

**KNOWLEDGE CREATION IN RECYCLING BUSINESS:  
THAI CASE STUDY**



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entitled  
**KNOWLEDGE CREATION IN RECYCLING BUSINESS:  
THAI CASE STUDY**

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## **KNOWLEDGE CREATION IN RECYCLING BUSINESS: THAI CASE STUDY**

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### **ABSTRACT**

This study will continue to research further from the knowledge creation concept. However, the study will mainly focus on recycle business. The reason that the recycle business is used as the source of data analysis in this paper is that this business is quite traditional in terms of knowledge. Also, recycle business becomes an important issue globally as the number of recycling company is increasing greatly. Therefore, this study can be useful for the recycle company in order to make their working process better by applying knowledge management concept. Initially, this paper will focus on the concept of knowledge creation. The source of data and analysis of this paper is the firm that trades the recycle glass. This company is the new company. The result will be about the knowledge creation concept can be used to applied in this company, which the way that knowledge occurs in people is matched with the knowledge creation processes, which are tacit to tacit, tacit to explicit, explicit to explicit, and explicit to tacit. Each of the stage can happen depending on many factors. In addition, there is a new finding that is found in this study, which can be added to the knowledge creation process. The issue is about the two stages in knowledge creation process could happen at the same time from the same cause, which supported by the study and interview from the one who work in the company.

**KEY WORDS:** Knowledge creation, Tacit knowledge, Explicit knowledge, Knowledge Creation Process

24 pages

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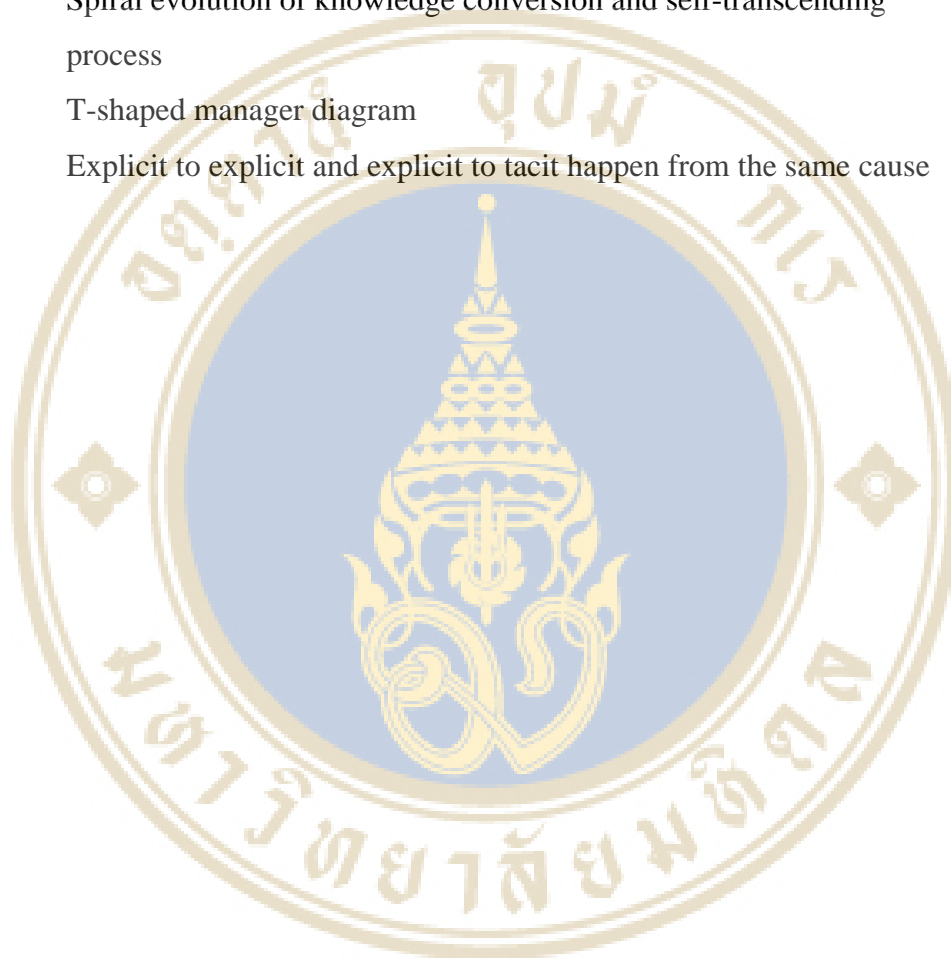
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## **CHAPTER I**

### **INTRODUCTION**

Knowledge is important for the world. Day by day that the history of mankind continues, there is knowledge flowing without noticing. In daily life, everything involved with knowledge even a little thing or action. Knowledge can be right or can be wrong depending on the thing that the knowledge is applied. The knowledge that is proved to be right, and people accept it will be kept within people as memory. Then it will be taught from one generation to another generation. With the knowledge from the previous generation, human can make their lives better. However, knowledge can be disappeared. For example, the previous generation did not teach any knowledge to the next generation, the knowledge can be lost. Therefore, it is important for human to find knowledge, qualify it, teach it, and keep it to be used when the situation requires.

The idea of using knowledge in daily life is not limited for living issue only. There is an effort to bring the using of knowledge to the business. Actually, it is all the same. Knowledge also involves in the business for a long time. Knowledge makes the operating of business easier and better, especially the business, nowadays, even requires knowledge more and more. The reason is that people want to do and get things done faster without any difficulty or problem in order to get closer to the perfection as much as they can. Therefore, knowledge will be more and more important in the future.

To reach that ideal concept, knowledge management is required. It is important for the business to apply knowledge management into their daily working process. Actually, it can be used for the whole company. However, it is also crucial to have the one that suits with the organizational culture and working style of the company. Each company will have different culture and working style. Some companies are in the same industry but have different policies, which make their organizations different in terms of management. Therefore, the companies that will



apply knowledge management concept into their organizations will have to identify and analyze their organizations. Also, the companies should have the objective for applying knowledge management and make it clear for the whole company to understand what their companies want. Otherwise, it can be failed because each company is different, and people in each company can react to the new thing differently. One of the most important issues, nowadays, is recycling. It is the thing that can help the world to reduce trash. Also, it can save the resources of the world. Therefore, it is crucial to apply knowledge management to the company that operates in the recycle business. However, the tradition and style of the recycling business is quite conservative. There is only a few changes from time to time, especially in Thailand. In fact, the knowledge in the recycling business can be flowed faster. Therefore, this research will study about recycling business and how the company in the recycling business uses the knowledge management in their own way in order to match it with the concept of knowledge management from the professionals and aims to use the study to initially improve the knowledge management of the company. Later on, this study can be a navigational study for further research about knowledge management in recycling business in the future.

The structure of this research will start with literature review, which will talk about knowledge management and the study that professionals have done about it, especially knowledge creation. Then research methodology will be discussed. Next is the data and analysis, which will generate the result for the paper. Finally, the conclusion will summary the result with the concept and goal of this paper.

## **CHAPTER II**

### **LITERATURE REVIEW**

If you know the enemy and know yourself, you need not fear the results of a hundred battles (Sun Tzu, 1994). This quote has been proved to be true for thousand years through many eras that knowledge is useful for battles in order to win over enemies. However, the world has changed. Nowadays, there are few battles in the world, but the essence of knowledge is still the same. The reason is that the battles are not in the form of fighting and killing, but it transforms to business competition.

Knowledge is a powerful and useful source that many companies use in order to beat their competitors in order to survive in the business world. There are many ways to utilize the benefits of knowledge. Some firms use knowledge for the internal benefits such as training and improvement. Some firms use knowledge to gain the competitive advantage in the market. Some firms just want to step further than their competitors because they believe in the first mover advantage of the market. Therefore, knowledge management is a crucial issue that many companies have to study and be able to apply if they want their business to grow and stay sustainably in the long term.

In the business world, there is a rotation of people in the organization. It is hard to keep people with one organization for their whole working life. However, an individual may have knowledge that could generate benefit to their organization though it is a short working time. When that person leaves, the knowledge leaves the organization, too. Also, there is no guarantee that the new person who takes the responsibility will gain the same knowledge. Therefore, it is important to have knowledge management in the company in order to support people to have new knowledge, be able to share the knowledge they get to other people for the benefit of the whole organization, store the knowledge in the proper way, and be able to apply the knowledge in order to help the company to the success in the long term.

Regard to the benefit of organizations, knowledge management has been included in order to support the company to be able to survive in the business competition. The importance of knowledge management has been studied and proved by many researches. Some researchers found that many companies had problems in their working process such as customer and supplier contact after they lose their staffs that used to be responsible for that task and the departure of staffs could lead to the loss of income to the company (KPMG, 1998). Therefore, it is important that many companies try to solve and prevent this kind of problem by applying knowledge management project.

Knowledge management is a long term project that requires many aspects in the organization to achieve the organization's goal. The factor that could impact the success of knowledge management is that the organization has to support the project by having the facility, environment, policy, and structure that could blend with the knowledge management (Biloslavo & Zornada, 2004). Therefore, the company should have clear goal and intention to apply knowledge management project because the process of knowledge management requires the involvement of the whole company. Knowledge management consists of 4 processes, which are knowledge creation, knowledge sharing, knowledge storage, and knowledge application. These four processes have different goals. Each of them is useful and supports the knowledge management at the different time for different tasks because knowledge can occur any time. For example, a person may realize the new knowledge immediately during the working period. That person may use the new knowledge with the job, and that person may not discuss or share the knowledge with others about the new knowledge that he just realizes or may not keep the knowledge in order to be useful for other persons (Alavi, 2001). In fact, that knowledge may be helpful for the whole organization or could help to improve the working process. With this example, it is clear that any organization that could make use of knowledge management process could gain more competitive advantage. Therefore, the knowledge management processes have to be arranged and installed properly within the organization.

There are many factors that could drive the knowledge management processes to work effectively. One of the factors that could make the knowledge management processes work smoothly is the organizational culture though some

people focus on organizational structure technology to support the knowledge management system. Another useful factor is the methods that would make people feel comfortable to share the knowledge to others. The next factor is the decision to choose which knowledge to keep (Alavi, 1999).

As knowledge management process is so important to the business world nowadays, it is important to start putting some of them in the elements of the company. One of the most important issues from the knowledge management system is the process where the knowledge starts, knowledge creation.

Knowledge creation is the continual process that provides collaboration between designers and relation to customers including the step that can let members learn from their own and others' experiences in order to improve the performance and working process of the company involves with the tacit and explicit knowledge (De Michelis, 1998). Tacit knowledge is the knowledge that is highly valuable and so difficult to share to other people because individual normally keeps it in their brain (Nonaka, 2007). The example of tacit knowledge is experience of familiarity of people. It is hard to teach others to have the same level of knowledge as the individual. For example, football coach can tell the players how to predict where the ball will be moving when they are on the field, but it can be seen that the players cannot do well as their coach expect them to do though the coach already told them how to predict the next area of the ball.

Another knowledge that involves in knowledge creation is explicit knowledge. Opposite to tacit, the explicit knowledge is actionable and can be expressed to make people understand (Nonaka, 2007). The example of explicit knowledge is report or letter that people can realize the knowledge as they see the illustration. For example, people read the same topic from the same newspaper. It is sure that those people will get the same knowledge. In addition, tacit and explicit knowledge can converse all the time during the knowledge creation process, which is the different way to create knowledge.

There are 4 stages in the conversion of knowledge, which are socialization, externalization, combination, and internalization. These 4 stages help to explain how knowledge changes the form. First, socialization is the converse of knowledge from tacit knowledge to tacit knowledge. The example of socialization can be discussions or

team meetings. Second, externalization is the stage that tacit knowledge converse to explicit knowledge. The example of externalization can be the dialog within team or answer questions. Another stage is combination, which is the stage where explicit knowledge converses to explicit knowledge. The concrete example is mail or report that people send to others. Finally, internalization is the stage that explicit knowledge will converse to tacit knowledge. The example of this stage is the time that people receive report and start to read it. The information in the report, explicit knowledge, will change the form and go to stay people mind, tacit knowledge, and will be ready to be used (Nonaka, 2007).

Knowledge creation is not a new thing. It can be defined as one of the most important resources to drive the economy (Hertog and Bilderbeek, 1997). Many researchers have done researches about it. Also, many companies recognized the benefits of organizational knowledge as one of the intangible assets to the companies (Robert S. Frey, 2001). Some companies brought some concept of knowledge management, knowledge creation, and applied it to their own organization to increase the benefits. For example, Eisai, the pharmaceutical company from Japan, applied the concept of knowledge creation to the company in order to support internalizing and promoting innovation. The company established the knowledge creation department. The reason for this is because they have a huge group of employees who were located outside Japan because of the globalization of sales, production, and R&D. This application also involves with tacit and explicit knowledge. The entire training at Eisai was redesigned, and the new program gave attention to development of people's creativity and was formed to the need of employees (Knowledge Creation at Eisai, 2011). Also, the knowledge creation has to be measured. It can be measured as new ideas, new products and services, and new processes (Rebecca Mitchell, 2010). However, the result of applying knowledge creation to the business may be varied depending on the environment and factors of each industry. In this thematic paper, the industry that will be used to study the applying of knowledge creation is recycling business in Thailand.

It is so important to study about knowledge creation in recycle business because the result of this can help the Thai recycle business to improve their quality of

service, performance, and products. Also, it can be a key to improve the businesses that have similar characteristics.



## **CHAPTER III**

### **RESEARCH METHODOLOGY**

Recycle has become one of the most important issues in the world. It is one of the ways to reduce the trash. Also, it could reduce the cost of production during the production process. The materials for recycle are various such as steel, paper, plastic, glass, and etc. Many manufacturers use the recycle materials as their supply to reproduce their product again. Therefore, it could be compared to other business supplies of production such as agriculture.

The nature of recycle business in Thailand is quite conservative. People will do the things that are almost the same as people in the past has done. The process is that the trash comes from junk shops to the recycle trader that buys recycle material, and this company will sell the recycle material to the factory that produces their products from the recycle material. The knowledge that people know does not change from the past so much. For example, the factory announced since 20 years ago that the length of the steel had to be limited at 80cm. The reason is that they cannot put the long steel into the smelter. Therefore, they have to cut the steel. If the steel is longer than the limitation, the trader will be fined. Then the recycle trader knew that if the junk shop sold the steel that is over the limit, they had to cut the steel before they sold to the factory. The trader took some time to cut the long steel and realized that there is a cost during the process of cutting the steel because cutting steel requires gas and people, so the wage and cost of gas will be increased for them. This situation leads to the charge of the long steel when the trader bought the long steel from junk shops. This situation stays the same for a long time until now. Recently, there is a company name Scrap Thailand, which buys and sells steel for recycle. The company is famous for buying steel without charging junk shops for long steel. The firm improved the internal process itself to solve the problem of long steel. What they do is that they build a machine that could cut the steel into pieces and set the price a little bit cheaper than their competitors. By doing this, many junk shops go to sell their steel to Scrap

Thailand. For example, if company A set the buying price at 10.50baht per kilo. In case, junk shops sell long steel to this firm, they will be charged for long steel about 0.20baht per kilo. Therefore the price will be 10.30baht per kilo. However, Scrap Thailand set their buying price at 10.40baht per kilo without charging for long steel. When junk shops compare the price and condition, they probably go to Scrap Thailand because they know that they will get the higher profit. Also, Scrap Thailand can ask the factory for the special higher price per kilo for the steel they will sell to the factory because they know that they hold a huge quantity of supply for the factory. In recycle business, the fact that cannot be refused is that quantity plays a more important role than quality, and Scrap Thailand knows that fact well, which is the starting point of the knowledge creation in the recycle business.

It is so amazing that a company could find the way to solve the problem that has been in the recycle business for about 20 years. Therefore, the study of this paper will aim to the process of knowledge creation in the company, especially in the recycle business. The study will scope into the recycle business. The company that will collaborate in this research is one of the recycling companies, Reunion Plus. The company is located in Samutsakorn Province. Their business activities are to buy and sell glass for recycle. The company is famous in fast service. Therefore, many junk shops prefer to sell glass here though there are other glass recycling companies that offer higher price to them. Therefore, the research will aim to clarify the knowledge that the firm use to apply in their daily work for products and services and the process to create knowledge by comparing to the concept of explicit and implicit knowledge framework.

There are two types of research methods, which are qualitative and quantitative method. The difference is that the quantitative method will interpret the result from the data in the form of frequency or number through research tools such as questionnaire, survey, and etc. under the controlled condition on the interested sample population. The qualitative method will extract the result of the research from understanding and feeling by interviewing, focus group, and etc. Therefore, the result will be in the contextually descriptive report.

For this thematic paper, qualitative method will be used to extract the result through interviewing the staffs in the company, Reunion Plus. The goal is to



understand the factors that drive the company to create knowledge, understand the process of knowledge creation in recycling business, and try to clarify the benefits of knowledge creation to the whole recycle business. Face to face interview is the most common and easiest tool of qualitative research method. The data from interviewing will be used to describe and compare with the existing knowledge creation process. The open-ended question will be applied in the interview because the research objective is to get the real information from the interviewees. Therefore, it will be better for the research to ask the question that could let the interviewees answer from their own experience and perspective and avoid to persuade or block their ideas.

All interviews are audio recorded with the permission of interviewees while the interviewer will take notes in order to check whether the interview goes along with the outline or not.

A list of open-ended question is developed because there are many aspects that involves in knowledge creation in recycling business. Therefore, it will generate the result more that could be used in the research if the question is provided into a list so that it can cover many aspects. These questions are provided below.

- What is the importance of knowledge in recycling business?
- Does the knowledge generate impact to you, negative or positive?
- What did you do in order to get the knowledge?
- Do you have any plan to create new knowledge?

The sample who participated in this research will be 4 people from different department. Each person is responsible for core activities for the firm such as financial and administration manager, front line manager, truck driver, and marketing manager. Each person comes from different fields of study. Also, they have completely different background. The brief information about the interviewees will be shown below:

The financial and administration manager, Jitpapatsorn, is the only woman in the company. She is the one who manage the documents, write reports to show the performance of the company. Also, she is the one who manage the financial part of the company. All payment, cash, deposit, and withdrawal have to go through her consideration before submitting to CEO. She has experience in many different businesses such as telecommunication and production.

The front line manager, Somjate, is the one who operates the working process of the company. It could be implied that he is one of the core part of the company. He is the one who has to talk to the suppliers when they deliver the glass to the company. It is also his responsibility to qualify the glass. Moreover, he has to manage the labor allocation in order to make the working process efficient. He has worked in the construction industry.

The truck driver, Ruang, is the one who rarely stay in the office or even the company area. He has to be away of the company almost all day and every day. The destination will be different depending on the destination that the company informs him to deliver the glass. He has high experience. His work experience is loads such as farmer, mechanic, personal driver, and taxi -driver.

The marketing manager, Peerapong, is the one who has been working with the current CEO for a long time since the old company. His responsibility is to contact all the suppliers of the company and factories that want to buy the glass from the company. He will come to office in the morning and leave the office before the afternoon because he has to visit the suppliers and find new suppliers. He has work experience as instructor in private school and production business.

The only one thing that they share the similarity is that they start working in recycle business at the same time. So, they will be good interviewees because they just learn about recycle industry.

For the framework is the research, SECI model will be used to be the based model for this study. It will help the research to identify which stage of knowledge creation that the new knowledge occurs. Also, it can help to identify whether the knowledge that just occurs is implicit knowledge or explicit knowledge. The data and information that will also be extracted from the interviewees will be clarified in order to match with the SECI model.

Spiral evolution of knowledge conversion and self-transcending process (Nonaka & Konno, The Concept of "Ba" Building a Foundation for Knowledge Creation, 1998)

In the recycle business, knowledge can occur any time because there are so many techniques in each activity, which each technique could make impact that can generate tangible and intangible benefit to the firm. SECI model will help to interpret

the data to be easier to understand, which could help the recycle business to improve faster in the future.



## **CHAPTER IV**

### **DATA ANALYSIS**

Data Analysis is the process of systematically applying statistical and/ or logical techniques to describe and illustrate, condense and recap, and evaluate data (Shamoo and Resnik, 2003). Therefore, it is a very important part for making a study or research to be a good navigational study for people so that the data, information, and result can be useful for people who want to study more or have to use the study to use in their work or project in the future. The data that will be analyzed has to be the real one. Also, the analysis has to take time to consider all the possible points or study in the topic.

The analysis of this study used the data that was interpreted from the interviewing individually, which will be adapted and compared to the study about the knowledge creation process.

#### **4.1 Finding**

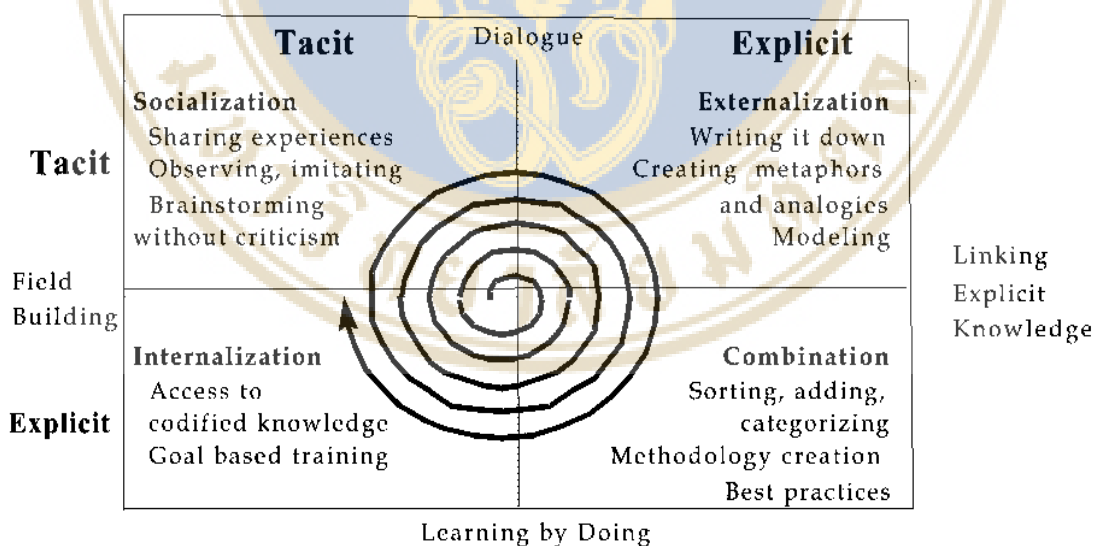
The interview started by asking about the communication flow of the company. Generally, it is a personal communication, which can be verbal or writing depending on personality and responsibility of people that the sender wants to send knowledge.

Each department will have different responsibility. Also, each department will have their own culture or style to learn the new thing. Therefore, the training and information flow in order to make people in the organization will be customized to suit each person to learn effectively. The way that the interviewee usually got knowledge will be shown in the table below:

**Table 4.1 List of how each interviewee gets knowledge from the industry**

Interviewee	Observation	Discussion	Note
Front Line Manager	Yes	Yes	No
Financial and Administrator	Yes	Yes	Yes
Truck Driver	Yes	No	Yes
Marketing Manager	Yes	Yes	Yes

From the table above, it is obvious that the front line manager would rarely get the knowledge by reading a note or report. The reason is that his working style and responsibility is not supported with written communication. Also, he has no desk for working. He usually walks around in the company to observe the labor working.



**Figure 4.1 Spiral evolution of knowledge conversion and self-transcending process (Nonaka & Konno, The Concept of “Ba” Building a Foundation for Knowledge Creation, 1998)**

Therefore, the way that he can get knowledge will be when he talks with the boss, supplier, or other people in the company. Mostly, he gets knowledge from discussion or meeting. In addition, the knowledge can happen to him while he observes other people working.

For the financial and administrator, she normally get knowledge from observing, talking, and reading. The reason is that she normally sits in the office. So, she is close to the boss, and the boss normally calls her for a personal daily meeting. She would get knowledge and improve every day. Sometimes, when she has to go out to the bank during the day, the boss or colleague may leave her a report or message. Therefore, there are many ways that she gets knowledge.

For the truck driver, he never participates in the meeting of the company. So, the knowledge that he would get would be during the observation and reading the note or report. His work is to drive and deliver glass from the company to the factory. However, the observation creates knowledge a lot for him. For example, he delivered the glass to the factory. Then if the glass at the factory's warehouse is a few, he would know immediately that the price of the glass would be increased soon. Then he could leave the message to the marketing manager when he came back to the company. This is the example of knowledge that he gave.

For the marketing manager, he would get the knowledge from reading. The reason is that he would be away from the company most of the time. However, he still has to attend the meeting when the boss calls for a company meeting in order to discussion. Knowledge also occurs to him through the observation. For example, he gave the example when he went to a supplier's place. He saw the way that the supplier used to handle the glass and load the glass on the truck, which was faster than the way his company did. Therefore, when he came back to the company, he could share to other people during the discussion in the meeting. Moreover, knowledge could occur to him during the time he discussed with other people in the company, and he sometimes got the knowledge from the discussion with people outside the company. For example, he once talked with the purchasing department or the factory and knew that the glass was not enough for the demand for production in that season. From that discussion, he knew that the price of the glass would go up. Therefore, he could plan

to do something in order to get more glass into the stock of the company and sell to the factory at the higher price when the price went up.

There are more findings that came from data analysis overall with interviewee, which will be matched with the conversion of knowledge one by one. The finding will be shown in the paragraph below:

#### **4.1.1 The tacit to tacit communication occurs during team meeting.**

As all interviewees are new for recycling business, it is important for the company to have team meeting in order to make everyone know exactly what they have to do in their daily operation. Also, the company provided the demonstration for some people in each department. Some of the interviewees said that he learned something when he was listening to the discussion during the meeting. For example, when he listened to the topic about the price for each glass is different. At this time, the front line manager got the knowledge that. When he or his workers unloaded the glass from suppliers' truck, he had to be careful. The reason is that the glass will be put in bags. If the suppliers informed the office that the glass in their trucks is clear glass, expensive one, but it is actually brown glass, the company will lose money. The front line manager also learned that his responsibility is very important to the company as the damage to the firm can happen directly in his responsibility. Another example is the tacit to tacit communication while they observed the demonstration. The front line manager told that he never had the experience to use backhoe, a big digging machine, before, so the company who sold the backhoe had to provide the demonstration and taught him how to control it. Then he could control backhoe; however, it took some time to make him get used to with the machine. Moreover, the similar situation occurred in the office. The financial and administrator had to observe how to use digital weight to measure the amount of glass on the truck by using computer. This is the example of socialization stage which is the stage when the tacit to tacit communication exists in the knowledge creation process, the conversion of knowledge.

## **Discussion**

It would take a long time to read the manual and learn how to use machine and program without demonstration. It could be said that it is the culture of the company to teach or inform knowledge by talking or discussion. In this case, the users of knowledge do not have time and have no idea where to start learning the knowledge from the manual. Therefore, learning by talking and observing is the best choice for this company in order to make the knowledge occur in people.

### **4.1.2 The tacit to explicit communication rarely occurs during the team meeting in the company.**

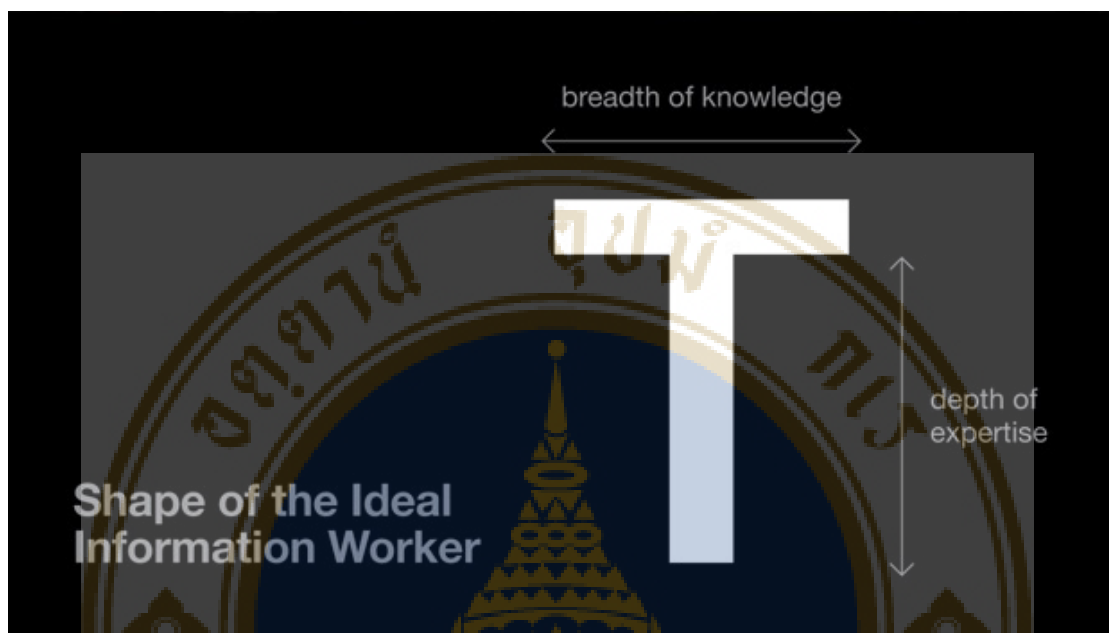
There is no recorder when the boss calls for a meeting. Therefore, the dialog or answer to the question during the meeting will not be kept normally. Because of this reason, it can be assumed that externalization rarely occurs during the meeting. However, one interviewee said that he sometimes had experience in this stage. For example, he had to talk with so many suppliers with different conditions. It is easier for his work to make a note about what he talked to the suppliers, so he could remember the ideas that happen during the time he discussed with suppliers. He also stated that he sometimes make a voice recording when he talked on the phone with his suppliers. This is the example of using technology to help the communication of tacit to explicit because the idea or solution that happened during the time he discussed would not be learned immediately, but it would be read and consider later after the discussion finished. He would share the knowledge that he kept to others when there is a request, or it is required for others to know the same information or knowledge. In that case, he would have to make it as a paper note or a list in order to be easier for other to read and understand because people in other departments do not keep the knowledge in the way he kept.

## **Discussion**

From this information, the reason to support is that the culture of the company does not support each individual to learn new knowledge from this stage. Only some people can utilize this stage to get knowledge that can serve his thought. For example, the case of the marketing manager can support the theory about The T-



shaped Manager (Hansen & Tierney, 2000) that he used the specialized knowledge that he got to commit to individual business unit performance for his department, and he would share knowledge freely across department only he is requires to share.



**Figure 4.2 T-shaped manager diagram**

#### **4.1.3 The explicit to explicit communication usually occurs in the company.**

The explicit to explicit communication can be illustrated as report, e-mail, or presentation. The interviewees, especially the financial and administrator said that she had to make report and read report every day. It is her responsibility to make the inventory list and the daily purchase report in order to present to her boss. When her boss read and check the report, he will know the knowledge about the daily purchasing and the inventory that the company is keeping in the warehouse. Therefore, it can be said that the combination stage normally happen in this company. Another example is the situation when the price of selling glass changes. The marketing manager will inform to the administrator and operation about the change in price. He would write a note or a short report to tell other departments that the price already changed. The other departments will get the knowledge from that note or short report. Moreover, there is an example of explicit to explicit communication that the truck driver gave

during the interview. The driver was responsible for delivering the product to the destination. He would not involve with the process of loading the product on the truck. Therefore, the driver would get a note to inform him and help him to contact with the factory. He said that he would get the note to confirm the product and destination that he had to go every time. This note had a role like a report. When he read this note, he would have the knowledge about the product on the truck. It was the same process when he arrive the destination. He would give the note to the purchasing department at the factory. Then the factory would know what product was on the truck and would signal the workers to unload the glass from the truck.

### **Discussion**

It is the same thing with the previous finding that the knowledge will occur in each stage depending on the culture of the company. Also, the approach of sharing depends on the angle that individual wants to share. In case, it is the sharing within their department, which people can understand the knowledge in the same pattern, the knowledge can be specialized. However, the knowledge will be made to be more general in order to share to people in other departments or different organization because these people would not understand the knowledge in the same level.

#### **4.1.4 The explicit to tacit communication occurs so many times in the company.**

As the price of recycling glass will normally change every month, there will be a message from the factory, buyer, to report the marketing department about the change in price for each product. For example, the marketing manager stated that he knew that he had to check the buying price of competitors and prepare to inform all suppliers to know about the change in price after he received the message about the change in price from the factory. The reason is that he has experience before that the change in price will make suppliers sensitive to change the place to sell their glass. Therefore, it would be better to check the price that the competitors buy before changing our buying price for suppliers and offering them the attractive price. This situation showed that the marketing manager has the communication from explicit to tacit knowledge because he knew the strategy and tactic that he had to do when there

was a price change, which occurred after he got knowledge from reading the message from factory. This can happen because he got the experience like this before.

## **Discussion**

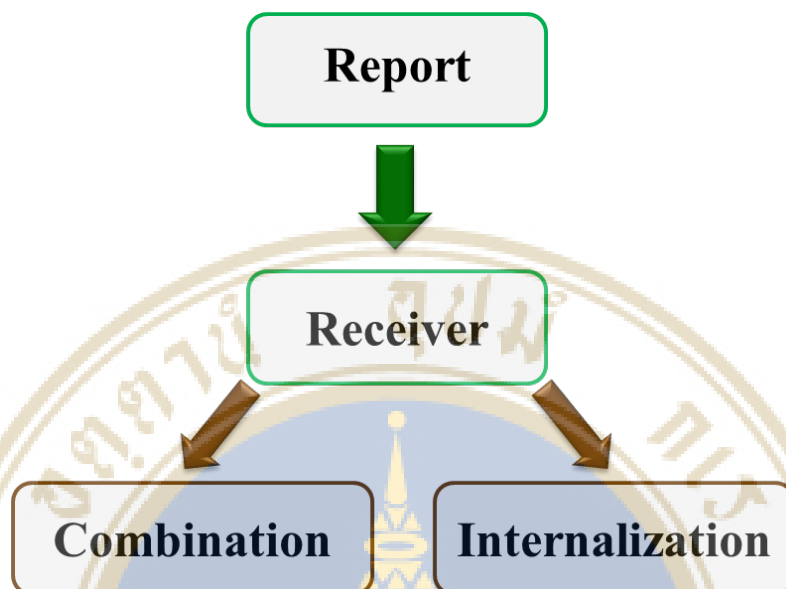
From the analysis, the finding goes along with the conversion of knowledge process in knowledge creation. It is exactly the same as the internalization stage in the conversion of knowledge, which explains about the communication between explicit to tacit knowledge because the marketing manager learn from a report and got the tacit knowledge about the tactic he had to do in order to prevent or solve the problem.

## **4.2 Recommendation**

From the interview and analysis, there is an interesting issue from one of the interviewee. He mentioned about a situation that he got the message that reported him about the change in price. So, he got the knowledge from reading that message reported. Also, he knew what tactic and strategy to do next after the price change. Then he felt like he got the two knowledge creation stages at the same time, combination stage and internalization stage. This thing is a new point that can add to the study of knowledge creation, which is the mixture of combination and internalization.

In the previous study about knowledge creation, the four steps will be tacit to tacit, tacit to explicit, explicit to explicit, and explicit to tacit, which will occur from different action or different cause. However, the analysis of this study proved that there is a new stage that could occur.

Explicit to explicit communication and explicit to tacit communication can happen at the same time from the same cause.



**Figure 4.3** Explicit to explicit and explicit to tacit happen from the same cause

From the analysis and discussion with the interviewee, this issue can happen with a condition that the receiver has to have knowledge in that field. Also, the receiver may have the experience in that field or similar field before. Therefore, this issue can be the starting point to study for anyone who wants to do the further research on the knowledge creation.

## CHAPTER V

### CONCLUSION

All in all, this paper is the research that studies further from the knowledge creation concept, which mainly focuses on recycle business. The reason that aims for recycle business is that it is quite traditional and important issue. Also, the recycle business is expanding rapidly. Therefore, it would help the recycle business to improve their working process by applying knowledge management. Initially, knowledge creation is the point that was used to apply as the main focus from the issues of knowledge management. The company that cooperated for the data and analysis is the firm that trades the recycle glass. The result is that the knowledge creation in this company is matched with the knowledge creation processes, which are tacit to tacit, tacit to explicit, explicit to explicit, and explicit to tacit. Each stage will happen differently depending on the personality of people, culture, and working style. Moreover, there is one more issue that is founded further that can add to the knowledge creation process. The issue is that the two stages in knowledge creation process could happen at the same time from the same cause, which supported by the study and interview from the one who work in the company.

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