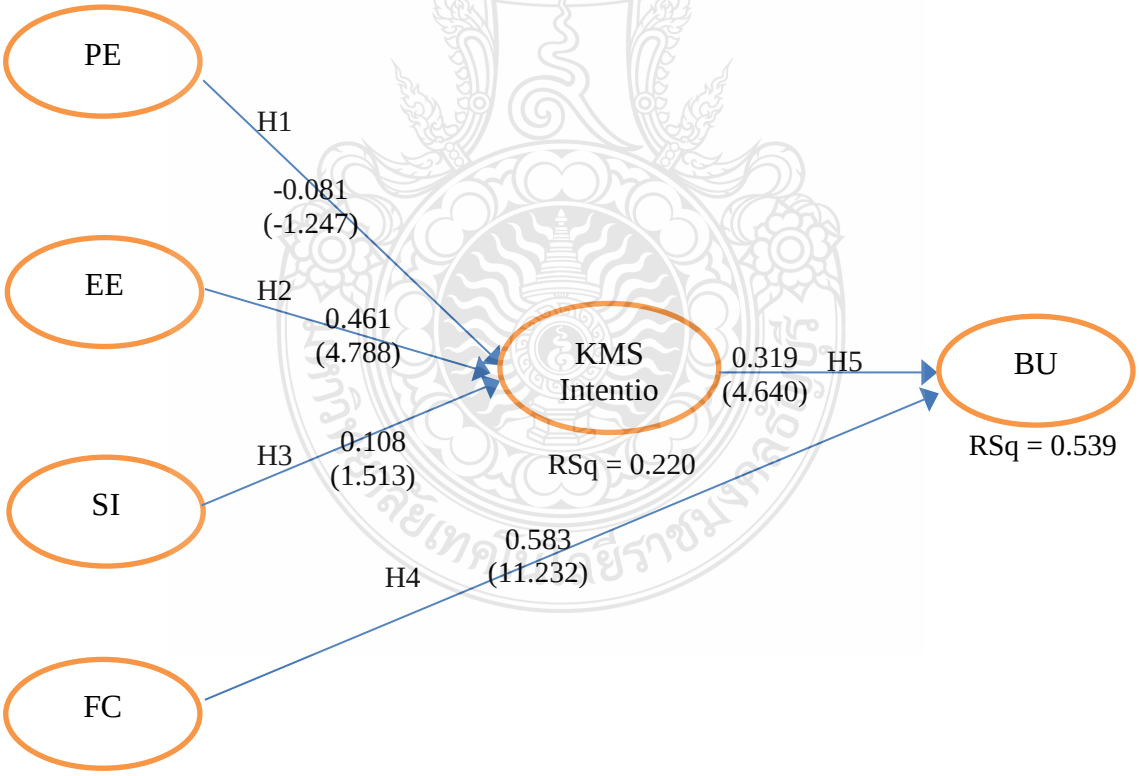



**Figure 4.3** The results of testing structural model of theoretical framework

**Table 4.9** The Results of Hypothesis Testing

| Hypothesis | Coef. (S.E.) | t-value | p-value | Result |
|---|---|---|---|---|
| H1 : There is a positive relationship between performance expectancy and KMS intention. | -0.081 | -1.247 | 0.214 | Not Supported |
| H2 : There is a positive relationship between effort expectancy and future intention | .461 | 4.788 | 0.000** | Supported |
| H3 : There is a positive relationship between Social Influence and KMS intention. | 0.108 | 1.513 | 0.132 | Not Supported |
| H4 : There is a positive relationship between facilitation condition and behavior usage. | 0.583 | 11.232 | 0.000** | Supported |
| H5 : There is a positive relationship between KMS intention and usage behavior. | 0.319 | 4.640 | 0.000** | Supported |

**Note** ** Significance level at 0.001

H1: There is a positive relationship between performance expectancy and KMS intention.

The value of t-test showed that the estimated coefficient value was -0.081, with t-statistic (t-value) of -1.247, and p-value of 0.214 indicating that there is not a positive relationship between performance expectancy and KMS intention. Consequently, it could be concluded that H1 was not supported.

H2: There is a positive relationship between effort expectancy and KMS intention.

The value of t-test showed that the estimated coefficient value was 0.461, with t-statistic (t-value) of 4.788, and p-value of 0.000, indicating that there is a positive relationship between effort expectancy and KMS intention at a significance level of 0.001. Therefore, it could be concluded that H2 was supported.

H3: There is a positive relationship between Social Influence and KMS intention.

The value of t-test showed that the estimated coefficient value was 0.108, with t-statistic (t-value) of 1.513, and p-value of 0.132 indicating that there no positive relationship between social influence and KMS intention. Consequently, it could be concluded that H3 was not supported.

H4: There is a positive relationship between facilitation condition and use behavior.

The value of t-test showed that the estimated coefficient value was 0.583, with t-statistic (t-value) of 11.232, and p-value of 0.000, indicating that there is a positive relationship facilitating condition and usage behavior at a significance level of 0.001. Therefore, it could be concluded that H4 was supported.

H5: There is a positive relationship between KMS intention and behavior usage.

The value of the t-test showed that the estimated coefficient value was 0.319, with t-statistic (t-value) of 4.640, and p-value of 0.000, indicating that there is a positive relationship between KMS intention and usage behavior at a significance level of 0.001. Therefore, it could be concluded that H5 was supported.

This section presents the model testing when adding gender, age, and experience as the moderators of model. The results of testing are showed below.

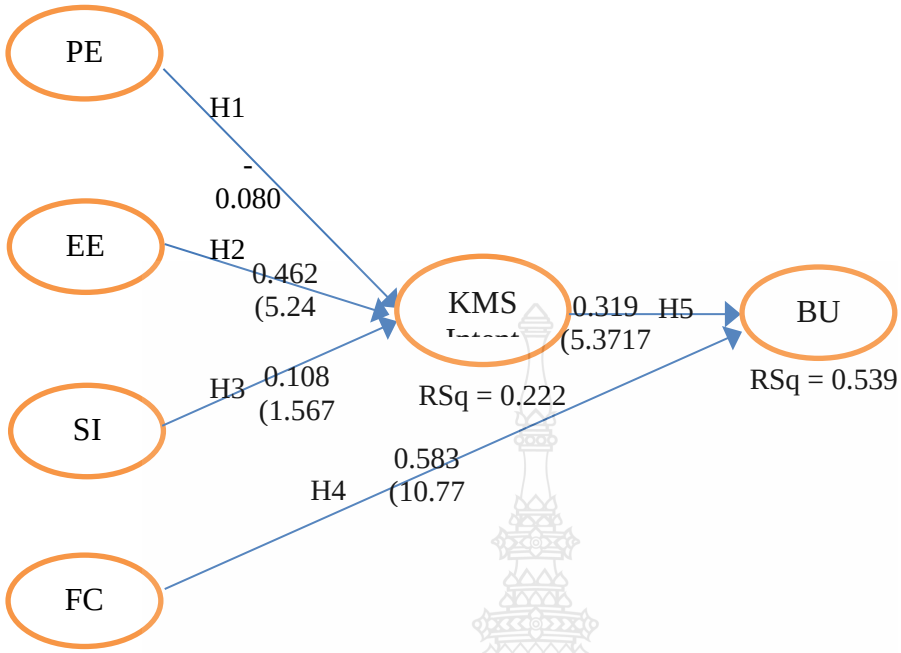



**Figure 4.4** The results of model testing when put moderator

**Table 4.10** The Results of Hypothesis testing when put moderator

| Hypothesis | Coef. (S.E.) | t-value | p-value | Result |
|---|---|---|---|---|
| H1 : There is a positive relationship between performance expectancy and KMS intention. | -0.080 | -1.249 | 0.213 | Not Supported |
| H2 : There is a positive relationship between effort expectancy and future intention | .462 | 5.242 | 0.000** | Supported |
| H3 : There is a positive relationship between Social Influence and KMS intention. | 0.108 | 1.568 | 0.118 | Not Supported |
| H4 : There is a positive relationship between facilitation condition and behavior usage. | 0.583 | 10.770 | 0.000** | Supported |

**Table 4.10** The Results of Hypothesis testing when put moderator (Cont.)

| Hypothesis | Coef. (S.E.) | t-value | p-value | Result |
|---|---|---|---|---|
| H5 : There is a positive relationship between KMS intention and behavior usage. | 0.319 | 5.372 | 0.000** | Supported |

**Note** ** Significance level at 0.001

Data from Figure 4-4 and Table 4-18 show that the path coefficient of each path did not change or changed slightly. The path coefficient between performance expectancy and KMS intention when adding moderators was -0.080 which is a slight change from the original model (-0.081). The path coefficient between effort expectancy and KMS intention when adding moderators was 0.462 080 which is a slight change from the original model (0.461). The path coefficients between facilitating condition and usage behavior, and path coefficient between KMS intention and usage behavior when adding moderators did not change; i.e., the path coefficients were 0.583 and 0.319 respectively. The results indicate that 1) there is not a positive relationship between performance expectancy and KMS intention; 2) there is a positive relationship between effort expectancy and KMS intention; 3) there is not a positive relationship between social influence and KMS intention; 4) there is a positive relationship between facilitating condition and usage behavior; and 5) there is a positive relationship between KMS intention and usage behavior. Therefore, the results indicate that user's gender, age, and experience as moderators did not influence the relationship between independent and dependent variables.

In conclusion, the effort expectancy had a direct effect on KMS intention, while performance expectancy and social influence did not affect KMS intention. The facilitating condition directly affected usage behavior, and KMS intention directly affected usage behavior. Consequently, the facilitating conditions directly affected usage behavior, while effort expectancy influenced usage behavior through KMS intention as the mediator of the model.

### 4.6 Chapter Summary of Hypothesis testing

This section providing the results of the study revealed that there were significant positively relationship between effort expectancy, facilitation condition, KMS intention and behavior usage. It could be summarized that facilitation condition direct positively influenced the behavior usage. The effort expectancy affected on behavior usage through KMS intention as mediator. The effort expectancy affected on KMS intention with path coefficient 0.461 (46.10 percent). The KMS intention affected on behavior usage with path coefficient 0.319 (31.90 percent). While the facilitation condition direct affected on behavior usage with path coefficient 0.583 (58.30 percent).

This study could be concluded that the effort expectancy could be explained KMS intention 22.00 percent (R-square= 0.220). The KMS intention and facilitation condition could be join explained behavior usage 53.90 percent (R-square= 0.539). Consequently, the facilitation condition direct influenced behavior usage, and effort expectancy influenced behavior usage through KMS intention as the mediator of the model.

### 4.7 Results of the Interview form

**Virtual Link Solutions Co., Ltd., (VLink)**

This study found that there were significant positive relationships between effort expectancy, facilitating condition, and KMS intention and usage behavior. It could be summarized that facilitating conditions directly positively influenced usage behavior. The effort expectancy affected usage behavior through KMS intention as a mediator. The effort expectancy affected KMS intention with path coefficient 0.461 (46.1 percent). The KMS intention affected usage behavior with path coefficient 0.319 (31.9 percent). While the facilitating conditions directly affected usage behavior with path coefficient 0.583 (58.3 percent).

Thus, it can be concluded that the effort expectancy could explain 22.0 percent of the variation in KMS intention (R-square= 0.220). The KMS intention and facilitating condition could 53.9 percent of usage behavior (R-square= 0.539). Consequently, the facilitating conditions directly influenced usage behavior, and effort

expectancy influenced usage behavior through KMS intention as the mediator of the model.

In this study, the researcher conducted in-depth interviews with personnel that use the KMS system in the organization, for example, Virtual Link Solutions Co., Ltd., (VLink), Faculty of Management Science (Uttaradit Rajabhat University) , Education Service Department (Uttaradit Rajabhat University) and the government sector. The interview results can be summarized as follows:

Virtual Link Solutions Co., Ltd., (VLink) is located at Lao Peng Nguan Tower I, Viphavadee-Rangsit Rd. Jatujak Thailand, and the company is the leader in software provider business with alliances with IBM Thailand and Saba Software Co. To support the growth of organization's business, VLink aims at the internal Enterprise Solutions such as Enterprise Web Portal Solution, Enterprise e-Learning Solution, Enterprise Knowledge Management Solution, Enterprise Social Business Solution and Enterprise e-Form Solution. These are to respond to the diverse needs of customers to add more effectiveness in the management, effective costs management, information accessing, knowledge sharing and communications within the organization. VLink applies mobile phone technology for the internal organization management. The company provides the software that supports the Mobile platforms. The researcher interviewed Khun Wuttichai Kohsakul, Project Exceptive and Khun Waraporn Apirattanatrakul, Project manager.

Wuttichai Kohsakul observed that, organizations will succeed in knowledge management if there are good hardware and software as well as skilled users. Moreover, the organizational environment and organizational culture are also crucial.

Waraporn Apirattanatrakul's opinion about the KMS in Thai organizations is that the factors creating successful knowledge management result from the persons who can drive and push from the executive level down to the users. Moreover, the difference in organizational characteristics such as the government sector seems to be driven harder compared to the private sector because of rules and regulations in the government sector, resulting in delayed operations. Having a responsible unit in each organization helps to push the organization toward successful use of the KMS system.

**Table 4.11** Question for interview

| Topic | Mr.Wuttichai Kohsakul | Miss Waraporn Apirattanatrakul |
|---|---|---|
| The factors affect KMS usage in the organization | - Having the good tools<br>- Internal organization environment<br>-Organizational cultures<br>-Thais behavior with non-preference on academic works such as writing | - There shall be the direct responsible unit<br>- The executives and system users must recognize the crucial of system<br>- Enforcing the system use<br>- Governmental units such as Finance ministry, Uttaradit Rajabhat University, NBTC<br>-Private units such as K-bank, PTTEP |
| The results after KMS used | - Familiar with the system<br>- Enforcement will lead to the resistance<br>- User considers it as job adding | - New generation user will be able to learn and access to information better since the familiarity with technology<br>- User considers system is difficult and complex<br>-unfamiliar with the system |
| Trend of KMS development | -Social KM is about the study on human behavior such as using behavior, frequency, user analysis as well as the mimicking of human behaviors | - Mobile platforms develop the form of application to be easy to access from anytime and everywhere to immediately response to the user needs |

The information from the interviews indicate that the factors affecting KMS in the organization are having good tools and organizational environment.

### 4.8 Chapter Summary interview form

This study found that there were significant positive relationships between performance expectancy, effort expectancy, social influence, facilitating conditions, behavioral intention and usage behavior. In conclusion, effort expectancy has a direct effect on KMS intention, while performance expectancy and social influence do not affect KMS intention. The facilitating conditions directly affected usage behavior, and KMS intention directly affected usage behavior. Consequently, the facilitating conditions directly affected usage behavior, while effort expectancy influenced usage behavior through KMS intention as the mediator of the model.

A discussion of these results and implications are presented in the next chapter.

# CHAPTER 5
# CONCLUSION AND RECOMMENDATIONS

This chapter was divided into four parts. The first part was the conclusion of research and methodology. The second part was the discussion on research questions. The third part mentions about the limitation of the study and the last part presented the implication of practical that presents the benefit from the research findings and guideline for business operation as well as the suggestions for the future research. This research aimed to study on the factors influencing the use of knowledge management system (KMS) and the study on the behaviors of knowledge management system users in the manufacturing sector and service sector in Thailand. The researcher applied the model of Unified Theory of Acceptance and Use of Technology (UTAUT) from the study of Alavi & Leidner, (2001) ,Venkatesh et.al, (2003), Venkatesh et al., (2012) by the synthesis results of the idea and theory literature review concluded that the influencing factors in the use of knowledge management system (KMS) could be measured from (1) Performance Expectancy (2) Effort Expectancy (3) Social Influence (4) Facilitating Conditions.

This study presented the hypothesis about which factors influencing on the use of knowledge management system in the personal level in the organization. There were two questions related to the research:1) How does the use of knowledge management system(KMS) influence on the efficiency in using technology in the manufacturing sector and service sector? and 2) Which are the factors influencing the use of knowledge management system in the organization?.

Independent variable was the factors of information technology (knowledge management system) acceptance in the organization and the knowledge management system (KMS) using behavior. It was the variable that depended on the intention to KMS use.

There were five hypotheses including: H1: Performance expectancy will significantly influence on intention to KMS usage. H2: Effort expectancy will significantly influence on intention to KMS usage. H3: Social influence will significantly influence on intention to KMS usage. H4: Facilitating conditions will

significantly influence on intention to KMS usage and H5: Behavioral intention will significantly influence on intention to KMS usage.

The researcher established the population and sample group of informants in this research as the users of knowledge management system in the member organizations of Thailand Productivity institute and the listed companies in the Department of Business Development, Ministry of Commerce in Thailand. The least amount of samples should have the amount of noticeable variables for at least five times and the acceptable size of sample is about 20: 1. The researcher used the Multi-Stage-Sampling among the samples that consist of 400 from the management level and operational level. The researcher received 172 questionnaires in return in which calculated as the 43 percent of response rate (Hair et al., 2009). The researcher selected the mixed-methods approach by the questionnaire was used as the tool to collect the information during July to September 2016. In addition, the in-depth interview was also used by the group of sample was selected from the users both from the manufacturing sector and service sector during November to December 2016 from four places. The researcher used the technique of structural equation modeling (SEM) and Partial least square (PLS) as the testing instrument.

According to the demographic information of the respondents who answered the questionnaire related to the use of KMS consisted of 61 male respondents (35.47%) and 111 female respondents (64.53%). It was found from the study result that most of the questionnaire respondents were at 40 years old onward for 108 respondents (62.79%), second by 46 respondents(26.74%) during 30-39 years old and 18respondents (16.47%) with lower than30 years old respectively. Therefore, it can be seen that most of the users of knowledge management system were older than 40 years old onward. From the study, it can be seen that 112 respondents (65.12%) graduated from Bachelor degree, second by54 respondents (31.39%) graduated from Master degree and 6 respondents (3.49%) with lower than Bachelor degree education respectively. Therefore, it can be seen that most of the users of knowledge management system graduated with Bachelor degree. On the aspect of work experience, they had the average working experience more than ten years onward for 127 respondents (73.84%).

Thus, this had shown that most of the knowledge management system users in the organization worked in operations level.

The groups of business either the manufacturing and service sectors were the four leading companies including THAI Catering Department (Don Mueang), CAT Telecom Public Company Limited, TOT Public Company Limited, and Virtual Link Solutions Co, Ltd. (Vlink)

The average value of performance expectancy, effort expectancy, social influence, and facilitating conditions variable were as follows: 1) Performance expectancy in the overall consideration found that the respondents' opinion toward performance expectancy in the internal organization knowledge management system was at the high level. It referred to that the system users expected to use information technology system to increase the efficiency and effectiveness in their operation. The users had foreseen the benefits for the routine work as it can enhance for more speed and convenience in their operation. 2) effort expectancy was when considered in overall that there spondents had the opinion toward effort expectancy of the internal organization knowledge management system in high level. This referred to that the system users expected for the knowledge management system to give the useful and interesting content with the accuracy of the content, credible and can be easily used to become expertise. 3) Social influence when considered in the big picture, it was found that the social influence can affect the system users in moderate level since the characteristic of the job assigned of each sector of the users was the regular operation. It then did not affect on the operation or forced by the management policy since it was the knowledge management system that stressed on the volunteerism of the users as a key.4) Facilitating conditions when considering in overall, it was found that the opinions of respondents toward the facilities can affect the use of knowledge management system in high level. This referred to that the users of knowledge management system were so necessary to have the supporting resources for the system usage such as office computer, internet, and can be part in the development, solution and improvement for the system to work faster and more convenience.

## 5.1 Discussion of the Research Findings

In this part, the researcher discussed about the research questions related to the test of hypotheses and in depth interview.

### 5.1.1 Discussion of Research Question 1

Research questions were as follows: How does the use of knowledge management system (KMS) influence on the efficiency in using technology in the manufacturing sector and service sector. The testing of hypotheses H2andH4 reflected the Effort expectancy and Facilitating conditions with the positive influence on the use of knowledge management system in the unit. It referred to that the business either in manufacturing and service sector paid attention to the expectation in the use of knowledge management system and the facilities to enhance the use of knowledge management system that would be brought to use in the high level of organization. Thus, it could be resulted from bringing well quality technology that can enhance the operation either on the ability to gather the information and ability to communicate and effective knowledge management system and to be able to bring the collected information to analyze and correctly process with the complete content. Besides, the facilities to enhance the use of knowledge management system can response to the easily, speed and convenience use. Thus, businesses either the manufacturing or service sector shall support and pay attention to the personnel development with the skill and knowledge on knowledge management system for the use in internal organization management. It is the factor of success to bring knowledge management system to use in the business. It conformed with this research that supported the study by Venkatesh et.al, (2003) in which indicated that technology acceptance by bringing the knowledge management system to use in the organization had the factors related to the user behaviors in three aspects which were Performance expectancy, Effort expectancy, and Social influence. Besides, this supported the study by Lewellen et.al(2014) by indicated that the factor of Performance expectancy and Effort expectancy can help support and improve the efficiency in the knowledge management system operation via acceptance and utilization of a technology. This is in order to compete with other businesses and develop the advanced knowledge management system. Moreover, it supported the study of Fretwell et.al. (2014) whose indicated that knowledge management system was

a key resource for storing and retrieving information that facilitated for tasks and work routines. The movement of knowledge across individual and organizational boundaries into repositories and organizational routines and practices was ultimately depended on the employees' knowledge-sharing behaviors. In addition, this was in line with the study by Hester, (2010) whose indicated that bringing knowledge management will strive for the capturing of effectiveness and the application of organizational knowledge will be an imperative valuable resource in organization sustaining. In an effort to better achieve knowledge management initiatives, consideration of factors influencing adoption and usage of knowledge management systems are of great interest. It was found from the study that the relationship between KMS system and this factor was important in examining over practices and technology as used for the knowledge management at the statistical significant level.

Besides, the answer of in depth interview of knowledge management system users in manufacturing and service sector had confirmed that the business partly supported the use of KMS in the organization for the sustainability and the competitive advantage over others entrepreneurs. They must have the clear knowledge management system and pay attention to the knowledge management system in the organization as well as segregate the responsibilities for each unit. The successful knowledge management system required teamwork with responsibility to specifically manage on the knowledge to give the advice and suggestions throughout the time that bringing knowledge management system to use in the organization. Therefore, the influencing factors in using technology then conformed with work and solution to the emerging problems as well as increase the organization efficiency in operation.

**5.1.2 Discussion of Research Question 2**

The hypotheses testing on the business company H5 paid attention on the factor of system users' behavior with influence on the selection of knowledge management system in the organization.

The results fromH5 hypothesis testing indicated that the user behavior in the business system either in manufacturing and service sector considered on the importance of knowledge management system management including with the followings. (1) The attitude toward KMS technology, (2) perception of ability to use

ERP system,(3) anxiety from the use of KMS, (4) the intention behavior to use KMS,(5) KMS system using behavior for the business decision. Besides, the business also considered on the benefits from the use of KMS in their business to help forming (1) benefits in operation planning, (2) benefits for faster and convenience resources management and (3) benefits in the operational steps of each organization.

The results from the study by Venkatesh et.al, (2003) pointed out that three factors of Attitude toward the technology, self-efficacy and Anxiety are the main factors to measure the behavior and feeling in order to know the response of knowledge management system users in the organization. Since the perception of system use can result on the confidence of the system users as well as to measure the ability and skill of them as another way. Besides, this also supported the research by Gray, (2000) who pointed out that knowledge management system was the considerable interest subject among the academics and practitioners from in the past decade where there were less cumulative empirical researches formed to place the causal mechanisms of KMS influences on the organization performance. Besides, it also supported the study by Jennex & Olfman, (2005) which was the guideline to bring technology system to use. IT/ICT components included with system with the users, repositories, using processes and/or knowledge generating, knowledge use culture, and the initiative for KM for the better efficiency in organization management. At the end, it supported the research by Alavi & Leidner, (2001) on the aspect of IT-based systems development in which supported and enhanced the knowledge creation, application, transfer and storage/retrieval processes in the organization. Therefore, for the efficiency in the organization operation, it needed to research and select the suitable internal knowledge management as well as adjustment and stimulation for changes in the market by using advanced technology in operation.

Besides, the answered of in depth interview from the head of knowledge management unit and the head of information technology related to the knowledge management system users' behavior in the organization was confirmed on the business users with no attention paid to the use of KMS system. Because the organization had no policy to force the use of system and some users may interest to use in the part related to their work not to enlarge the scope of their own knowledge. Another important

factor was that the user considered the use of the KMS system increased burdens, complicate and time-consuming thus, the corporate policy was an important part for the success of KMS in the organization. Enforcement of policy requires setting the activity on how many time to use within specified period of time. IT Training increased the ability of I, and design an easy-to-use KMS and wonderful system and there had affected the users' application and the operational effectiveness in the organization.

## 5.2 Limitation of the Study

1. The business sector that usually brings knowledge management system to use is the form of big organization from both government and private sector. While the business in Small and Medium Enterprise (SME) type with the differences in business sizes, rarely invested on knowledge management system since they cannot see the importance and necessity to use KMS. Moreover, technology investment consumed high budget and the lack of expertise personnel on knowledge management resulted on the user group to be among the large business size.

2. Uncertain and unclear organization policy as a result from change in management lead to the non-continuity in knowledge management system as well as no serious enforcement and team to continue responsible on knowledge management system thus, these were the reasons of failure to achieve the goal of knowledge management system applying.

3. The disclosure of business information of the organization still have limitations and strict regulations thus, information gathering or interview were rarely completed since it took long time for appointment.

## 5.3 Implication for Practice and Future Research

### 5.3.1 Implication

This study presented the benefits from the theories and operational guidelines on the aspect of three theories from the previous research related to the information technology acceptanceamong the users in government and private sectors for the utmost effectiveness. Thus, they found the direct and indirect influence from each theory related to efficiency.

The research found that the organization the operated with KMS and had direct effects on the behaviors of knowledge management system's user in the organization, therefore, the conformance to the KMS usage in the organization will result on the efficiency of theorganization performance.

For the knowledge management in the organization, there was the suggestion to improve the operation to increase the work performance in which can be done in several ways. First, the organization shall pay attention on the policy launching in conformance with the operational goal and IT strategic operation via knowledge management system (KMS). First, this was merged into their operation and second the organization needed the KMS software operation staff to be trained and gathered the idea and suggestions from users to consider to change as needed by the real users as well as to solve the problem for the continual operation.Third, the organization shall properly plan and manage on the information for the convenience in the information processing in the same database.

Besides, we shall clearly separate the information of each division for the ease of use and safety and to access into the quality information. Next, it needed to pay attention on efficient information technology management to be able to work according to the knowledge management system via KMS to reflect the empirical efficiency and effectiveness.

The high level of management shall participate in the strategic planning for knowledge management and information technology system used in support for the use ofKMS in the organization shall lead to the changes in technology acceptance by the users. Together with long term planning for knowledge management for the efficiency in future operation. Finally, both government and private sector can use this result in their knowledge management system administration for the further national development.

**5.3.2 Future Research**

For the future research related to the relationship between KMS users' behavior and the influential factors from brining technology system to use in the organization for the work effectiveness. The researcher would like to suggest for the study on the relationship for the KMS operation in regard of organizational culture since

it can have influence on the use of KMS, the investment on bringing KMS to use for the efficiency in operation performance and to conform to the changes at recent. There was the study on new technologies that would take part more in software development for the ease of use and convenience in use. For example, the development of KMS in social network by the users do not have to patrol at the office, capable to work everywhere in order to response to the use in the age of Thailand 4.0.

## List of Bibliography


Agarwal, R., & Prasad, J. (1997). The role of innovation characteristics and perceived voluntariness in the acceptance of information technologies. ***Decision sciences***, *28*(3), 557-582.

Ajzen, I. (1991). The theory of planned behavior. ***Organizational behavior and human decision processes***, *50*(2), 179-211.

Ajzen, I. (2002). Perceived Behavioral Control, Self-Efficacy, Locus of Control, and the Theory of Planned Behavior1. ***Journal of Applied Social Psychology***, *32*(4), 665-683. doi: 10.1111/j.1559-1816.2002.tb00236.x

Al-Khaldi, M. A., & Wallace, R. O. (1999). The influence of attitudes on personal computer utilization among knowledge workers: the case of Saudi Arabia. ***Information & Management***, *36*(4), 185-204.

Alvesson, M., & Kärreman, D. (2007). Constructing mystery: Empirical matters in theory development. ***Academy of management review***, *32*(4), 1265-1281.

Bagchi, S., Kanungo, S., & Dasgupta, S. (2003). Modeling use of enterprise resource planning systems: a path analytic study. ***European Journal of Information Systems,*** *12*(2), 142-158.

Blake, B. F., Neuendorf, K. A., & Valdiserri, C. M. (2005). Tailoring new websites to appeal to those most likely to shop online. ***Technovation,*** *25*(10), 1205-1214.

Chan, S., & Lu, M. (2004). Understanding internet banking adoption and use behavior: A Hong Kong perspective.

Chenoweth, T., Minch, R., & Gattiker, T. (2009). ***Application of protection motivation theory to adoption of protective technologies***. Paper presented at the System Sciences, 2009. HICSS'09. 42nd Hawaii International Conference on.

Cheung, C. M., Chan, G. W., & Limayem, M. (2005). A critical review of online consumer behavior: Empirical research. ***Journal of Electronic Commerce in Organizations***, *3*(4), 1-19.

Compeau, D., Higgins, C. A., & Huff, S. (1999). Social cognitive theory and individual reactions to computing technology: A longitudinal study. ***MIS quarterly***, 145-158.

Compeau, D. R., & Higgins, C. A. (1995). Computer self-efficacy: Development of a measure and initial test. ***MIS quarterly***, 189-211.

Davis, F. D. (1985). *A* ***technology acceptance model for empirically testing new end-user information systems : theory and results***: Massachusetts Institute of Technology.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. ***MIS quarterly***, 319-340.

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: a comparison of two theoretical models. ***Management science***, *35*(8), 982-1003.

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1992). Extrinsic and intrinsic motivation to use computers in the workplace1. ***Journal of Applied Social Psychology***, *22*(14), 1111-1132.

Igbaria, M., Parasuraman, S., & Baroudi, J. J. (1996). A motivational model of microcomputer usage. ***Journal of management information systems***, 127-143.

Johns, G. (2006). The essential impact of context on organizational behavior. ***Academy of management review***, *31*(2), 386-408.

Kim, S. S., & Malhotra, N. K. (2005). A longitudinal model of continued IS use: An integrative view of four mechanisms underlying postadoption phenomena. ***Management science,*** *51*(5), 741-755.

Lin, W.-B., Wang, M.-K., & Hwang, K. P. (2010). The combined model of influencing on-line consumer behavior. *Expert Systems with Applications, 37*(4), 3236-3247.

Mathieson, K. (1991). Predicting user intentions: comparing the technology acceptance model with the theory of planned behavior. ***Information systems research***, *2*(3), 173-191.

Rivera Green, I. F. (2007). The emancipatory potential of a new information system and its effect on technology acceptance.

Smith, S., Johnston, R., Shanks, G., & Rahim, M. M. (2007). ***Towards a motivational theory of technology implementation processes***. Paper presented at the European and Mediterranean Conference on Information Systems. Polytechnic University of Valencia, Spain.

Taylor, S., & Todd, P. (1995). Assessing IT usage: The role of prior experience. ***MIS quarterly***, 561-570.

Thompson, R. L., Higgins, C. A., & Howell, J. M. (1991). Personal computing: toward a conceptual model of utilization. ***MIS quarterly***, 125-143.

Thompson, R. L., Higgins, C. A., & Howell, J. M. (1994). Influence of experience on personal computer utilization: testing a conceptual model. ***Journal of management information systems***, 167-187.

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. ***Management science***, *46*(2), 186-204.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. ***MIS quarterly***, 425-478.

# APPENDICES

# APPENDIX A

## Questionnaire (English Version)

**Questionnaire for the study**
**The influence factors of KMS operation system toward the system users in the business services sector and the industrial sector in Thailand**

**Dear** Users of Knowledge Management System (KMS) in the organization

Please complete the questionnaire about the opinions in using the Knowledge Management System (KMS) in your organization. Questionnaire answering will take about 30 minutes. This questionnaire is part of the tool used to collect the data for the PhD students in the Information technology system branch, Faculty of Business administration, Rajamangala University of Technology Thanyaburi on the subject of**"The influence factors of KMS operation system toward the system users in the business services sector and the industrial sector in Thailand"**

The information gathered from each person via the questionnaire will be kept in confidential and will not reveal the respondent's identity. The gathering information is about the concept related to the topic of research. Participation in questionnaire response is your voluntary and you can always reject your participation. The result of this research will be presented to the organizations that joined to this project and this is done to offer the opportunity for the organizations with the same interests on the key subjects appear in this questionnaire. The researcher will present the information that benefit for the promoting of organizational development in Thailand.

Miss Kanyarat Kamprom
PhD student on Information technology branch, Faculty of Business administration
Rajamangala University of Technology Thanyaburi

**Instructions**

1. The questionnaire contains with 6 parts
   Part 1Demographic information
   Part 2 Organizational characteristic information
   Part 3 Opinions of the personnel toward knowledge management in the organization
   Part 4 Knowledge management system (KMS) technology using behavior in the organization
   Part 5 The acceptance to use (KMS) information technology in the organization
   Part 6 Behavioral to use (KMS) information technology in the organization
2. The users of KMS system are those who use together the knowledge management system and the core operation systems in the organization.
3. Please mark ✓in to the blank that directs to your opinion

**Part 1 Demographic information**

1.1 Gender ☐ Male ☐ Female

1.2 Age ☐ 18-21years old ☐ 22-25years old ☐ 26-29years old

☐ 30-35years old ☐ 36-40 years old ☐ 40 years old onward

1.3 Marital status ☐ single ☐ married ☐ divorced

1.4 Education levels ☐ Lower than Bachelor degree ☐ Bachelor degree

☐ Master degree ☐ PhD

1.5 Work experiences ☐ less than 1 year ☐ 1-3 years ☐ 4-5 years

☐ 6-10 years ☐ 10 year onward

1.6 Position ☐ Division head level ☐ Operations level

1.7 Department ……..……

**Part 2 Organizational characteristic information**

2.1 Name of the organization……

2.2Type of organization ☐ Financial business
☐ Service business
☐ Real estate and construction
☐ Technology and communication

2.3 Total number of employee ☐ not over than300 personnel
☐ more than300 but not over than 500 personnel
☐ more than500 but not over than 1,000 personnel
☐ more than 1,000 personnel

**Part 3 Opinions of the personnel toward knowledge management in the organization**

Please define the levels of your opinion whether what is the level of your practice by marking ✓on the item that mostly direct to the truth. The measuring criteria are as follows (1 = none of practice 2 = less practice3 =neutral practice4 = much practice and 5 =the most practice)

| Descriptions | Levels of practice | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| **Knowledge Identification** | | | | | |
| 1. Set to have the Intranet system network to search for the knowledge related to the laws, regulations, instructions and the operational guidelines of the organization. | | | | | |
| 2. Set to have the Intranet system network for knowledge searching about the organization governing | | | | | |
| 3. Set to have the Intranet system network for knowledge searching about the information that supports the organizational operation | | | | | |
| 4. Set to have the Intranet system network for knowledge searching about the experiences and skills of each department works in the organization | | | | | |
| **Knowledge Creation and Acquisition** | | | | | |
| 5. Set for the Chief of knowledge operation (CKO) and the committee to responsible for the(KM) project | | | | | |
| 6. Set for the regular KM seminar in the work unit | | | | | |
| 7. Set for the regular training to increase the knowledge | | | | | |
| 8. Exchange the experiences with those with former experiences regularly | | | | | |
| 9. Forming the information to support the operation (information service) | | | | | |
| **Knowledge Organization** | | | | | |
| 10.Process on the manner, instructions and operational guidelines in each work line | | | | | |
| 11. Arrange for the operation manual for each work line | | | | | |
| 12. Storing the information at the central information center and distribute them on the Intranet system | | | | | |
| 13. Providing the similar standard, fast and convenience information searching on Intranet system | | | | | |
| 14. Always improve and update the information | | | | | |
| **Knowledge Codification and Refinement** | | | | | |
| 15. Arrange for the information of any work characteristics in each organizational department in the Intranet system | | | | | |
| 16. Arrange for the operational guidelines the conform with the work characteristics in each department of the organization and always give the new launch | | | | | |
| 17.Arrange for the information related to the characteristics of work in each department to support the operation | | | | | |
| 18.Arrange to have the online library to support the operational information | | | | | |

| Description | levels of operation | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| **Knowledge accessing** | | | | | |
| 19.Proving the KMS system to study | | | | | |
| 20. People can access into the Intranet system to search for the support information about the relate tasks | | | | | |
| 21.In the Intranet system, people can access to search for the information as required | | | | | |
| 22. Arrange for the knowledge exchanging activity for the organizational employees | | | | | |
| **Knowledge sharing** | | | | | |
| 23. Arrange for the CoP (Community of practitioners) | | | | | |
| 24. Provide the Web Board for knowledge exchange | | | | | |
| 25. Arrange the personnel to alternate their jobs to exchange the knowledge and working experiences | | | | | |
| 26. Provide the knowledge to the personnel in the unit by the specialist of each aspect | | | | | |
| 27. There are knowledge exchanges from the teach on each type of work on the Intranet system | | | | | |
| **Learning** | | | | | |
| 28.Bring the knowledge gained to develop the operational methods and suitable time in services providing | | | | | |
| 29. Bring the knowledge gained to develop the operational works toward the effectiveness | | | | | |
| 30. Bring the knowledge gained to develop the innovation for the continual learning | | | | | |
| 31. Bring the knowledge gained to develop the atmosphere forming to be the continual learning knowledge | | | | | |

**Part 4 Knowledge management system (KMS) technology using behavior in the organization**

4.1 Does your organization use the knowledge management system (KMS) technology in the organization?

☐ No
☐ Yes started from B.E.....until B.E.....
System name .....……
Responsible unit.....

4.2 Frequency of access to use the Knowledge management system (KMS) technology in your organization per week

☐ Less than 1 time per week ☐ 1-2 times per week
☐ 3-5 times per week ☐ more than5 times per week

4.3 Your time period as the member in Knowledge management system (KMS)

☐ 1-5 months ☐ 6-10 months
☐ 12 months ☐ more than12 months

4.4 Accessing into Knowledge management system (KMS) in your organization to record the content or to provide the opinion per months

☐ 1- 4 times per month ☐ 5-8 times per month
☐ 8-12 times per month ☐ more than13 times per month

4.5 Using the service of Knowledge management system(KMS) in your organization to know the information per week

☐ Less than1 times per week ☐ 1-2 times per week
☐ 3-5 times per week ☐ more than 5 times per week

4.6 Knowledge management system(KMS) development is used in your organization in which way?

(Can be chosen more than1items)

☐ Having the system development team in the organization
☐ Hiring the consultant or the external system developer
☐ Purchasing the application software or finished Information technology system to use
☐ Others please define.....

4.7What are the objectives that you enter to use the services of Knowledge management system (KMS) in the organization? (Can be chosen more than 1 items)

- ☐ Follow up the information of organizational relation
- ☐ Entertainment
- ☐ Communicating between the organizational personnel ☐ Email
- ☐ Conference/seminar ☐ Blogger
- ☐ Exchange the knowledge and benefit content
- ☐ Evaluation and follow up the operation
- ☐ Tool for your information spreading ☐ Up to date with technology
- ☐ Entering to use the membership system ☐ Writing article
- ☐ Pictures of organization activity ☐ Information technology downloading
- ☐ Web links
- ☐ Follow up the information on activities calendar
- ☐ Online conversation via KMS
- ☐ Others please define.....

4.8How the Knowledge management system (KMS) that you use has partly helped to support the organizational operation?(Can be chosen more than 1 items)

- ☐ Partly help to reduce the cost of business
- ☐ Partly help to reduce the customer cost and/or the raw material seeker
- ☐ Partly help to differentiate the product and service from the rivals in the same industry
- ☐ Generate more marketing opportunities by making more interesting products and services
- ☐ Partly help to form or produce the products that clearly response to the needs of specific group of customers
- ☐ Partly help to clearly response the service to the needs of specific group of customers
- ☐ Having the key role in the huge changes in the business processes
- ☐ Creating new products and services with Information technology components
- ☐ Partly help in management and the business expansion into the other provinces or countries
- ☐ Partly help forming the diversity in other products and services
- ☐ Partly help in connecting the customers with the raw material suppliers and other partners
- ☐ Others please define.....

**Part 5 The acceptance to use (KMS) information technology in the organization by the application of UTAUT model**

Please define your levels of opinion by marking✓on the items that mostly direct to the truth; the measuring criteria are as follows (1 = strongly disagree 2 = disagree 3 = neutral 4 = agree and5 = strongly agree)

| Description | levels of opinion | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| **KMS (Performance expectancy)** | | | | | |
| 1. Using KMS has benefits for your regular work | | | | | |
| 2. Using KMS helps you accomplish work faster | | | | | |
| 3. Using KMS is to increase the work effectiveness and efficiency | | | | | |
| 4. Using KMS is to increase the work progress opportunities | | | | | |
| **KMS (Effort expectancy)** | | | | | |
| 5. KMS has the accurate and complete content | | | | | |
| 6. KMS has the benefit content, interesting and being the source of knowledge | | | | | |
| 7. KMS uses the easy understandable language and grammatically correct | | | | | |
| 8. KMS can search for the content as required | | | | | |
| 9. KMS has the credible information content | | | | | |
| 10. Learning the methods of KMS using is easy for you | | | | | |
| 11. KMS is easy for you and you are skillful in using it | | | | | |
| 12. You found that KMS in the organization is easy to use | | | | | |
| **KMS (Social influence)** | | | | | |
| 13. The authority in the organization affects on your KMS using behavior | | | | | |
| 14. The authority in the organization is important to your KMS using | | | | | |
| 15. Top executives of the organization gain the benefits from using KMS | | | | | |
| 16. Your organization support the using of KMS in all units | | | | | |
| **KMS (Facilitating conditions)** | | | | | |
| 17. You have the necessary resources in using KMS | | | | | |
| 18. You have the necessary knowledge in using KMS | | | | | |
| 19. KMS cannot work together with other systems that you regularly use | | | | | |
| 20. There is the team or unit that provides consultancy on KMS for the assistance service on any system problems | | | | | |
| 21. You can give feedback and define the problems of the system works via KMS | | | | | |

**Part 6 Behavioral to use (KMS) information technology in the organization**

Please define your levels of opinion by marking✓on the items that mostly direct to the truth; the measuring criteria are as follows(1 = strongly disagree 2 = disagree 3 = neutral 4 = agree and5 = strongly agree)

| Description | levels of opinion | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| **KMS (Attitude toward using technology)** | | | | | |
| 13. KMS has the good working concept | | | | | |
| 14.KMS can help your work becomes more interesting | | | | | |
| 15. KMS can help you work happily | | | | | |
| 16. You can work together with KMS | | | | | |
| **KMS (Self-efficacy)** | | | | | |
| 26. You can operate or use KMS without previous learning | | | | | |
| 27. If there is no colleague or the specialist on KMS, you will be able to operate or work with KMS | | | | | |
| 28. You can contact to the KMS specialist in the organization to ask for help in case of any problem | | | | | |
| 29. You have enough time to study and understand KMS using in the organization | | | | | |
| 30. You have the facilities that enhance for the working with KMS in the organization | | | | | |
| **KMS (Anxiety)** | | | | | |
| 31. You have the anxiety about using KMS in the organization | | | | | |
| 32. You afraid to lose a lot of information during the use of KMS especially the miss press of buttons | | | | | |
| 33. You have hesitation to use KMS of the organization since you afraid to make mistake and unable to solve | | | | | |
| 34. KMS will warn about the work in case of any mistake in the system use | | | | | |
| **KMS (Usage Behavior)** | | | | | |
| 35. You intend to learn to use KMS of the organization in the next 6 months | | | | | |
| 36. You expect to learn to use KMS in the organization in the next 6 months | | | | | |
| 37. You plan to learn to use KMS in the organization in the next 6 months | | | | | |
| 38. In case that you used KMS of the organization, you tend to continue use it | | | | | |
| 39. You cannot estimate the cost and benefit of using KMS in the organization before any time of usage | | | | | |
| 40. You deliberately consider about the use of KMS in the organization before every time of usage | | | | | |
| 41. You automatically learn to use KMS in the organization | | | | | |

The researcher would like to thank for your kindly participation to give the information.

Miss Kanyarat Kumprom researcher
Tel086-0596684
E-mail:kanyarat.kib@gmail.com, kanyarat_k@mail.rmutt.ac.th

**Questionnaire (Thai Version)**

**แบบสอบถามสำหรับการศึกษา**

**ปัจจัยอิทธิพลของการดำเนินงานระบบ KMS ที่มีผลต่อการใช้งานของผู้ใช้ระบบ ในภาคธุรกิจบริการ และภาคอุตสาหกรรมในประเทศไทย**

**เรียน** ผู้ใช้งานระบบการจัดการความรู้ (KMS) ในองค์กร

กรุณากรอกแบบสอบถามอย่างสมบูรณ์ เกี่ยวกับความคิดเห็นด้านการใช้งานระบบการจัดการความรู้ในองค์กรของท่าน การตอบแบบสอบถามใช้เวลาประมาณ 30 นาที โดยแบบสอบถามนี้เป็นส่วนหนึ่งของเครื่องมือที่ใช้ในการเก็บข้อมูลสำหรับนักศึกษาระดับปริญญาเอก สาขาระบบสารสนเทศ คณะบริหารธุรกิจ มหาวิทยาลัยเทคโนโลยีราชมงคลธัญบุรี ในหัวข้อวิจัยเรื่อง **"ปัจจัยอิทธิพลของการดำเนินงานระบบ KMS ที่มีผลต่อการใช้งานของผู้ใช้ระบบ ในภาคธุรกิจบริการ และภาคอุตสาหกรรมในประเทศไทย"**

ข้อมูลที่เก็บรวบรวมจากแบบสอบถามของแต่ละบุคคลจะถูกเก็บไว้เป็นความลับ และไม่ระบุตัวตนของผู้ตอบแบบสอบถามแต่ละคน ข้อมูลที่เก็บรวบรวมเป็นเรื่องและแนวคิดที่เกี่ยวข้องกับหัวข้อวิจัยของผู้วิจัย การมีส่วนร่วมในการตอบแบบสอบถามของท่านเป็นความสมัครใจ ท่านสามารถจะปฏิเสธไม่เข้าร่วมได้ตลอดเวลา ซึ่งผลของการวิจัยนี้จะนำเสนอให้กับองค์กรที่เข้าร่วมโครงการ และทำเพื่อสร้างโอกาสสำหรับองค์กรที่มีความสนใจตรงกับเรื่องที่สำคัญซึ่งปรากฏในแบบสอบถามนี้ ซึ่งผู้วิจัยจะนำเสนอข้อมูลที่เป็นประโยชน์สามารถส่งเสริม และพัฒนาองค์กรในประเทศไทยได้

ขอขอบพระคุณสำหรับความกรุณา และการมีส่วนร่วมในการศึกษาหัวข้อวิจัยนี้

นางสาวกัลยรัตน์ คำพรม
นักศึกษาปริญญาเอก **สาขาวิชาเทคโนโลยีสารสนเทศ คณะบริหารธุรกิจ**
**มหาวิทยาลัยเทคโนโลยีราชมงคลธัญบุรี**

**<u>คำชี้แจง</u>**

1. แบบสอบถามมีทั้งหมด 5 ส่วน
   - ส่วนที่ 1 ข้อมูลด้านประชากรศาสตร์
   - ส่วนที่ 2 ข้อมูลลักษณะขององค์กร
   - ส่วนที่ 3 ความคิดเห็นของบุคลากรต่อการจัดการความรู้ในองค์กร
   - ส่วนที่ 4 พฤติกรรมการใช้เทคโนโลยีระบบการจัดการความรู้ (KMS) ในองค์กร
   - ส่วนที่ 5 การยอมรับการใช้เทคโนโลยีสารสนเทศระบบการจัดการความรู้ (KMS) ในองค์กร
   - ส่วนที่ 6 ความคิดเห็นผู้ใช้งานในด้านพฤติกรรมการใช้ระบบการจัดการความรู้ (KMS) ในองค์กร
2. ผู้ใช้งานระบบ KMS คือ ผู้ที่ใช้งานร่วมกันระหว่างระบบการจัดการความรู้ในองค์กร และระบบงานหลักในองค์กร
3. โปรดทำเครื่องหมาย ✓ ลงในช่องที่ตรงกับความคิดเห็นของท่าน

**ส่วนที่ 1 ข้อมูลด้านประชากรศาสตร์**

1.1 เพศ ☐ ชาย ☐ หญิง

1.2 อายุ ☐ 18-21 ปี ☐ 22-25 ปี ☐ 26-29 ปี
☐ 30-35 ปี ☐ 36-40 ปี ☐ 40 ปีขึ้นไป

1.3 สถานภาพ ☐ โสด ☐ สมรส ☐ หย่า

1.4 ระดับการศึกษา ☐ ต่ำกว่าปริญญาตรี ☐ ปริญญาตรี
☐ ปริญญาโท ☐ ปริญญาเอก

1.5 ประสบการณ์ทำงาน ☐ น้อยกว่า 1 ปี ☐ 1-3 ปี ☐ 4-5 ปี
☐ 6-10 ปี ☐ 10 ปีขึ้นไป

1.6 ตำแหน่ง ☐ ระดับหัวหน้าฝ่าย ☐ ระดับผู้ปฏิบัติงาน

1.7 แผนก……..……

**ส่วนที่ 2 ข้อมูลลักษณะขององค์กร**

2.1 ชื่อองค์กร……

2.2 ประเภทขององค์กร ☐ ธุรกิจการเงิน ☐ ธุรกิจบริการ
☐ อสังหาริมทรัพย์และก่อสร้าง ☐ เทคโนโลยีและการสื่อสาร

2.3 จำนวนพนักงานทั้งหมด ☐ ไม่เกิน 300 คน
☐ มากกว่า 300 คน ไม่เกิน 500 คน
☐ มากกว่า 500 คน ไม่เกิน 1,000 คน
☐ มากกว่า 1,000 คน

**ส่วนที่ 3 ความคิดเห็นของบุคลากรต่อการจัดการความรู้ในองค์กร**

กรุณาระบุระดับความคิดเห็นของท่านว่า มีการปฏิบัติอยู่ในระดับใด โดยทำเครื่องหมาย ✓ ตรงกับความเป็นจริงมากที่สุด เกณฑ์การวัดมีดังต่อไปนี้ (1 = ไม่มีการปฏิบัติเลย 2 = ปฏิบัติน้อย 3 = ปฏิบัติปานกลาง 4 =ปฏิบัติมาก และ 5 = ปฏิบัติมากที่สุด)

| รายการ | ระดับการปฏิบัติ | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| **ด้านการค้นหาความรู้** | | | | | |
| 1. จัดให้มีระบบเครือข่าย Intranet เพื่อค้นหาความรู้เกี่ยวกับกฎหมาย ระเบียบ คำสั่ง แนวทางปฏิบัติงานขององค์กร | | | | | |
| 2. จัดให้มีระบบเครือข่าย Intranet เพื่อค้นหาความรู้เกี่ยวกับงานกำกับดูแลขององค์กร | | | | | |
| 3. จัดให้มีระบบเครือข่าย Intranet เพื่อค้นหาความรู้เกี่ยวกับข้อมูลสนับสนุนการปฏิบัติงานขององค์กร | | | | | |
| 4. จัดให้มีระบบเครือข่าย Intranet เพื่อค้นหาความรู้เกี่ยวกับประสบการณ์ความชำนาญของงานแต่ละฝ่ายภายในองค์กร | | | | | |
| **ด้านการสร้างและแสวงหาความรู้** | | | | | |
| 5. มีการจัดตั้งผู้บริหารจัดการความรู้ (CKO) และคณะทำงานเพื่อรับผิดชอบโครงการจัดการความรู้ (KM) | | | | | |
| 6. มีการสัมมนา KM ในหน่วยงานอย่างสม่ำเสมอ | | | | | |
| 7. มีการฝึกอบรมเพื่อเพิ่มพูนความรู้อย่างสม่ำเสมอ | | | | | |
| 8. มีการแลกเปลี่ยนประสบการณ์จากผู้มีประสบการณ์สม่ำเสมอ | | | | | |
| 9. มีการสร้างข้อมูลสำหรับสนับสนุนการปฏิบัติงาน (บริการข้อมูล) | | | | | |
| **ด้านการจัดความรู้ให้เป็นระบบ** | | | | | |
| 10. มีการจัดทำระเบียบ คำสั่ง แนวปฏิบัติแต่ละสายงาน | | | | | |
| 11. มีการจัดทำคู่มือการปฏิบัติงานแต่ละสายงาน | | | | | |
| 12. มีการเก็บรักษาข้อมูลที่ศูนย์เทคโนโลยีส่วนกลาง และเผยแพร่บนระบบ Intranet | | | | | |
| 13. บนระบบ Intranet สามารถค้นหาข้อมูลประเภทต่าง ๆ ได้อย่างสะดวก รวดเร็ว และเป็นมาตรฐานเดียวกัน | | | | | |
| 14. มีการปรับปรุงข้อมูลต่าง ๆ ให้เป็นปัจจุบันเสมอ | | | | | |

| รายการ | ระดับการปฏิบัติ | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| **ด้านการประมวลผลและกลั่นกรองความรู้** | | | | | |
| 15. มีการจัดทำข้อมูลเกี่ยวกับลักษณะงานในแต่ละฝ่ายขององค์กรไว้ในระบบ Intranet | | | | | |
| 16. มีการจัดทำแนวทางปฏิบัติให้สอดคล้องกับลักษณะงานในแต่ละฝ่ายขององค์กรที่ออกใหม่สม่ำเสมอ | | | | | |
| 17. มีการจัดทำข้อมูลที่เกี่ยวข้องกับลักษณะงานในแต่ละฝ่าย เพื่อสนับสนุนการปฏิบัติงาน | | | | | |
| 18. มีการจัดทำห้องสมุดออนไลน์ เพื่อสนับสนุนข้อมูลการปฏิบัติงาน | | | | | |
| **ด้านการเข้าถึงความรู้** | | | | | |
| 19. มีระบบ KMS ให้เข้าไปเรียนรู้ | | | | | |
| 20. ในระบบ Intranet สามารถเข้าไปค้นหาข้อมูลสนับสนุนเกี่ยวกับงานที่เกี่ยวข้องได้ | | | | | |
| 21.ในระบบ Intranet สามารถเข้าไปค้นหาความรู้ต่างๆ ที่ต้องการได้ | | | | | |
| 22. มีการจัดกิจกรรมแลกเปลี่ยนความรู้ระหว่างบุคลากรในองค์กร | | | | | |
| **ด้านการแบ่งปันแลกเปลี่ยนความรู้** | | | | | |
| 23. มีการจัดทำ CoP (ชุมชนนักปฏิบัติ) | | | | | |
| 24. มี Web Board สำหรับการแลกเปลี่ยนความรู้ระหว่างกัน | | | | | |
| 25. มีการจัดสรรบุคลากรให้มีการสับเปลี่ยนงานเพื่อแลกเปลี่ยนความรู้และประสบการณ์ในการทำงาน | | | | | |
| 26. มีการให้ความรู้แก่บุคลากรในหน่วยงาน โดยผู้เชี่ยวชาญเฉพาะด้าน | | | | | |
| 27. มีการแลกเปลี่ยนความรู้ของทีมงานในแต่ละประเภทงานบนระบบ Intranet | | | | | |
| **ด้านการเรียนรู้** | | | | | |
| 28. มีการนำความรู้ที่ได้รับมาพัฒนาวิธีการปฏิบัติงาน และระยะเวลาในให้บริการที่เหมาะสม | | | | | |
| 29. มีการนำความรู้ที่ได้รับมาพัฒนางานที่ปฏิบัติให้เกิดประสิทธิภาพ | | | | | |
| 30. มีการนำความรู้ที่ได้รับมาพัฒนานวัตกรรมในการเรียนรู้อย่างต่อเนื่อง | | | | | |
| 31. มีการนำความรู้ที่ได้รับมาพัฒนาการสร้างบรรยากาศ เพื่อเป็นองค์กรแห่งการเรียนรู้อย่างต่อเนื่อง | | | | | |

**ส่วนที่ 4 พฤติกรรมการใช้เทคโนโลยีสารสนเทศระบบการจัดการความรู้ (KMS) ในองค์กร**

4.1 องค์กรของท่านมีการใช้เทคโนโลยีระบบการจัดการความรู้ (KMS) ในองค์กรหรือไม่

☐ ไม่มีการใช้งาน

☐ มีการใช้งาน เริ่มใช้เมื่อปี พ.ศ.....ถึง พ.ศ.....
มีชื่อระบบว่า .....
หน่วยงานรับผิดชอบ.....

4.2 ความถี่ในการเข้าใช้งานระบบการจัดการความรู้ (KMS) ในองค์กรของท่านต่อสัปดาห์

☐ ไม่น้อยกว่า 1 ครั้งต่อสัปดาห์ ☐ 1-2 ครั้งต่อสัปดาห์

☐ 3-5 ครั้งต่อสัปดาห์ ☐ มากกว่า 5 ครั้งขึ้นไปต่อสัปดาห์

4.3 ระยะเวลาในการเป็นสมาชิกในระบบการจัดการความรู้ (KMS) ของท่าน

☐ 1-5 เดือน ☐ 6-10 เดือน

☐ 12 เดือน ☐ มากกว่า 12 เดือน

4.4 การเข้าใช้บริการระบบการจัดการความรู้ (KMS) ในองค์กรของท่าน เพื่อบันทึกเนื้อหาหรือแสดงความคิดเห็นต่อเดือน

☐ 1- 4 ครั้งต่อเดือน ☐ 5-8 ครั้งต่อเดือน

☐ 8-12 ครั้งต่อเดือน ☐ มากกว่า 13 ครั้งขึ้นไปต่อเดือน

4.5 การเข้าใช้บริการระบบการจัดการความรู้ (KMS) ในองค์กรของท่าน เพื่อรับทราบข้อมูลต่อสัปดาห์

☐ ไม่น้อยกว่า 1 ครั้งต่อสัปดาห์ ☐ 1-2 ครั้งต่อสัปดาห์

☐ 3-5 ครั้งต่อสัปดาห์ ☐ มากกว่า 5 ครั้งขึ้นไปต่อสัปดาห์

4.6 การพัฒนาระบบการจัดการความรู้ (KMS) ที่นำมาใช้ในองค์กรท่าน ใช้แนวทางใด (เลือกได้มากกว่า 1 ข้อ)

☐ มีทีมงานพัฒนาระบบภายในองค์กร

☐ ว่าจ้างที่ปรึกษา หรือผู้พัฒนาระบบภายนอกองค์กร

☐ จัดซื้อซอฟต์แวร์ประยุกต์ หรือระบบสารสนเทศสำเร็จรูปเข้ามาใช้งาน

☐ อื่น ๆ โปรดระบุ.....

4.7 วัตถุประสงค์ที่ท่านเข้าใช้บริการในระบบการจัดการความรู้ (KMS) ในองค์กรมี อะไรบ้าง (เลือกได้มากกว่า 1 ข้อ)

☐ ติดตามข้อมูลข่าวสารสัมพันธ์ในองค์กร ☐ ความบันเทิง

☐ ติดต่อสื่อสารระหว่างบุคคลภายในองค์กร ☐ จดหมายอิเล็กทรอนิกส์ (Email)

☐ การประชุม/สัมมนา ☐ การเขียนกระดานความรู้ (Blogger)

☐ การแลกเปลี่ยนความรู้และสารประโยชน์ ☐ การประเมินผล และติดตามการปฏิบัติงาน

☐ เครื่องมือเผยแพร่ข้อมูลข่าวสารของตนเอง ☐ ความทันสมัย ทันเทคโนโลยี

☐ การเข้าใช้งานระบบสมาชิก ☐ การเขียนบทความ

☐ ภาพกิจกรรมในองค์กร ☐ การดาวน์โหลดข้อมูล

☐ การเข้าระบบการเชื่อมต่อ (Weblink) ☐ ติดตามข้อมูลด้านปฏิทินกิจกรรม

☐ การสนทนาออนไลน์ผ่านระบบ KMS

☐ อื่น ๆ โปรดระบุ.....

4.8 ระบบการจัดการความรู้ (KMS) ที่ท่านใช้งานมีส่วนช่วยสนับสนุนการดำเนินงานขององค์กรท่านอย่างไรบ้าง (เลือกได้มากกว่า 1 ข้อ)

☐ มีส่วนช่วยลดต้นทุนของการทำธุรกิจ

☐ มีส่วนช่วยลดต้นทุนของลูกค้า และหรือผู้จัดหาวัตถุดิบ

☐ มีส่วนช่วยทำให้สินค้าและบริการมีความแตกต่างออกไป จากคู่แข่งในอุตสาหกรรมเดียวกัน

☐ ทำให้สินค้าและหรือบริการมีความน่าสนใจเพิ่มโอกาสทางการตลาด

☐ มีส่วนช่วยในการสร้างหรือผลิตสินค้าตอบสนองสำหรับลูกค้าเฉพาะกลุ่มอย่างชัดเจน

☐ มีส่วนช่วยในการบริการตอบสนองสำหรับลูกค้าเฉพาะกลุ่มอย่างชัดเจน

☐ มีบทบาทสำคัญในสร้างการเปลี่ยนแปลงครั้งใหญ่ ๆ ในขั้นตอนทางธุรกิจ

☐ การสร้างสินค้าหรือบริการใหม่ ๆ มีส่วนประกอบของเทคโนโลยีสารสนเทศอยู่ด้วย

☐ มีส่วนช่วยในการบริหารจัดการ กับการขยายตัวของธุรกิจไปยังต่างจังหวัดหรือต่างประเทศ

☐ มีส่วนช่วยเพื่อสร้างความหลากหลาย ให้กับสินค้าหรือบริการอื่น ๆ

☐ มีส่วนช่วยทำเกิดการเชื่อมโยงกับลูกค้า ผู้จัดหาวัตถุดิบ และหรือคู่ค้าอื่น ๆ

☐ อื่น ๆ โปรดระบุ.....

**ส่วนที่ 5 การยอมรับการใช้เทคโนโลยีสารสนเทศระบบการจัดการความรู้ (KMS) ในองค์กร โดยประยุกต์ใช้แบบจำลอง UTAUT**

กรุณาระบุระดับความคิดเห็นของท่านว่ามีความคิดเห็นอยู่ในระดับใด โดยทำเครื่องหมาย ✓ ตรงกับความเป็นจริงมากที่สุด เกณฑ์การวัดมีดังต่อไปนี้ (1 = ไม่เห็นด้วยอย่างยิ่ง 2 = ไม่เห็นด้วย 3 = เฉยๆ 4 = เห็นด้วย และ 5 = เห็นด้วยอย่างยิ่ง)

| รายการ | ระดับความคิดเห็น | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| **ความคาดหวังในการปฏิบัติงานของระบบ KMS (Performance expectancy)** | | | | | |
| 1. การใช้ระบบ KMS มีประโยชน์ในงานประจำของท่าน | | | | | |
| 2. การใช้ระบบ KMS ทำให้สามารถทำงานได้สำเร็จ และรวดเร็วขึ้น | | | | | |
| 3. การใช้ระบบ KMS เป็นการเพิ่มประสิทธิภาพ และประสิทธิผลในการทำงาน | | | | | |
| 4. การใช้ระบบ KMS เป็นการเพิ่มโอกาสด้านความก้าวหน้าของงาน | | | | | |
| **ความคาดหวังในการใช้งานระบบ KMS (Effort expectancy)** | | | | | |
| 5. ระบบ KMS มีความถูกต้อง และครบถ้วนของเนื้อหา | | | | | |
| 6. ระบบ KMS มีเนื้อหาที่เป็นประโยชน์ มีความน่าสนใจ สามารถเป็นแหล่งความรู้ได้ | | | | | |
| 7. ระบบ KMS มีการใช้ภาษาที่เข้าใจง่าย และถูกต้องตามหลักไวยากรณ์ | | | | | |
| 8. ระบบ KMS สามารถค้นหาเนื้อหาตรงตามความต้องการ | | | | | |

| รายการ | ระดับความคิดเห็น | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| 9. ระบบ KMS มีเนื้อหาข้อมูลที่มีความน่าเชื่อถือ | | | | | |
| 10. การเรียนรู้วิธีการใช้งานของระบบ KMS เป็นเรื่องง่าย สำหรับท่าน | | | | | |
| 11. ระบบ KMS เป็นเรื่องง่ายสำหรับท่าน จนเกิดความเชี่ยวชาญในการใช้ระบบดังกล่าว | | | | | |
| 12. ท่านพบว่า ระบบ KMS ในองค์กรใช้งานง่าย | | | | | |
| **อิทธิพลของสังคมที่ผลต่อการใช้ระบบ KMS (Social influence)** | | | | | |
| 13. ผู้ที่มีอิทธิพลในองค์กรมีผลต่อพฤติกรรมในการใช้ระบบ KMS ของท่าน | | | | | |
| 14. ผู้ที่มีอิทธิพลในองค์กรมีความสำคัญกับท่านในการใช้ระบบ KMS ของท่าน | | | | | |
| 15. ผู้บริหารระดับสูงขององค์กรได้รับประโยชน์ในการใช้งานของระบบ KMS | | | | | |
| 16. ในองค์กรของท่าน ได้ให้การสนับสนุนการใช้ระบบ KMS ในทุกหน่วยงาน | | | | | |
| **สภาพสิ่งอำนวยความสะดวกที่มีผลต่อการใช้ระบบ KMS (Facilitating conditions)** | | | | | |
| 17. ท่านมีทรัพยากรที่จำเป็นในการใช้ระบบ KMS | | | | | |
| 18. ท่านมีความรู้ที่จำเป็นในการใช้ระบบ KMS | | | | | |
| 19. ระบบ KMS ไม่สามารถทำงานร่วมกับระบบอื่น ๆ ที่ท่านใช้งานประจำอยู่ได้ | | | | | |
| 20. มีทีมงาน หรือหน่วยงานให้คำปรึกษาระบบ KMS เพื่อให้บริการความช่วยเหลือปัญหาของระบบต่าง ๆ ได้ | | | | | |
| 21. ท่านสามารถเสนอแนะ ติชม ระบุปัญหาในการทำงานของระบบได้ โดยการส่งผ่านระบบ KMS ได้ | | | | | |

**ส่วนที่ 6 ความคิดเห็นผู้ใช้งานในด้านพฤติกรรมการใช้ระบบการจัดการความรู้ (KMS) ในองค์กร**

กรุณาระบุระดับความคิดเห็นของท่านว่ามีความคิดเห็นอยู่ในระดับใด โดยทำเครื่องหมาย ✓ ตรงกับความเป็นจริงมากที่สุด เกณฑ์การวัดมีดังต่อไปนี้ (1 = ไม่เห็นด้วยอย่างยิ่ง 2 = ไม่เห็นด้วย 3 = เฉยๆ 4 = เห็นด้วย และ 5 = เห็นด้วยอย่างยิ่ง)

| รายการ | ระดับความคิดเห็น | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| **ทัศนคติที่มีต่อการใช้เทคโนโลยีระบบ KMS (Attitude toward using technology)** | | | | | |
| 1. ระบบ KMS มีแนวคิดการทำงานที่ดี | | | | | |
| 2. ระบบ KMS จะสามารถช่วยให้การทำงานของท่าน มีความน่าสนใจมากขึ้น | | | | | |
| 3. ระบบ KMS สามารถทำให้การทำงานของท่านมีความสุข | | | | | |
| 4. ท่านสามารถทำงานร่วมกับระบบ KMS ได้ | | | | | |
| **การรับรู้ความสามารถในการใช้งานระบบ KMS (Self-efficacy)** | | | | | |
| 5. ท่านสามารถดำเนินการ หรืองานที่ใช้ระบบ KMS ได้โดยไม่ต้องมีการเรียนรู้มาก่อน | | | | | |
| 6. ถ้าไม่มีเพื่อนร่วมงาน หรือผู้เชี่ยวชาญระบบ KMS ท่านสามารถดำเนินการ หรืองานที่ใช้ระบบ KMS ได้ | | | | | |
| 7. ท่านสามารถโทรติดต่อผู้เชี่ยวชาญด้านระบบ KMS ในองค์กรเพื่อขอความช่วยเหลือในกรณีที่มีปัญหา | | | | | |
| 8. ท่านมีเวลาเพียงพอในการศึกษา และทำความเข้าใจในการใช้งานระบบ KMS ขององค์กร | | | | | |
| 9. ท่านมีสิ่งอำนวยความสะดวกต่าง ๆ ที่เอื้อต่อการทำงานระบบ KMS ขององค์กร | | | | | |
| **ความกังวลในการใช้งานระบบ KMS (Anxiety)** | | | | | |
| 10. ท่านมีความรู้สึกวิตก กังวลเกี่ยวกับการใช้ระบบ KMS ขององค์กร | | | | | |
| 11. ท่านกลัวการสูญเสียข้อมูลจำนวนมาก ระหว่างการใช้งานระบบ KMS โดยเฉพาะการกดปุ่มผิดพลาด | | | | | |

| รายการ | ระดับความคิดเห็น | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| **ความกังวลในการใช้งานระบบ KMS (Anxiety)** | | | | | |
| 12. ท่านมีความลังเลที่จะใช้ระบบ KMS ขององค์กร เนื่องจากเพราะกลัวการทำผิดพลาด และไม่สามารถแก้ไขได้ | | | | | |
| 13. ระบบ KMS จะมีการเตือนการทำงาน กรณีเกิดความผิดพลาดของระบบงานที่ท่านใช้ | | | | | |
| **พฤติกรรมความตั้งใจที่จะใช้งานระบบ KMS (Behavioral intention to use the system)** | | | | | |
| 14. ท่านมีตั้งใจที่จะเรียนรู้การใช้งานระบบ KMS ขององค์กร ใน 6 เดือนข้างหน้า | | | | | |
| 15. ท่านคาดการณ์ว่า จะเรียนรู้การใช้งานระบบ KMS ขององค์กร ใน 6 เดือนข้างหน้า | | | | | |
| 16. ท่านวางแผนที่จะเรียนรู้การใช้งานระบบ KMS ขององค์กร ใน 6 เดือนข้างหน้า | | | | | |
| 17. กรณีที่ท่านได้ใช้งานระบบ KMS ขององค์แล้ว ท่านมีแนวโน้มที่จะงานระบบต่อไป | | | | | |
| **พฤติกรรมการใช้งานระบบ KMS (Usage Behavior)** | | | | | |
| 18. ท่านไม่สามารถประเมินค่าใช้จ่าย และประโยชน์ของการใช้งานระบบ KMS ขององค์กร ก่อนการใช้งานทุกครั้ง | | | | | |
| 19. ท่านพิจารณาอย่างรอบคอบเกี่ยวกับการใช้งานระบบ KMS ขององค์กร ก่อนการใช้งานทุกครั้ง | | | | | |
| 20. ท่านมีเรียนรู้การใช้งานระบบ KMS ขององค์กร เป็นไปโดยอัตโนมัติ | | | | | |

ผู้วิจัยขอขอบพระคุณสำหรับความอนุเคราะห์ในการให้ข้อมูลของท่านมา ณ โอกาสนี้

นางสาวกัลยรัตน์ คำพรม ผู้วิจัย

โทรศัพท์ 086-0596684

E-mail: kanyarat.kib@gmail.com, kanyarat_k@mail.rmutt.ac.th

# APPENDIX B

## The Interview Form (Thai Version)

# แบบสัมภาษณ์งานวิจัย

**เกี่ยวกับความคิดเห็นของผู้เชี่ยวชาญด้านเทคโนโลยีสารสนเทศที่มีต่องานวิจัยเรื่อง : ปัจจัยอิทธิพลของการดำเนินงานระบบ KMS ที่มีผลต่อการใช้งานของผู้ใช้ระบบในภาคธุรกิจบริการ และภาคอุตสาหกรรม**
**ในประเทศไทย**


**ผู้วิจัย** นางสาวกัลยรัตน์ คำพรม
นักศึกษาปริญญาเอก สาขาวิชาระบบสารสนเทศ
คณะบริหารธุรกิจ มหาวิทยาลัยเทคโนโลยีราชมงคลธัญบุรี

**อาจารย์ที่ปรึกษา** 1. ผู้ช่วยศาสตราจารย์ ดร.ยุทธชัย เลิศวรปรัชญ์
สาขาวิชาเทคโนโลยีสารสนเทศ คณะบริหารธุรกิจ
มหาวิทยาลัยเทคโนโลยีราชมงคลธัญบุรี
2. ผู้ช่วยศาสตราจารย์ ดร.สังวรณ์ งัดกระโทก
สาขาวิชาศึกษาศาสตร์ มหาวิทยาลัยสุโขทัยธรรมาธิราช
3. ดร.เฉลิมศักดิ์ เลิศวงศ์เสถียร
ศูนย์เทคโนโลยีสารสนเทศและการสื่อสาร สำนักงานปลัดกระทรวงการคลัง
กระทรวงการคลัง

**แบบสัมภาษณ์ (Semi-Structured Interview Form)**

**สำหรับผู้บริหารเทคโนโลยีสารสนเทศ (CIO)/ ผู้บริหารจัดการความรู้ (CKO)**

ชื่อ – สกุล

ผู้ตอบ:_____

องค์กร/

บริษัท:_____

ประเภทธุรกิจ/

อุตสาหกรรม:_____

ฝ่ายหรือแผนก:_____

ตำแหน่ง:_____

วันที่สัมภาษณ์:_____

เวลาเริ่มต้นสัมภาษณ์:_____

เวลาเริ่มสิ้นสุด

สัมภาษณ์:_____

รวมระยะเวลา

ทั้งสิ้น:_____

1. ท่านมีความเห็นอย่างไรในเรื่องความก้าวหน้าและการใช้งานเทคโนโลยีสารสนเทศมีความสำคัญสำหรับการดำเนินธุรกิจของในแต่ละองค์กร/หน่วยงาน

_____

_____

_____

_____

2. มีการนำเทคโนโลยีระบบการจัดการความรู้มาใช้หรือไม่(ถ้ามี) ท่านนำระบบอะไรมาใช้ในการจัดการความรู้ภายในองค์กร/หน่วยงานของท่าน โดยมีวัตถุประสงค์คืออะไร และสามารถบรรลุตามเป้าหมายตามที่ท่านที่กำหนดหรือไม่เพียงใด

_____

_____

3. ท่านมีความเห็นว่าอะไรเป็นปัจจัยสำคัญที่ทำให้พนักงานของท่านยอมรับการนำเทคโนโลยีระบบการจัดการความรู้มาใช้ในองค์กร/หน่วยงานของท่านประสบความสำเร็จ

4. การจัดทำแผน/นโยบายในการนำเทคโนโลยีระบบการจัดการความรู้มาใช้ในองค์กร/หน่วยงานของท่านหรือไม่ (ถ้ามี)เป็นแผนกลยุทธ์เทคโนโลยีสารสนเทศ ปี พ.ศ._____ถึงปี พ.ศ._____ และแผนดังกล่าวจัดทำโดย_____ใครหรือหน่วยงานใด ที่มีบทบาทสำคัญและมี CEO หรือ CKO ผู้บริหารธุรกิจอื่นๆเข้ามามีส่วนร่วมหรือไม่อย่างไร

5. ในกระบวนการจัดทำแผน/นโยบาย นำเทคโนโลยีระบบการจัดการความรู้มาใช้ มีการวิเคราะห์ถึงการเชื่อมโยงกับกลยุทธ์ธุรกิจมาช่วยด้วยหรือไม่

-ไม่มีการเชื่อมโยง คาดว่าจะมีการจัดทำเมื่อใด

-หากมีการวิเคราะห์ถึงการเชื่อมโยงมีการประเมินว่า ศักยภาพเทคโนโลยีสารสนเทศในปัจจุบันขององค์กรเพียงพอหรือไม่ที่จะสนับสนุนธุรกิจของท่าน

- หากไม่เพียงพอได้มีการวางแผนในการจัดหาหรือพัฒนาเพิ่มเติมหรือไม่อย่างไร

- เพียงพออย่างไร ยกตัวอย่างศักยภาพของเทคโนโลยีสารสนเทศ ที่สนับสนุนธุรกิจของท่าน มา 1 กรณี

_____

_____

_____

_____

_____

6. ปัจจุบันในองค์กร/หน่วยงานของท่านได้มีการใช้ระบบเทคโนโลยีสารสนเทศอะไรบ้างที่มีความสำคัญต่อการสนับสนุนธุรกิจ (อาจตอบได้มากกว่า 1 ระบบ) และระบบดังกล่าวมีจุดแข็งและจุดอ่อนอย่างไร

| **ระบบเทคโนโลยีสารสนเทศที่ใช้ในองค์กร** | | **จุดแข็ง** | **จุดอ่อน** |
|---|---|---|---|
| ระบบสารสนเทศหลัก | ( ) ระบบจัดซื้อวัตถุดิบ<br>( ) ระบบบริการหลังการขาย<br>( ) ระบบเพื่อการผลิตหรือการบริการ<br>( ) ระบบบริหารสินค้าคงคลัง<br>( ) ระบบการขายและวิเคราะห์ตลาด<br>( ) ระบบคอมพิวเตอร์ช่วยในการออกแบบ<br>( ) ระบบบริหารการขนส่ง<br>( ) อื่น ๆ โปรดระบุ_____ | | |
| ระบบสารสนเทศสนับสนุน | ( ) ระบบสำนักงานอัตโนมัติ<br>( ) ระบบฝึกอบรม<br>( ) ระบบบัญชี การเงิน<br>( ) กรุ๊ปแวร์ เช่น Lotus Note<br>( ) ระบบจัดซื้อวัสดุและอุปกรณ์สำนักงาน<br>( ) ระบบบริหารสินทรัพย์<br>( ) ระบบบริหารทรัพยากรมนุษย์<br>( ) อื่น ๆ โปรดระบุ_____ | | |

| | | | |
|---|---|---|---|
| ระบบสารสนเทศอื่นๆ | ( ) ระบบอีเมล (e-Mail)<br>( ) เว็บไซต์องค์การ (Web Site)<br>( ) ระบบพาณิชย์อิเล็กทรอนิกส์ (E-Commerce)<br>( ) ระบบบริหารทรัพยากรองค์การ (Enterprise Resource Planning System)<br>( ) ระบบบริหารลอจิสติกส์และโซ่อุปทาน (Logistic and Supply Chain Management System)<br>( ) ระบบบริหารลูกค้าสัมพันธ์ (Customer Relationship Management System)<br>( ) ระบบการจัดการความรู้ (Knowledge Managenent System)<br>( ) อื่น ๆ โปรดระบุ_____ | | |

7. รูปแบบองค์กร/วัฒนธรรมองค์กรของท่านในปัจจุบันมีส่วนสำคัญต่อความสำเร็จในการนำระบบการจัดการความรู้เข้ามาใช้ในองค์กรอย่างไร

_____

_____

_____

_____

_____

_____

_____

8. ปัญหา/สิ่งที่ต้องแก้ไข/ปรับปรุงในการนำระบบการจัดการความรู้เข้ามาใช้ในองค์กรของท่าน คืออะไร และมีวิธีการแก้ปัญหา/ที่ต้องแก้ไข/ปรับปรุงอย่างไร

_____

_____

_____

_____

_____

_____

ผู้วิจัยขอขอบพระคุณในความอนุเคราะห์ของท่านมา ณ โอกาสนี้

นางสาวกัลยรัตน์ คำพรม ผู้วิจัย

โทรศัพท์ 086-0596684

Kanyarat.kib@gmail.com, kanyarat_k@mail.rmutt.ac.th

## Biography

| | |
|---|---|
| **Name – Surname** | Miss Kanyarat Kamprom |
| **Date of Birth** | October 14, 1981 |
| **Address** | Faculty of Management Science,<br>Uttaradit Rajabhat University,<br>27 Injaimee Rd. Tha-it , Mueang, Uttaradit, 53000 |
| **Education** | Master of Business Administration (Information System),<br>Faculty of Business Administration, Rajamangala University of Technology Thanyaburi (2007) |
| **Experience Work** | Lecturer,Computer Business Department, Faculty of Management Science, Uttaradit Rajabhat University , (2007 – present) |
| **Telephone Number** | 08-6059-6684 |
| **Email Address** | kanyarat.kib@gmail.com, kanyarat_k@rmutt.ac.th |

## Declaration

This work contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and beliefs, contains on material previously published or written by another person, except where due reference has been made in the text.

I give consent to this copy of my dissertation, when deposited in the university library, being available for loan and photocopying.

Kanyarat Kamprom