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**THE KNOWLEDGE CREATION IN THE INFORMATION LITERACY (IL) SERVICE:
THE CASE STUDY OF THE SANATA DHARMA UNIVERSITY LIBRARY**

A study submitted in partial fulfilment
of the requirements for the degree of
MSc Information Management

at

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by

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Abstract

Background

In the knowledge-based society, knowledge is a valuable asset. It is not just a resource but it is the only meaningful resource in this society, encompassing money and muscle power. Without knowledge, power will soon disappear. Following this line of argument, intellectual and service capabilities are more valuable than hard assets. People or organization who can have an access to the latest knowledge or information in the first place will increase its probability in gaining a competitive advantage. In other words, knowledgeable people or organization will hold the future. As a living organism, therefore, the organization needs to put its concerns on the knowledge creation, without which the innovation and development will not occur. This organization will be left behind and lose the competition because it does not have anything to be offered. It will soon lose its performance, reputation, and spirit. Given the importance of knowledge creation, the first step that can be taken is to understand the current position of knowledge creation in the organization before it can be developed further.

Aims

The aim of the research is to find out the current state of the knowledge creation in Information Literacy (IL) service in the Sanata Dharma University Library.

Methods

The authors use the qualitative deductive analysis approach in this research to determine how the qualitative data support the existing theories. The research design in this research is based on the case study in which a full understanding of the current state knowledge creation in the information literacy service of the Sanata Dharma

University Library can be revealed. The author conducts semi-structured interviews for data collection. All of the six team members of information literacy service are involved in this interview. Then, the interview results are analysed by using the thematic analysis strategy.

Results

The results show that there is a knowledge creation in the information literacy service of Sanata Dharma University Library. Based on the two Nonaka et al. and the Jordan and Jones knowledge creation, the knowledge creation occurs in every model and mode. However, there are some critical points that should be considered as a future development. In the Nonaka et al knowledge creation framework, the articulation of the tacit knowledge and the willingness of certain team member to share should be elevated. Then, in the Jordan and Jones knowledge creation framework, the equality access of the external resources; the finding of best practise in teaching method for certain circumstance through experiential learning approach; the arrangement of casual events for knowledge exchange; the encouragement of mailing list discussion, the codification and appreciation of the valuable ideas; and, the proper codification of tacit knowledge should be developed further.

Conclusion

The author concludes that the knowledge creation in the information literacy service in the Sanata Dharma University Library has already occurred with some critical points to be developed.

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Chapter 1: Introduction

1.1. Introduction and Context

Knowledge in the knowledge-based society is a valuable asset in an organization. Toffler (1990) stated “knowledge is the source of the highest quality power” (p. 2). Even, Takeuchi and Nonaka (1995) emphasized “in an economy where the only certainty is uncertainty, the one sure source of lasting competitive advantage is knowledge” (p. 2). Some organisations, however, do not realize this power and the fact that knowledge can be created and managed for the organization interests. It is indisputable that knowledge creation will lead to the competitive advantages in an organization. For example, by Xerox had created a new business value and a tremendous breakthrough by initiating Eureka project, a community-based knowledge-sharing solution for customer service engineers. Xerox had successfully served their customers and provided service with greater efficiency and lower cost. Moreover, the sharing stories had brought the benefits to the company and the development of the knowledge itself. The tacit knowledge from the senior expert engineers can be shared explicitly and codified. Hence, the knowledge in the company become richer and the engineers’ motivation increase because of the incentives that they get. At the end, combined with the help of technology, Xerox achieved their competitive advantages (Biren, 2000).

Then, Edmonson et al (2011) mentioned that Danone managed their knowledge by changing their people’s behaviour in the first place. Since sharing was not a natural thing, the company launched a successful program named Networking Attitude – the

program that conditioned connection and sharing behaviour among the employees. This program had successfully strengthened the personal network and developed the sharing behaviour. People knew who to ask for help and benefited each other experience. Therefore, the decision making could be faster and competitive advantages could be gain definitely. Similar to Xerox, the benefits of networking and sharing behaviour increased the employees' motivation because of the benefits that they got.

On the other hand, National Aeronautics and Space Administration (NASA) insisted on hierarchical lines of communication instead of developing the sharing environment and knowledge creation. This situation created a communication failure and led to Columbia space shuttle catastrophe (Bohmer, Edmondson and Roberto, 2010). Unlike to the cases of Xerox and Danone, this situation has led to the poor and slow decision making as well as demotivated the engineers in the organisation.

Based on the cases of Xerox, Danone, and NASA, knowledge creation in an organization are very crucial and must be taken into account since it can lead the organizations to the glory or disasters.

Considering the fact that knowledge creation is of greater importance in the system of libraries which play central roles in developing knowledge, the research on this issue would be conducted in the Sanata Dharma University Library, the library under the Network Association of Catholic Universities in Indonesia (APTIK). This research is intended to find out the current position of knowledge creation in the Information Literacy (IL) service. Following this, further potential knowledge

creation developments would be analysed to give some new enlightenments to the libraries. As a result, libraries as supporting units can lead the University into sustainable competitive advantages in this knowledge-based society.

1.2. Research Aim

The aim of the research is to find out the current state of the knowledge creation in Information Literacy (IL) service.

1.3. Research Objective

The objectives of this research is to identify how the knowledge creation occurred particularly in the Information Literacy (IL) Services

1.4. The Dissertation Plan

Chapter 1, The Introduction and Context: describe the rationale of the research, and outlines the aim and objective.

Chapter 2, The Literature Review: defines and describes data, information, and knowledge; explicit and tacit knowledge; The Nonaka et al knowledge creation framework; The Jordan and Jones knowledge creation framework; and, analyse the framework of the knowledge creation of the Nonaka et al and Jordan and Jones.

Chapter 3, The Research Methodology: describe and justify the research approach, research design, research methods, purposive sampling, data analysis method, and ethical aspects.

Chapter 4: The Finding: present the finding results from interview.

Chapter 5: Discussion: discuss the finding results and how they answer the objective.

Chapter 6: Conclusion: describe the identification of the knowledge creation particularly occurred in the Information Literacy (IL) services; the Recommendation

of the Future Potential Developments of Knowledge Creation; and, the limitation of the study and the future research.

Chapter2: Literature Review

2.1. Data, Information, and Knowledge

The understanding of knowledge definition is very important because not every fact that is written or spoken can be categorised as knowledge. Knowledge consists of data and information. But, data and information itself cannot be categorized as knowledge without any further process. Data can be defined as facts that do not have any meaning. Cordata (2011) defined data as “facts, such as names or numbers” and it is “a raw materials of modern work” (p. 2). Similarly, Davenport and Prusak (2000) defined data as “a set of discrete, objective facts about events. In an organizational context, data is most usefully described as structured records of transactions” (p. 2).

Then, the data combination used to mention something that the data alone cannot say is named information (Cordata, 2011, p. 2). According to Davenport and Prusak (2000), information is a message that has a sender and a receiver, a shape and a meaning, and organized to some purpose. They also said that information has a meaning because it is already data in the context. On the contrary, Nonaka et al (2005) argued that information does not have any meaning until it is put in the context and then becomes knowledge. They said “Information becomes knowledge when it is interpreted by individuals and given a context anchored in the belief and commitments of individuals (Nonaka et al, 2005, p. 25). Knowledge is relational and not the same with truth because truth depends on the eye of the beholder (Little and

Ray, 2005). In addition, Cordata (2011) said “knowledge is more complicated than data because it combines data, information and experiences from logically connected groups of facts (such as budget data from a department) with things that have no direct or obvious connection (such as previous jobs and experiences)” (p.4). In other words, knowledge is not easy to define because it involves experiences, belief systems, relations, judgements, and the unpredictable human itself.

2.2. Explicit and Tacit Knowledge

The knowledge can be differentiated into explicit and tacit knowledge. Explicit knowledge is the knowledge that is easily captured, documented, codified, and saved. It can be formalized, systemized and shared. Nonaka et al (1995) described as the following:

the explicit knowledge can be expressed in words and numbers, and easily communicated and shared in the form of hard data, scientific formulae, codified procedures, or universal principles. Thus, knowledge is viewed synonymously with the computer code, a chemical formula, or a set of general rules. (p. 8)

On the contrary, the tacit knowledge is the knowledge that is not easily to be captured, documented, codified, and saved. It is implicit, not easily articulated and visible because it depends on the individual perceptions and experiences. Nonaka et al (1995) described tacit knowledge as the following:

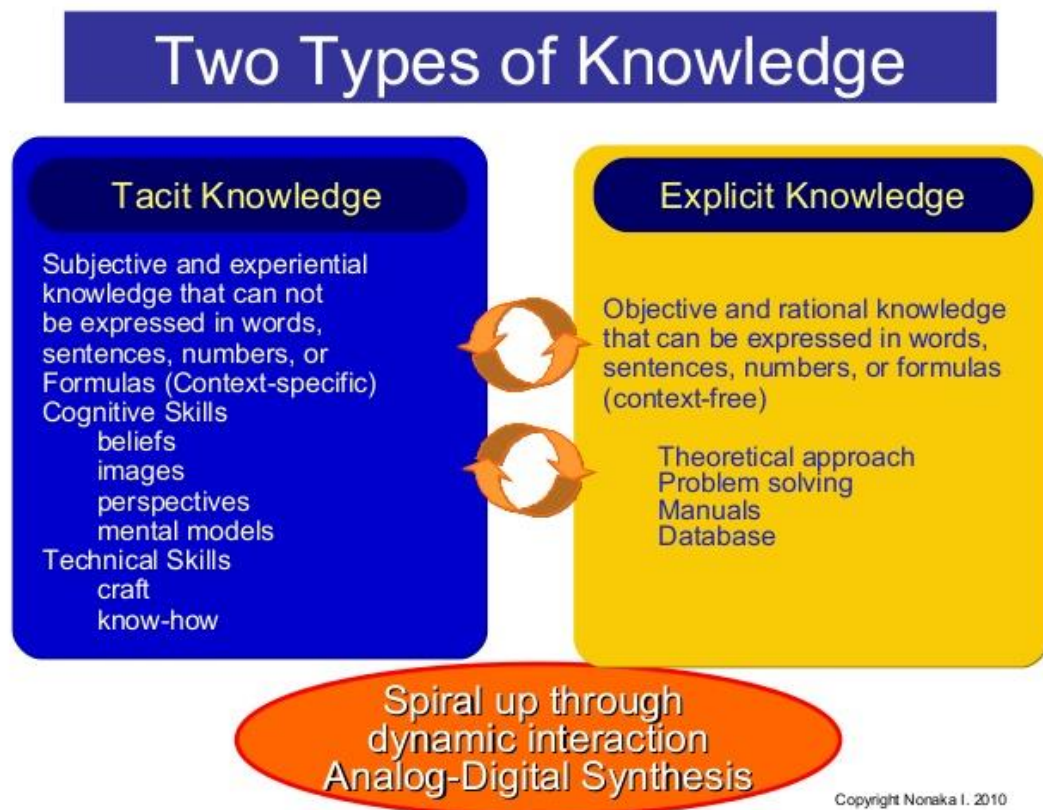
Highly personal and hard to formulize, making it difficult to communicate or to share with others. Subjective insights, intuitions, and hunches fall into this category of knowledge. Furthermore, tacit knowledge is deeply rooted in an individual's action and experiences, as well as in the ideals, values, or emotion he or she embraces. (p. 8)

The tacit knowledge can be categorized into technical dimension and the cognitive dimension. The technical dimension of tacit knowledge is related to how an individual articulates his or her scientific or technical expertise or “know-how”. On the other hand, the cognitive dimension related to the individuals' schemata, mental model, beliefs, and perception (Nonaka et al, 1995, p. 9). The technical dimension is gained from the individuals who do the works for a certain time until they are able to feel and know exactly how they do the work excellently. Some examples of technical dimension are bakers, athletes, musical instrument makers, artists, and dentists. Individuals need to learn the knowledge by doing it and interacting with the experts directly. On the contrary, the cognitive dimension comes from the individuals' observations, personal experiences and perceptions. Therefore, it involves the individuals' subjectivity.

Besides the differences, the explicit knowledge is easily to be documented, codified, transferred, stored or shared in the database. Meanwhile, the tacit knowledge must be converted into explicit knowledge in order to be communicated and shared in the organization. These tacit and explicit knowledge are mutually complement, interact with, and interchange into each other in the organization (Nonaka et al, 1995, p. 9). Figure 1 shows the differences between tacit and explicit knowledge briefly.

Figure 1: Tacit Knowledge and Explicit Knowledge

<http://www.slideshare.net/hiranabe/people-as-the-conveyer-of-knowledge>



2.3. The Nonaka et al Knowledge creation framework: Socialization, Externalization, Combination, and Internalization

Even though organisation is a place where the knowledge gathers, it does not mean that knowledge creation does not occur. Nonaka et al (2005) stated, “organisation is not merely an information processing machine, but an entity that creates knowledge through action and interaction.” Therefore, organisation is not a place of knowledge stock, but it is a place in which knowledge is produced continuously. Nonaka et al (2005) defined knowledge creation as “a continuous, self-transcending process through which one transcends the boundary of the old self into a new self by

acquiring a new context, a new of the world, and the new knowledge. It is a journey ‘from being to becoming’” (p. 25).

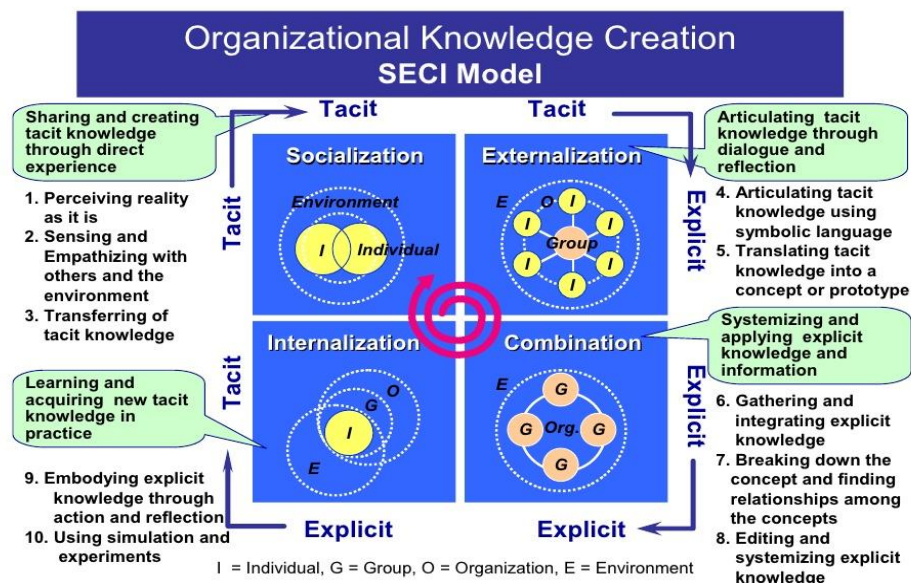
Besides defining the knowledge creation, they also proposed the socialization, externalization, combination, internalization (SECI) model where the knowledge creation is occurred through conversion between tacit and explicit knowledge (Nonaka et al, 2005, p.25). Nonaka et al (1995) defined the *socialization* model as “a process of sharing experiences and thereby creating tacit knowledge such as shared mental models and technical skills” (p.62). In this model, the tacit knowledge is gain from the observation, imitation, and practice. Learning by doing is the proper way of getting knowledge in the socialization model. The reason is that the mental models and technical skills can be best achieved only by experiences. Next, the *externalization* model is defined by Nonaka et al (1995) as “the process of articulating the tacit knowledge into explicit concepts” (p. 64). In this model, the metaphors and/or analogies are usually used to help individuals express or describe their tacit knowledge into explicit knowledge. Nonaka et al (1995) stated “using an attractive metaphor and/or analogy is highly effective in fostering direct commitment to the creative process (p.65). Then, the *combination* model is “a process of systemizing concepts into a knowledge system” (p. 67). This model combines different explicit knowledge from different sources in order to produce new explicit knowledge. The combined explicit knowledge might come from different media, such as documents, meetings, telephone conversations, or computerized communication networks. The act of sorting, adding, combining, and categorizing explicit knowledge in this model will lead to the new knowledge creation (Nonaka et al, 1995, p. 67). The last model proposed by Nonaka et al (1995) is the

internalization model. The *internalization* model is defined as “a process of embodying explicit knowledge into tacit knowledge” (p. 69). In this model, the individuals perceive the explicit knowledge, reflect, and internalize it into their tacit knowledge. Therefore, the individuals’ knowledge is enriched through this model. When the enriched individuals’ knowledge is shared, the new spiral of knowledge creation begun. Nonaka et al (1995) said, “when experience through socialization, externalization, and combination are internalized into individuals’ tacit knowledge bases in the form of shared mental models or technical know-how, they become valuable assets” (p. 69). It means that the individuals can learn from other people’s experiences from documents, manuals, or stories without the need to re-experience it. Nonaka et al (1995) argued, “When such a mental model is shared by most members of the organization, tacit knowledge becomes part of the organizational culture (p. 70). In addition, the outputs of the *Socialization* and *internalization* models are new tacit knowledge while the outputs of *externalization* and *combination* models are explicit knowledge (Nonaka et al, 1995, p.27-28). Figure 2 shows how the knowledge creation occurs in the organization based on Nonaka et al framework.

Figure 2: Organizational Knowledge Creation: SECI Model

[http://www.slideshare.net/hiranabe/agilejapan2010-keynote-by-ikujiro-nonaka-](http://www.slideshare.net/hiranabe/agilejapan2010-keynote-by-ikujiro-nonaka-phrnetic-leadership)

[phrnetic-leadership](http://www.slideshare.net/hiranabe/agilejapan2010-keynote-by-ikujiro-nonaka-phrnetic-leadership)



2.4. The Jordan and Jones knowledge creation framework

Jordan and Jones (1997) concerned about how intellectual capital in an organisation is managed to create and sustain a competitive advantage. Therefore, they proposed a framework that consists of five superordinates categories or modes. The five superordinates categories or modes are described as follow:

Knowledge Acquisition

The knowledge acquisition mode consists of *focus* and *search* dimensions. *Focus* dimension concerns about the sources of the knowledge. The sources of the knowledge are differentiated into internal or external. When the employees attempt to find knowledge from their co-workers, company data-bases and internal documents, they focus on internal sources in the company. On the other hand, when the employees seek knowledge from external environment, they focus on external sources. Some examples of external sources are suppliers or other organizations in which the company has collaborative relationships. Although both of the dimensions can be applied, the company should emphasize on one dimension only.

Then, the *search* dimension concerns about the intention in requiring the knowledge. The *search* dimension looks for whether the employees seek the knowledge because of the problem they have or collect the information randomly just in case they need it in the future. The first dimension where the employees deliberately find the knowledge to solve the problem is called the *focused search*. On the other hand, the second dimension where the employees collect the knowledge randomly for the future needs is called the *opportunistic search*.

Problem Solving

The problem-solving mode consists of four dimensions. They are ‘*location*’, ‘*procedures*’, ‘*activity*’, and ‘*scope*’. First, the dimension of *location* shows whether the problem is solved by individual experts or collaboratively by groups. Usually, the company has problems that can be solved by the individual experts. The individual experts are specialists that have specific knowledge in their fields and can solve the problem sequentially. On the other hand, there are problems in the company that can be solved collaboratively by groups.

Second, the dimension of *procedures* concerns about the choice of approach in solving the problem. The first approach introduced in this dimension is a trial and error approach or heuristics approach in which the problems are solved by discovering things ourselves and learning from our own experiences. The second approach is solving problem by using standard procedures for routine everyday problem.

Third, the *activity* dimension concerns about whether the problem is solved mainly by experiential learning or by cerebral approach. The experiential learning activity involves a ‘hands-on’ way or practical experiences. On the contrary, the cerebral approach involves intellectual activity more than emotions or instincts. For example, the employees use the provided computer-aided design packages or computational programmes in this cerebral approach.

Fourth, the *scope* dimension focuses on whether the radical or incremental way is used to solve the problem. The choice of radical or incremental ways is related to the notion of single-loop and double-loop learning. The single-loop learning looks for problem-solving by following the rules; but, the double-loop learning looks for problem-solving by changing the rules. Argyris and Schön (1978) described the notion of single-loop learning and double loop learning as the following:

When the error detected and corrected permits the organization to carry on its present policies or achieve its presents objectives, then that error-and-correction process is *single-loop* learning. Single-loop learning is like a thermostat that learns when it is too hot or too cold and turns the heat on or off. The thermostat can perform this task because it can receive information (the temperature of the room) and take corrective action. *Double-loop* learning occurs when error is detected and corrected in ways that involve the modification of an organization’s underlying norms, policies and objectives (p. 2-3).

Based on the description above, the radical way is related to double-loop learning that involve the change of company's rules. On the contrary, the incremental way is related to single-loop learning where the problem is solved by the existing rules.

Dissemination

The dissemination mode is related to the way of knowledge sharing. This mode consists of two dimensions: '*process*' and '*breadth*'. The *process* dimension concerns whether the knowledge is shared formally or informally. The formal knowledge sharing is done through meetings, seminars, or computerized database; meanwhile, the informal knowledge sharing is done through informal meeting or discussion over a cup of coffee.

The *breadth* dimension concerns whether the knowledge is shared widely or narrowly. The knowledge is widely shared if it is shared to a wide range of employees. On the contrary, the knowledge is narrowly shared if it is shared only to the small number of relevant employees.

Ownership

The *ownership* mode of knowledge is differentiated into two aspects: the emotional ownership and resource ownership. These ownerships are also labelled as the '*identity*' and '*resource*' dimensions of ownership. The *identity* dimension is closely related to the embedded knowledge in the individuals. These individuals believe that their knowledges are important, highly personal and have been part of themselves. The willingness to share the knowledge from these individuals depends on their perceptions. The individuals might share their knowledges if they believe that their

values in the company might be increased because of their activity. For some individuals, the knowledge does not relate to their personal identities but relates it to the team or the organization as a whole.

Then, the *resource* dimension is related to the knowledge dispersion among individuals in the company. The company might have individual experts or specialists who work with a single domain of knowledge or generalists who work with overlapping domains of knowledge. The work of individual experts is not easily substituted while the work of generalists is substitutable.

Memory

The memory mode consists of one dimension: '*representation*'. This dimension refers to whether the knowledge is mainly stored explicitly or tacitly. The explicit knowledge is usually codified in the form of databases, diagrams, or documents while the tacit knowledge is saved in the individuals' mind. Some tacit knowledges cannot be converted, codified into explicit knowledges because they take too complicated, too long or impossible to put them into words. In this case, the tacit knowledges are articulated in principles. The other way to codify and save the tacit knowledge is making a 'learned lesson databases'.

2.5. The analytical framework of the knowledge creation of Nonaka et al and Jordan and Jones

Table 1: The analytical framework of the knowledge creation of Nonaka et al and Jordan and Jones

Jordan and Jones knowledge creation framework			Nonaka et al Knowledge creation framework: Socialization, Externalization, Combination, and Internalization (SECI) creation model
Mode	Dimension	Description	Model
Knowledge Acquisition	Focus	<i>Internal</i>	<i>Socialization</i> <i>Externalization</i> <i>Combination</i> <i>Internalization</i>
		<i>External</i>	<i>Socialization</i> <i>Externalization</i> <i>Combination</i> <i>Internalization</i>
	Search	<i>Focused search</i>	<i>Socialization</i> <i>Externalization</i> <i>Combination</i> <i>Internalization</i>

		<i>Opportunistic</i>	<i>Socialization</i> <i>Externalization</i> <i>Combination</i> <i>Internalization</i>
Problem Solving	Location	<i>Individual experts</i>	<i>Socialization</i> <i>Externalization</i> <i>Combination</i> <i>Internalization</i>
		<i>Generalists</i>	<i>Socialization</i> <i>Externalization</i> <i>Combination</i> <i>Internalization</i>
	Procedures	<i>Trial and error or heuristics approach</i>	<i>Internalization</i> <i>Externalization</i>
		<i>Standard procedures approach</i>	<i>Externalization</i>
	Activity	<i>Experiential learning approach</i>	<i>Socialization</i>
		<i>Cerebral approach</i>	<i>Externalization</i> <i>Combination</i>
	Scope	<i>Radical way</i>	<i>Socialization</i> <i>Externalization</i> <i>Combination</i>

			<i>Internalization</i>
		<i>Incremental way</i>	<i>Externalization</i>
Dissemination	Process	<i>Formal knowledge</i>	<i>Socialization</i>
		<i>Informal</i>	<i>Socialization</i>
	Breadth	<i>widely shared</i>	<i>Socialization</i>
		<i>narrowly shared</i>	<i>Socialization</i>
Ownership	Identity		<i>Socialization</i>
	Resource		<i>Socialization</i>
Memory	Representation	Explicit knowledge	<i>Externalization</i>
		Tacit knowledge	<i>Socialization</i>
			<i>Externalization</i>

As shown in the Table 1, the Nonaka et al knowledge creation framework focused on how the tacit knowledge in socialization is articulated into the explicit knowledge. This explicit knowledge is later combined to create a new knowledge. Then, the knowledge from socialization, externalization, and combination are internalized by the individual to enrich his or her ‘know-how’ or experiences in doing his or her work. This framework is known as SECI model.

On the other hand, the Jordan and Jones knowledge creation framework focused mainly on the source of the knowledge, how to get, codify and use it to solve the current or future problem or challenge. The gained knowledge in this framework can be tacit or explicit knowledge. This framework does not focus on the sequence of knowledge creation as Nonaka et al do.

The Jordan and Jones knowledge creation consists of five modes: knowledge acquisition, problem solving, dissemination, ownership, and memory. First, the knowledge acquisition consists of two dimension: *focus* and *search* dimensions. The focus dimension concerns about getting knowledge internally or externally and the socialization, externalization, combination, and internalization can be occurred during the process. The search dimension focuses on *focused search* and *opportunistic search* where the knowledge is gained intentionally or unintentionally. During the process of this dimension, the socialization, externalization, combination, and internalization model can be occurred.

Second, the problem solving mode consists of *location*, *procedures*, *activity*, and *scope* dimensions. The location dimension discusses whether the problem is solved by the *individual experts* or *collaboratively by groups*. Either the problem is solved by the individual experts or collaboratively by groups, the socialization, externalization, combination, and internalization model can be occurred.

Next, the procedures dimension consists of *trial and error or heuristics approach* and *standard procedures approach*. The trial and error approach is about discovering and learning thing from the individual's experiences. This approach focuses on internalization model in which the individual knowledge or experiences from socialization, externalization, and combination are internalized into his or her mind and enrich the his or her experiences.

On the other hand, the *standard procedures approach* focuses on solving the everyday problem by using the approved standard procedure. This dimension

involves the externalization process where the company standard procedure is written in the documents.

Then, the activity dimension are the *experiential learning approach* or *cerebral approach*. The experiential learning approach involves a ‘hands-on’ way or practical experiences in problem solving. This dimension involves the socialization model only. The reason is that ‘hands-on’ way or practical experiences involve the individual tacit knowledge especially the technical skills in which difficult to be articulated into explicit knowledge.

Contrastingly, the cerebral approach dimension emphasizes on the intellectual activity more than emotional and instinct in solving problem. This means that the externalization, combination, and internalization model is used dominantly in solving the problem than the socialization model that involves the tacit knowledge, such as mental model and technical skill.

Last, the scope dimension that discusses about the way in solving problem consist of two dimensions: *the radical way* and *the incremental way*. The radical way, in which the underlying norms, policies, and objectives are changed to solve the problem, involve the socialization, externalization, combination, and internalization model. Before changing the underlying norms, policies, and objectives, the company should have the meetings where the people from the same concern gather and share their opinion about the case. In this part, the socialization model is occurred.

Then, the result of the brainstorming and sharing in the socialization model is articulated into explicit knowledge in the form of documents that explain the new underlying norms, policies, and objectives. In this case, the externalization model is occurred. The combination model also occurs when the documents from other resources are sorted, added, combined, and categorized to help the production of the new underlying norms, policies, and objectives. Last, when the socialization, externalization, and combination model are internalized by the individual, the internalization model is occurred and the new knowledge creation is produced by the individuals and increase their ‘know-how’ skills in producing the new underlying norms, policies, and objectives.

On the contrary, the incremental way, in which the problem is solved based on the existing rules, involve the externalization model. The company only need to access and refer the problem with the existing norms, policies, and objectives.

Third, the dissemination mode consists of *process* and *breadth* dimensions. The process dimension, concerning the sharing of knowledge formally or informally, involve the socialization and the externalization model. The reasons are that the knowledge sharing mainly involves the tacit knowledge and can also be articulated through the documents. Similarly, the breadth dimension, concerning the sharing of knowledge widely or narrowly, also involve the socialization and the externalization model.

Forth, the ownership mode is differentiated into *emotional ownership (identity)* and *resource ownership*. The emotional (identity) ownership, closely related to the

individual embedded knowledge, involves the socialization model. The individual embedded knowledge is closely related to the tacit knowledge. The knowledge sharing in this dimension depends on the individual willingness. Similarly, the resource ownership, related to the knowledge dispersion among individuals in the company, also involve the socialization model. Knowledge dispersion by individual experts (specialists) or generalists need sharing activities between individual or groups.

Fifth, the memory mode, only having *representation* as its dimension, relates to the explicit or tacit knowledge storage. This dimension involves the externalization and socialization model. When the tacit knowledge is articulated into explicit knowledge in the form of databases, diagrams, or documents, the externalization mode is occurred. On the other hand, when the tacit knowledge saves in the individual' mind and is difficult to be articulated, it needs to be shared. The tacit knowledge might take too complicated, too long or impossible to put them into words because it involves the mental model and technical skills. Therefore, the tacit knowledge is articulated in principles or in a 'learned lesson databases'.

2.6. Summary and implications for this research

These two knowledge creation frameworks have different perspectives in the way of creating the knowledge. As previously mention, the Nonaka et al framework offers the spiral of knowledge creation while the Jordan and Jones framework focus on getting, codifying, and using the knowledge. These two different knowledge creation framework will be used as guidelines to design the interview questions so that all the interview questions cover these two frameworks. Therefore, the comprehensive data

can be collected from the two sides of the framework to answer the objective of the research.

Chapter 3: Methodology

3.1. Research approach

The qualitative deductive analysis approach will be used in this research. According to Patton (2015), the qualitative deductive analysis is “determining the extent to which qualitative data in a particular study support the existing general conceptualizations, explanations, results, and/theories”. (p. 541)

In alignment with the nature of this approach, the researcher will use the qualitative deductive analysis approach to find out how the theories are implemented in the real situation; especially in the particular places and services.

3.2. Research design

The research design in this research is based on the case study. According to Gorman and Clayton (2005), a case study can be defined as follows:

An in-depth investigation of a discrete entity (which may be a single setting, subject, collection or event) on the assumption that it is possible to derive knowledge of the wider phenomenon from intensive investigation of a specific instance or case. (p. 47)

Based on the definition above, this case study is chosen to develop a full understanding on the knowledge creation phenomenon in the Sanata Dharma University library. Therefore, this case study can develop the wholeness and the unity of the case. In addition, the choice of case study also appropriate and in line with the purpose of the research.

The purpose of this case study is to find out the current implementation of knowledge creation theories in the Information Literacy (IL) services in the Sanata Dharma University library. Then, the findings will be used to answer the research aims and objectives.

3.3. Research methods – qualitative, semi-structured interviews for data collection

The qualitative method is best to be used in this research. The reasons are that this method is contextual and descriptive. Contextual means that the researcher can relate the information with its context. On the other hand, descriptive means that the researcher can relate the information with the occurred event in the specified time and place. Glazier and Powell (1992) added, “the strength of qualitative data is its rich description.” (p.6) In addition, the researcher can understand the process from the beginning to the end and get the perspective of the participants towards the event. Gorman and Clayton (2005) stated, “The ultimate goal of qualitative research is to understand those being studied from their perspective, from their point of view. Then, they defined qualitative research as the following:

a process of enquiry that draws data from the context in which events occur, in an attempt to describe these occurrences, as a means of determining the process in which events are embedded and the perspectives of those participating in the events, using induction to derive possible explanations based on observed phenomena (p.3).

By using the qualitative method, the research will be conducted through in-depth interview to get the comprehensive data of the IL services current state. Through this in-depth interview, the perceptions and the sophisticated immediate results can also be gained. The type of interview used for this research is the semi-structured interview.

The reason of choosing this type of interview is that the interview type is commonly used in the small-scale social research and flexible. This interview allows interviewer to cover the potential questions, the possible follow-up questions and the ‘probes’ that can lead to the new ideas and reveal other valuable information. The interview can be developed until the in-depth data collection or the sufficient information is gained. This idea is in-line with the idea of semi-interview described by Mason (2002) as follows:

The idea that interviewees may be ‘answering’ questions other than those we are asking them, and making sense of the social world in ways we had not thought of, lies behind many qualitative interview strategies. The logic that we should be receptive to what interviewees say, and to their ways of

understanding, underpins much of the ‘qualitative’ critique of structured survey interview methods. (p. 231)

To get the in-depth data, the interview will be conducted individually to avoid dominating personality and peer pressure to agree with certain perspectives. The long-distance interview will be scheduled based on the participant time via telephone, recorded in the recorder device, and saved in the personal laptop. The interview participants of is the head of the library and the team members of the IL services. Before doing the long-distance interview, the participants will be sent an informed consent form through e-mail. Along with the e-mail, the participants are also welcome to raise any questions related to the informed consent. When all the questions are answered, the participants will be invited to sign the informed consent form and the interview session can be commenced. The interview time will be conducted not more than 45 minutes to get the qualified data. Only several questions will be delivered each time to make the participants focus on answering the questions in detail. After all, the interviewer will thank for the participant time.

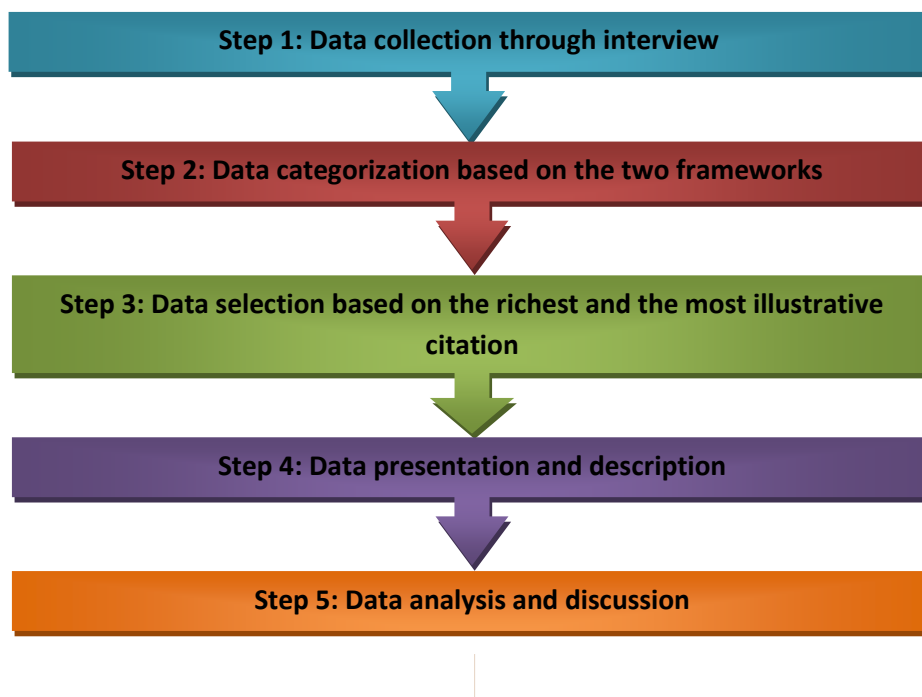
3.4. Purposive sampling

The purposive sampling is chosen by the researcher to choose the population representative that is relevant to the research project (Gorman and Clayton, 2005. P. 128). In this research, the population will be taken from the Sanata Dharma University library. The Sanata Dharma University library is the members of the Network Association of Catholic Universities in Indonesia (APTIK) and located in the city of Yogyakarta. The six members of IL service team will be chosen as the interviewees. The library head and the two senior staff are included in this team. The

library head is chosen because he knows the overall process. He involves in the IL service and his staff report the IL activities to him. Then, the two senior staff are chosen because they have experiences and be able to comment on a wider range of relevant issues. This information from the library head and the two senior staff will enhance the credibility of the data because the information can be confirmed from each other. Also, the reasons of choosing this purposive sampling in the IL services are because of the possibility and the practicality in doing the research in the short time; the steady of IL services; the rich knowledge and experiences of IL services that can be researched in in-depth analysis. Then, the research results will be used for the recommendation for the further developments.

3.5. Data analysis methods

The interview results will be analysed by using the thematic analysis strategy. Patton (2015) explained that the thematic analysis as categorizing or put the descriptive finding in the topical form. (p. 541). With this strategy, the data will be reviewed and sorted into the two knowledge creation frameworks. Then, the richest and the most illustrative citation will be chosen to represent the result. Next, the data are presented and described. Finally, the data will be analysed and discussed. The analysis results will show the current state of knowledge creation in the information literacy service and will be used as recommendation for further potential developments of knowledge creation. Figure 3 below presents the brief steps of the data analysis.

Figure 3: The Data Analysis Methods

3.6. Ethical aspects

This research is a low risk category because it involves human participation on non-sensitive topic and vulnerable participants. The participants will get the informed consents. Then, they read, understand and sign the forms. Pickard (2013) stated:

When research participants give informed consent it means that they understand what they are agreeing to, accept what is being asked of them and are comfortable with the purpose of the research and the intended use of the data they are providing. (p.90)

The confidentiality personal data will not be revealed in the research. However, the discussion between each participant in the team cannot be guaranteed although he/she has been requested not to discuss it. The results of the interview will be recorded by the audio recorder and will be transcribed and translated into the text for analysis. All the digital data will be saved in the researcher's password protected personal laptop and the Information School's research data drive. The data can be

accessed only by the researcher, the supervisor, and the School's Examination Officer and the ICT staff that operates the facility. The data will only be used for my dissertation project and after 3 months of the dissertation submission, the data will be deleted. In addition, the result does not have any relation to the participant performance and does not harm their career, physic/psychology, or even organization. Therefore, the participant will be ensured that the findings will be used as the further development of the IL service in the library.

Chapter 4: Finding

4.1. The Idea behind the Information Literacy Service in the Sanata Dharma

University Library

As an information provider, the library conducted the information literacy service to fulfil the users' needs of qualified information and ensured the access into it. This service, therefore, would equip users with the ability to find, access, and use the provided resources.

'This information literacy service was conducted due to the needs for the access to information users and the ways it is used.' [Interviewee 1, p. 1, no. 1]

'The library has a duty to give the information services to fulfil the needs of the various users in searching, finding, and using the information.' [Interviewee 2, p. 15, no. 10]

4.2. The Vision of Information Literacy Service

The vision of the service was to create skilful users in information literacy.

'The vision is that the library becomes the excellent information service provider for creating information literate user.' [Interviewee 2, p. 15, no. 11]

4.3. The Expected Result of Information Literacy Service

The expected results from the Information Literacy Service could be divided into two perspectives: the expectations for the users and the expectations for the information literacy team. For the users, the information literacy team expected that they considered the library as their main reference for the qualified information seeking and able to apply the information literacy skills.

‘The expected results are that users will consider library as their qualified main information searching. The resources in library have been selected and matched with the academic needs. Also, through this service, users are able to applied the information literacy skills in searching, finding and using the information.’

[Interviewee 1, p. 1, no. 3]

For the information literacy team, this service would enable them to innovate their teaching and materials; better socialize the information literacy program; and, exchange the knowledge between the teachers and the participants.

‘For us, we hope that we can innovate our teaching and materials. Also, we can socialize this program better so that the prospective users realize the existence and the important of this service to their academic needs.’ [Interviewee 1, p. 2, no. 12]

‘We expect that the knowledge exchange occurred between the teacher and the participants. For example, we can get information from the participants about their needs, their inputs for our teaching and materials, and their ability to absorb and

apply the lessons. This knowledge exchange will help us to develop the further materials.’ [Interviewee 2, p. 14, no. 4]

4.4. The Crucial Knowledge in Information Literacy Service

The crucial knowledge in information literacy service was the latest issues in the information literacy, the recognition of the participants needs, the ability of continuous learning, and the understanding of information literacy term.

‘In my opinion, the latest issue in the information literacy materials is the most important.’ [Interviewee 1, p. 3, no. 44]

‘The most crucial one is the knowledge about the participants’ needs. We need to know to what extent the participants understand information literacy, so that we can deliver the suitable teaching materials.’ [Interviewee 2, p. 14, no. 3]

‘The willingness to learn continuously is the most important because it can enrich the teachers’ explanation.’ [Interviewee 3, p. 9, no. 2]

‘In my point of view, the understanding of information literacy term is the most important before we try to articulate and explain it to our participants.’ [Interviewee 5, p. 38, no. 2]

4.5. The Use of Knowledge in the Information Literacy Team Service of Needs

The information literacy team used the knowledge that they got from the various resources to develop the teaching materials and fulfil the users’ needs.

‘Besides inviting experts to teach us, we also search, read, select the available knowledge from various resources for developing teaching materials.’ [Interviewee 1, p. 2, no. 8]

‘We use knowledge to answer our users’ needs. We ask our colleagues or knowledgeable person if there is any difficult question. Also, we collect and design our materials from various sources such as books, the internet, etc. By doing so, I can answer the participants’ questions well beyond the materials given.’ [Interviewee 2, p. 14, no. 6]

4.6. The Knowledge Management in the Information Literacy Service Team

The information literacy team used the codification and personalization to manage their knowledge. They shared and exchanged the knowledge through discussion and brainstorming. Then, the results were codified in the minutes or reports.

‘We discuss the evaluation results and brainstorm the ideas related to the teaching performance and material development. Then, we improve the teaching performance based on the evaluation and search the new materials based on the ideas. We document all the decisions in the report.’ [Interviewee 1, p. 2, no. 10]

4.7. The Challenges in Giving the Information Literacy Service

The challenge in giving the information literacy service was the lack of participants in the information literacy training. This was caused by the lack of awareness in the need of information literacy skill and the unfamiliar terms of information literacy.

‘The challenge is that the users haven’t realized the important of information service literacy skills. This might be caused by unfamiliarised information literacy term. The numbers of participants who attended the training were relatively small compared to the targeted students....’ [Interviewee 1, p. 2, no. 11]

‘The greatest challenge lies in how to socialize the unfamiliar terms information literacy. Another challenge is the common perception that the information literacy program is not important.’ [Interviewee 6, p. 4, no. 43]

Other interviewee mentioned that the mismatch between the participants and the information literacy training schedule was also the major challenge besides making the participants understand and apply what had been taught.

‘Few people are interested in it. This is caused by the participants’ schedules are not match with the training schedule. We still ponder about this and consider to offer the more flexible schedules. Another challenge is how to make the participants understand what have been taught and how to help them apply what they have learnt....’ [Interviewee 2, p. 15, no. 7]

Besides the schedules, the determination for continuous learning was also a challenge for the team member.

‘The greatest challenge is related to the knowledge that must be updated. If we rarely read, we’ll be left behind and cannot deliver the information literacy materials better.’ [Interviewee 5, p. 38, no. 3]

Moreover, the other staff had a challenge in using the technology as a means of her teaching.

‘The Mozilla browser in the computer has different updated version, so the searching results are also different.’ [Interviewee 6, p. 34, no. 3]

Moreover, the other staff had a challenge in using the technology as a mean of her teaching.

‘The Mozilla browser in the computer has different updated version, so the searching results are also different.’ [Interviewee 6, p. 34, no. 3]

4.8. The Improvement or Development for the Information Literacy Team if There is an Opportunity to Change.

The information literacy team hoped that the information literacy service could be collaborated in the research methodology course and the feedback for the participants could be improved.

‘I hope the information literacy service can be integrated into research methodology course because what we taught in the information literacy materials is closely related to the research methodology course.’ [Interviewee 1, p. 2, no. 13]

‘We want to improve the feedbacks in order to get better evaluation from the participants [...] We also want to know more about the material development and teaching methods that fit the diverse needs of the participants.’ [Interviewee 2, p. 8, no. 15]

In addition, one staff concerned about the checking of software update before the class begun.

‘I hope the supporting facility is checked before the class so that I would not face the difficulty with the technical things in the middle of my teaching.’ [Interviewee 4, p. 4, no. 34]

4.9. Knowledge Creation Framework

4.10. The Knowledge Creation Framework by Nonaka et al

4.10.1. Socialization – The Knowledge Sharing Activity

The knowledge sharing activities in the information literacy team occurred mostly when they shared their experiences, perspectives, and ideas related to the training, the teaching feedbacks, and the material development.

‘... We got the insights, ideas, perspectives, experiences, and understanding related to the scope of information literacy from the three experts that we had invited. From those trainings, we divided our team into several groups. Each group was responsible for certain topic of information literacy. The results from each group are discussed in the meeting. The experiences, perspectives, and ideas were shared among the members....’ [Interviewee 1, p. 21, no. 1]

‘Reports were sent to the vice rector and shared in the meeting where the head of the library and the rest of team members present. This is the procedure that must be done by the team member who is assigned to attend information literacy training. They must share their experiences and the hands-out that they got from the training, too.’ [Interviewee 1, p. 8, no. 7]

‘There’re two kinds. At the end of the literacy training, we gave the participants questionnaires, and we then give them opportunities to raise questions and to give inputs orally....’ [Interviewee 5, p. 39, no. 11]

However, it seemed that one staff was reluctant to share publicly in the meeting.

‘... There’s no obligation to do so. However, for teaching experiences and other things, I discussed them with my partners who designed the same topic of information literacy materials....’ [Interviewee 3, p. 30, no. 8]

In addition, the encouragement and appreciation was given to the staff who gave valuable contributions.

‘...The appreciation was given spontaneously. For instance, your opinions are correct, your opinions are good, your resources are qualified, etc.’ [Interviewee 1, p. 11, no. 8]

4.10.2. Externalization - The Articulation of Tacit Knowledge

The documentations of the knowledge in the information literacy team occurred mostly in the individual records and meeting minutes. They mostly recorded the feedbacks for the material development.

‘... Each individual recorded what they thought is important in revising the modules and teachings....’ [Interviewee 6, p. 44, no. 11]

‘...What we recorded in the meeting minutes are the feedbacks related to materials, such as the information searching strategies, information sources evaluation, etc....’
[Interviewee 2, p. 16, no. 1]

The experiences in teaching information literacy, however, had not been articulated.

‘... The seniors shared their experiences for years and provided questions that might be raised during teaching. All were done in a discussion section, and had not yet been recorded in the documents.’ [Interviewee 1, p. 5, no. 11]

‘I just shared my experiences with my colleagues in the information literacy teams.’
[Interviewee 2, p. 16, no. 7]

The reason for not articulating the sharing activities was that they did not realize the importance of doing that.

‘We do not realize that experiences sharing are important to be documented....’
[Interviewee 1, p. 10, no. 1]

The analogy and metaphor were used by the team members to articulate the tacit knowledge so that it could be more easily to be digested by the participants.

‘I usually began with a story. I gave cases as examples so that the participants understand the meaning of information literacy....’ [Interviewee 2, p. 17, no. 11]

The usage of analogy and metaphor, however, were not used by certain team members when they taught because they did not need it.

‘Based on my experiences, I never use analogies or metaphors because they have already understood the materials that I delivered.’ [Interviewee 1, p. 7, no. 3]

4.10.3. Combination – The Process of Creating New Knowledge from Various Resources

The combination activity occurred when the information literacy team collected, combined, edited, and produced the new knowledge in the form of information literacy handbook.

‘... We received various inputs and we managed to produce four information literacy modules a handbook which had been published. The handbook has been used as a guide for information literacy teaching.’ [Interviewee 2, p. 21, no. 1]

‘We searched for and collect the sources of information about information literacy (previous training materials, books on literacy) for our references in making the modules. Experiences and ideas that emerge do help me to design the materials and methods of teaching which are in line with the backgrounds of the participants. They also help me to select which ones is and isn’t important, and which ones is and isn’t necessary.’ [Interviewee 3, p. 30, no. 11]

The ideas, perspectives, experiences, as well as knowledge also influenced the decision in the process of combination.

'If the users gave inputs we consider relevant, we put them in the modules and add them to the materials....' [Interviewee 2, p. 21, no. 5]

'... We use the feedbacks to revise our modules. We recorded them and brought them into the literacy teams [...] The revision was first in the form of hand-outs, but now it's been written in the book.' [Interviewee 5, p. 39, no. 9]

4.10.4. Internalization – The Integration of the Various External Knowledge with the Existing Individual Knowledge

The internalization occurred in the members of information literacy team when they gained input from the *training of trainer, be a teaching assistant, and the feedback*. The training of trainer gave enlightenments to the teacher to develop their information teaching and materials with their own ways.

'The team member experiences in training of trainer can be used as inputs for information literacy materials development and its services. These inputs are selected and adjusted with the context of Sanata Dharma University Library. In other words, the knowledges are combined with the individuals' knowledge and creates a better information literacy service. [Interviewee 1, p. 8, no. 12]

'I learnt how to teach other people, which could enrich my knowledge, how to deliver the materials so that the participants understood, how to speak, and so on. I also learnt that the instructors could develop knowledge they had outside the modules and the power point.' [Interviewee 2, p. 16, no. 6]

‘The inputs and materials we obtained were processed with our own knowledge, which makes us more skilful in designing the materials that are closer to the users’ needs.’ [Interviewee 2, p. 22, no. 9]

4.11. The Knowledge Creation Framework by Jordan and Jones

4.11.1. Knowledge Acquisition

4.11.1.1. Focus

The knowledge acquisitions in the information literacy team were done *externally* and *internally*. The team member searched for information internally through *co-workers, users, and the various resources available in the library*.

‘Internally, we asked our colleagues and users about their opinion, read information literacy books that are available in the library, accessed documents in the database.’
[Interviewee 2, p. 23, no. 1]

The information literacy team member searched for information externally through *experts*.

‘... We invited external experts from outside the university or attended seminars....’
[Interviewee 1, p. 12, no. 1]

The others stated that they searched for information through networking.

‘Externally, information/knowledge is obtained from the database suppliers, literacy trainers, internet, forums, and schools of library study.’ [Interviewee 2, p. 23, no. 1]

On the contrary, one staff did not have access to the external excepts through internet.

‘Externally, I got the knowledge from the internet, and do not have any connection with the suppliers or other outside sources.’ [Interviewee 3, p. 31, no. 16]

4.11.1.2. Search

The knowledge acquisitions in the information literacy team were done through focused search and opportunistic search. The knowledge acquisition was done on purpose when the team had an assignment to develop or improve the teaching material.

‘It is searched on purpose because we need more information about the materials we teach or we develop....’ [Interviewee 1, p. 12, no. 4]

‘I searched the information on purpose when I made the modules. I search for the references about the topics of the modules I made because this is mandatory.’
[Interviewee 3, p. 17, no. 31]

The opportunities search usually occurred when they did the focused search. This happened because the information came across unintentionally.

‘When we were searching for certain topics we suddenly found other useful topics. For example, we searched materials related to citation, yet found materials on bibliography, or when we searched topics on sources of information, we found topics related to the evaluation of information sources.’ [Interviewee 1, p. 12, no. 4]

‘... We sometimes also search for information/knowledge to enrich our available knowledge. We share what we got in the meeting. After we found these materials, I kept them in my personal computer.’ [Interviewee 2, p. 23, no. 2]

4.11.2. Problem Solving

4.11.2.1. Location

The challenge in the team of information literacy were solved collaboratively. They worked together to develop materials and helped or covered each other if they had any difficulties.

‘Solving the problems was done collaboratively. There are members who have more knowledge than other members, but the former often helped the latter. As for the teaching, all members can do it because the materials are already available.’
[Interviewee 1, p. 12, no. 5]

4.11.2.2. Procedure

When it was related to teaching and materials, the trial and error or heuristic approaches were applied.

‘We use a trial and error approach. For example, after literacy materials have been made, we try to use them in classroom to find out whether they’re too easy or too difficult.’ [Interviewee 1, p. 12, no. 6]

‘... Different faculties need different approaches. This also applies to the teaching as well. The teaching approaches to information literacy are also tried out until we find the most suitable method for presenting materials that can be accepted by the users/participants.’ [Interviewee 1, p. 23, no. 4]

On the other hand, the standard procedures were applied when the team were going to plan the information literacy activities or when the information literacy team members were assigned to participate in trainings. Those were routine procedures that must be followed by the team members.

‘We use the standard procedures for routine activities related to information literacy. For example, if want to hold activities for users, we must write a proposal one year earlier. This proposal explains the topics of the training, the budgets needed, the schedules of activities, the publications, and the accountability reports, and so on. And if we take part in the training outside the library, we need to get a permission letter, write an accountability report, and socialize the materials after the training.’ [Interviewee 2, p. 23, no. 5]

4.11.2.3. Activity

The experiential learning approach occurred when the teachers asked the participants to learn by doing.

‘Yes, after being taught, the participants are asked to try out what has been taught using the examples provided. They can also use their own examples which suit to their needs.... [Interviewee 2, p. 24, no. 6]

Also, this experiential learning approach occurred when it was related to the material development.

‘... We conduct an experiment using the materials we use them and then we see the results through feedbacks. We’ll see whether they are suitable or not to the participants’ needs or whether there are any other things to be added in the future.’ [Interviewee 1, p. 13, no. 7]

Then, the cerebral approach occurred when the teacher asked the students to analyse their choice of answers.

‘... The participants should be able to justify why a source of information they find can be said to be credible. They should be able to explain based on those criteria taught in class about the credibility of sources of information.’ [Interviewee 5, p. 40, no. 22]

4.11.2.4. Scope

The radical way is used when the policy, rules, or norms were not suitable with current circumstances. In this case, the policy was changed when there were fewer participants and the demand was changed.

‘We used the radical way when the numbers of training participants were less than we expected. We changed the publication policy. We did not use the information literacy term in our publication.’ [Interviewee 1, p. 13, no. 8]

‘The information literacy training was intended for students only, but then extended to include lecturers due to such a request as getting access to the journals overseas in association with the database suppliers. Right now the participants can choose literacy topics they want, while we determined the topics previously.’ [Interviewee 4, p. 23, no. 36]

The program used to be designed for the internal member of University Sanata Dharma (Students and lecturers). But, the policy was changed since the demand from external library increased. For example, the demand for library staff training from other university libraries. Also, the policy changed when the participants increased. Now, the librarians who does not develop the information literacy materials are allowed to teach. [Interviewee 2, p. 24, no. 9]

On the other hand, the incremental way was used when it was related to the teaching and the material given in the class.

‘We always see the past evaluation results for making changes. For example, based on the feedbacks, we found that the materials given are too difficult. Then we made adjustment to those materials. We also tried to seek the easier ones. For the teachers, we help each other. Individually teachers are expected to change based on the inputs given.’ [Interviewee 5, p. 40, no. 23]

4.11.3. Dissemination

4.11.3.1. Process

The distribution of the knowledge in the team of information literacy occurred in *formal and informal situations.*

‘For the formal one, we shared it in the plenary session where all staffers are present or in a limited meeting for the information literacy teams where information literacy is discussed specifically without being revealed by the other staffers outside the teams. For the informal information, we meet with colleagues and discuss it. Informally then we shared the information which we think is beneficial to the other colleagues outside the teams.’ [Interviewee 5, p. 41, no. 25]

4.11.3.2. Breath

The knowledge was distributed widely and narrowly in the information literacy team. It would be distributed widely if it was general knowledge that must be known by the all library staff and could increase their performances and services. On the other hand, the knowledge would be distributed narrowly if it was relevant only for the information literacy team.

'If it is related to the teaching and material design, the knowledge will be discussed in the team. While, if it is relevant to the all library staff and can increase their performance, the knowledge will be distributed to them.' [Interviewee 2, p. 11, no. 24]

Sometimes, the information literacy issues were raised to gather opinion widely and everybody would know about that issues.

'... Sometimes we also raise questions through the library mailing lists so that not only the literacy team members can respond....' [Interviewee 2, p. 16, no. 2]

4.11.4. Ownership

4.11.4.1. Identity

Identity was related to the knowledge in each team member that they would like to share. They liked to share because they wanted to ensure that they had the right understanding to deliver the materials, enrich the other people's knowledge to give better services, give contribution to the company and add personal value.

'Our motivation of sharing is to ensure that we teach the materials correctly. Therefore, we often ask and share what we know to get feedbacks from others.'
[Interviewee 1, p. 10, no. 5]

‘I expect that the knowledge doesn’t stop short to certain people, but can be made known and developed by the other people. Through the sharing I can get inputs from the other people, so that I can exchange knowledge with them.’ [Interviewee 5, p. 26, no. 41]

‘... As an employee I want to give contributions. I’m glad if my contribution is beneficial for other people. Acknowledgement and appreciation from other people also contribute to my motivation for knowledge sharing. This can be an added value for me and my reputation....’ [Interviewee 2, p. 17, no. 8]

However, the validation on the idea and experiences had not been validated.

‘Ideas and feedbacks are done orally in the meeting and recorded in minutes. However, they haven’t been arranged structurally and validated in a written form.’ [Interviewee 1, p. 27, no. 1]

4.11.4.2. Resources

The knowledge dispersion in the information literacy team tended to be generalist and not specialist. They could substitute each other in teaching. Even though designing materials was more difficult than teaching, the substitution in this field was still possible. This substitution was possible because they shared the materials to each other in the meeting.

‘It takes time to develop the materials with the topics which are not parts of their responsibility in the first place. This also depends on the ability of that person.’

[Interviewee 3, p. 18, no. 31]

In addition, the team members are gathered to discuss the topics offered in the information literacy service. In so doing, everyone in the team knows others’ topics.

‘All the teachers in the team can replace their colleagues, and so too are the materials because we’ve the background knowledge and participated in the training as well.’ [Interviewee 5, p. 18, no. 40]

‘Everyone knows about the topics on information literacy being offered, though they aren’t their fields. So, they can replace one another. Yet, designing the materials is more difficult to do than replacing teachers.’ [Interviewee 6, p. 18, no. 45]

4.11.5. Memory

4.11.6. Representation

The knowledge that was related to information teaching activities and materials were documented and saved in the shared database.

‘Yes, we stored them. Printed feedbacks are scanned in the pdfs. and are saved in shared database that can be accessed by all literacy team members.’ [Interviewee 5, p. 39, no. 12]

‘... The various information literacy materials were stored in the database. The teams can easily access them....’ [Interviewee 2, p. 7, no. 1]

‘... The whole meeting minutes were kept in the folders in the servers so that all library employees can access them. They could also have the meeting results printed if necessary and if needed to be discussed in the meeting. The server database can be accessed by anyone without prior permission’. [Interviewee 1, p. 7, no. 1]

On the other hand, the knowledge that were related to the individual’s experiences were not documented specifically. The sharing of experiences was documented and saved together in the minutes.

‘The experiences were kept individually and hadn’t been written in the form of documents which can be accessed by the other people.’ [Interviewee 1, p. 5, no. 8]

‘Experiences shared in the evaluation meeting were recorded in the minutes. The results were used for determining the next teachers as well as for developing and revising teaching materials.’ [Interviewee 1, p. 5, no. 10]

The knowledge of information literacy was also saved tacitly. When the users needed specific information about information literacy skills, the librarian staff could refer them to the more knowledgeable person orally. The information literacy team had not informed their identity, expertise, contact details in the library website.

‘No. Only their names and their work sections/tasks that are posted. Reference is done orally. For example, if there’re users asking about plagiarism, we refer them to the knowledgeable staff.’ [Interviewee 1, p. 25, no. 14]

This tacit knowledge is codified in the form of best practice and lesson learned in the minutes.

‘We recorded them in the minutes. For example, we took notes the best approach to teaching information evaluation to all participants with different backgrounds such as teachers, library staffers, and students from several faculties.’ [Interviewee 1, p. 26, no. 19]

‘Not all staff can answer the questions on information literacy, so we let those who are more competent in answering them. All are done orally, not yet posted in the web-site.’ [Interviewee 6, p. 45, no. 25]

Chapter 5: Discussion

This chapter presents the answers to the objective in this research: how the knowledge creation occurs particularly in the information literacy services. For this purpose, the two frameworks of knowledge creation from the Nonaka et al and the Jordan and Jones will be used to identify this. Then, the analysis will be developed further by using the new knowledge creation framework that comes from the combination from those two frameworks. Following this, the recommendations for further potential developments of knowledge creation in the information literacy service will be given based on the discussion of the objective.

5.1. The Knowledge Creation in the Sanata Dharma Information Literacy (IL) Services

5.1.1. The Nonaka et al Knowledge Creation Framework

The concept of knowledge creation offered by the Nonaka et al is begun from the model of socialization, externalization, combination, and internalization. After reaching the internalization model, the knowledge creation spiral will start again from the socialization model. This part will discuss how the knowledge creation occurs in the information literacy service based on each model of Nonaka et al knowledge creation framework.

5.1.1.1. Socialization – The Knowledge Sharing Activity

The finding shows that there is a significant knowledge sharing activity in the information literacy team. They mostly share their knowledge in the information

literacy, including their experiences, perspectives, and ideas that are related to the training for trainers, feedbacks, and material development in the meeting. The reluctance of sharing in the meeting, however, still occurs even though the encouragement and appreciation is given. The reason for this sharing reluctance as mentioned by the staff is that there is no obligation for her to share. The staff prefers to share her experiences with her colleague who designs the same topic of information literacy materials. The other reason that can be assumed is that she is comfortable to share with her teammate to avoid any judgement on her experiences in the meeting. Unfortunately, the mental model and technical skills are best achieved only by experience (Nonaka et al, 1995). Therefore, without sharing activity from one of the team members, the team might have lost the valuable knowledge for developing their service. Moreover, the tacit knowledge from that person cannot be articulated to the externalization as the next model of knowledge creation.

5.1.1.2. Externalization - The Articulation of Tacit Knowledge

Related to this model, the finding shows that the tacit knowledge from the sharing in the socialization model is articulated in the form of documents. The strong evidence shows that they articulate their sharing mostly related to the material development in their individual records and meeting minutes. The individuals document what they perceive as important for their modules revisions and teachings because it can influence their performance. The discussion results in the meeting are documented in the meeting minutes. But, what they document in the meeting minutes are mostly the feedbacks related to the information literacy materials. The experiences in information literacy teaching have not been articulated because they do not realize

the advantages of articulating the teaching experiences in the document. On the contrary, experiences from each individual that comes from observation, imitation, and practise is very contextual and might not be gained from any other written sources. It is a new knowledge that is worth doing to be documented. The contribution of these articulated experiences are very important for combination, the next model of knowledge creation after externalization. Documenting the experiences can enrich the part of combination model and make it more contextual.

Moreover, the finding shows that certain team members use an analogy or metaphor to articulate the tacit knowledge in their teaching while other do not use it. The analogy or metaphor is used to help the teacher in the class to articulate the abstract concepts of information literacy (Nonaka et al, 1995). The interviewee reason for not doing this is that they believe the participants have understood what they are saying without the help of analogy or metaphors. The assumption for not using the metaphor depends on the level of material difficulty. Some topics might not need the analogy or metaphor as a bridge to articulate the difficult concept. However, certain members who do not prepare the analogy or metaphor for their lessons, especially the difficult one, will face challenges if they find the participants who are difficult to understand the concept.

5.1.1.3. Combination – The Process of Creating New Knowledge from Various Resources

There is strong evidence that the knowledge creation occurs in the combination model. The team compiles all the explicit resources and produces a new knowledge in the form of information literacy handbook. The experiences from the team

members also contribute to the decision making of the compilation process. This finding is the model that combines different explicit knowledge from different sources in order to produce new explicit knowledge (Nonaka et al, 1995). Therefore, the comprehensive articulation of tacit knowledge is crucial to take into account since it will supply valuable contributions to this model.

5.1.1.4. Internalization – The Integration of the Various External Knowledge with the Existing Individual Knowledge

The finding shows that the internalization process occurs when the team of information literacy obtains knowledge or inputs from the training of trainer, being a teaching assistant, and the feedbacks. These inputs occur through the socialization model when they share them; the externalization model when they document them; and, the combination model when they compile them. All of this knowledge or inputs have influenced the information literacy team members to serve their users better. This finding in-line with literature review that the individuals' knowledge is enriched when they perceive the explicit knowledge, reflect, and internalized them into their tacit knowledge (Nonaka et al, 1995). Therefore, the comprehensiveness of knowledge collection from the socialization model to the combination model will influence the 'know-what' of the team members. Then, this lack of 'know-what' will influence on the 'know-how' of the staff as part of the team valuable assets (Nonaka et al, 1995). For example, when the experiences are not shared and the experiences sharing is not articulated into an explicit form, some parts of them will be forgotten or missed. As a result, this will influence the comprehensiveness of the combination model and the enrichment of the internalization model.

5.2. Conclusion

In general, the knowledge creation model based on Nonaka et al framework has already occurred in the Sanata Dharma University Library, particularly in the information literacy service. The knowledge creation has occurred in the socialization, externalisation, combination, and internalization model. However, the finding shows that in the socialization model, certain staff is still reluctant to share her knowledge which can be a valuable input for the team in the future. Consequently, the creation of tacit knowledge that involves shared mental model and technical skills cannot occur and be articulated into explicit knowledge. Then, the sharing knowledge related to the material development are articulated into explicit knowledge in the externalisation model. But, the experiences have not become the main concern to be articulated into explicit knowledge. As a result, this will influence the knowledge enrichment in the next models, combination and internalization. Then, when the team members share what they get from the internalization model, the new spiral of knowledge creation occurs. The spiral of knowledge creation in the information team has already occurred. They only need to be more concerned with their knowledge sharing and documentation. The team should create conducive sharing environment (Earl, 2001; Binney 2001) and make them part of the organization culture (Nonaka et al, 1995).

5.3. The Jordan and Jones Knowledge Creation Framework

The knowledge creation framework proposed by Jordan and Jones consists of five dimensions: knowledge acquisition, problem solving, dissemination, ownership, and memory. This part will discuss how the knowledge creation occurred in the

information literacy service based on each dimension of Jordan and Jones knowledge creation framework.

5.3.1. Knowledge Acquisition

The knowledge acquisition consists of focus dimension and search dimension. The focus dimension concerns how the knowledge is acquired internally and externally. On the other hand, the search dimension concerns whether the knowledge is acquired on purpose or accidentally (Jordan and Jones, 1997).

5.3.1.1. Focus

The finding shows that there are the knowledge acquisition activities amongst the information literacy team members. These activities show that they actively acquire their knowledge internally and externally. Internally, they attempt to find out the information that they need through co-workers, users, and various resources available in the library. Externally, they gain the knowledge through the invited experts, seminars, and networking. Surprisingly, there is a team member that does not have knowledge access externally, except through internet. This indicates that there is a discrepancy in the knowledge acquisition access amongst the team members. Also, there is no indication whether the one who has access to many external resources always share what they get since there is no obligation to do so. A possible explanation for this discrepancy might be that the position level between the team members is not equal. As a result, there is a knowledge discrepancy amongst the team member.

5.3.1.2. Search

The information literacy team members acquire their knowledge through focused search and opportunistic search. It means that they get the knowledge intentionally or unintentionally. The finding shows the strong result on acquiring knowledge intentionally because they have tasks to be done, such as teaching, material development or revision. They should do this properly because it can influence their performance and reputation. Then, the unintentional knowledge acquisition is mostly done when they search the intended knowledge and suddenly the new information come across. In addition, they also search knowledge in their spare time to enrich their knowledge.

5.3.2. Problem Solving

The problem solving is a mode that attempts to find out how the team members use knowledge to solve their problem consists of four dimension: the location, procedure, activity, and scope (Jordan and Jones, 1997).

5.3.2.1. Location

The location is the mode that is used to find out whether the problem in the team is solved by the individual experts or collaboratively (Jordan and Jones, 1997). In this case, the team attempts to find out the solution collaboratively. It is undeniable that there are more knowledgeable members amongst the team members. But, they use their knowledge to help or assist other team members to solve the problem. By doing so, the other team members can learn from their knowledgeable colleagues and later can do it independently. Another possible explanation about this is that they will share what they have done in the meeting, so they will get justification whether they have solved the problem properly. In other words, even though they get knowledge

from their knowledgeable team members, they will finally have justifications for what they have done to solve the problem from others in the team.

5.3.2.2. Procedure

This mode attempts to show whether the information literacy team members solve their problem through trials and errors approach (heuristic approaches) or standard procedures approach (Jordan and Jones, 1997). The trials and errors approach is used when the team members try to find out the solution based on their experiences or when they figure it out by themselves. The finding shows that these two approaches are used in the team. The finding shows that the team members use the trial and error approach to find out the level of materials difficulty that they deliver in the class. Also, they use this approach to find out the suitable teaching approach for their diverse background of participants.

On the other hand, the standard procedure approach is used when they design a year information literacy activities plans and when they are assigned to participate in the external trainings. This two approaches are strongly used by the team because the trials and errors approach will be discussed and shared in the meeting based on the feedbacks they get. Moreover, the standard procedure are the mandatory formal procedures so the finding on this approach is strong.

5.3.2.3. Activity

This mode suggests the experimental learning approach or the cerebral approach to figure out the problem. The experimental learning approach focuses on practical experiences in solving the problem while the cerebral approach focuses on logic more than feeling (Jordan and Jones, 1997). The finding indicates that the

experimental learning approach is used when they ask the participants to find the answer of the provided examples. Also, the participants are allowed to use their own cases. They need to figure it out based on the materials delivered in the class. In so doing, the participants can learn by doing. This approach is also applied when the team develop the materials. They need to try out whether the materials are contextual enough for the participants needs. They will get feedbacks from the participants on this matter so that they have enlightenments to revise the materials. However, there is no indication of the experimental learning approach on the teaching methods. The finding does not show that they also concern about the certain effective teaching methods when they deliver the materials. The cerebral approach is used when the participants are asked to justify their choice of answers. The participants' feedbacks on materials can also be used as justification for revising the materials. Thereby, the cerebral approach is occurred in the material development. The justification on the use of certain teaching method cannot be found since the certain effective teaching methods when they deliver the materials has not been considered as their main concerns. A possible reason for this is that the team believe that the quality and the credibility of materials are more important than how they deliver them.

5.3.2.4. Scope

This mode shows about how the problems are solved. They can be solved radically or incrementally (Jordan and Jones, 1997). The choice of using the radical or incremental ways depends on the certain situations and the cases. The finding shows that there are significant indications of applying these two ways in solving the problem in the information literacy team. First, the radical ways are used when the policy, rules, or norms are not suitable with the current condition and need

adjustment. For example, when the number of participants are less than the targeted number, the method of publication is changed. The policy is changed so that the participants are allowed to choose the topics of information literacy that interest them and the term of information literacy is no longer used. Also, when the demand of information literacy teaching increases, the policy about only the material developers are allowed to teach is changed. If there are knowledgeable librarians who are able to teach, they are allowed to teach even though they are not involved in the materials development. Also, the information literacy service is used to be provided only for internal members of Sanata Dharma University Library. But, the policy is changed because of the increasing demands for information literacy trainings from the external parties. By changing the policy, they can fulfil the demand of external trainings. Also, they adjust their information literacy service with the rapidly changing situation that can also increase their reputation internally as well as externally. In addition, they will accumulate more valuable knowledge and experiences.

Second, the incremental way is applied when they only need to adjust the way of teaching and the level of materials difficulty. The changes are applied only in the level of the teachers or the material developers without changing the unit's policy, rules, or norms. This incremental way is usually applied based on the feedbacks from the participants. The team can explore and analyse the use of incremental ways before they come to the radical way. Thereby, they do not need to use the radical way if it is not necessary or relevant with the improvements that they need.

5.3.3. Dissemination

This mode concerns the distribution of the knowledge in the team. This mode is divided into two dimensions: process and breath. The process dimension is occurred when the knowledge is distributed formally and informally. On the other hand, the breath dimension concerns whether the knowledge is distributed widely or narrowly (Jordan and Jones, 1997).

5.3.3.1. Process

In the case of the information literacy team, the knowledge is distributed formally and informally. The finding shows that formally the team distribute the knowledge in the meeting and in the shared database. On the other hand, the knowledge is distributed informally besides the meeting, such as in the pantry or during the lunch. The finding does not indicate that they arrange special casual or informal events to share or exchange the knowledge. This event necessary to be held because the tacit knowledge exchange is usually occurred during the discussion around a cup of coffee.

5.3.3.2. Breath

The information literacy team distributes the knowledge widely when the knowledge is relevant to all the staff of the library and can enhance their performance and service quality. Meanwhile, they distribute the knowledge narrowly if it is related to material development or teaching performance discussion. So, the distribution of the knowledge widely or narrowly is depended on the relevancy of the knowledge for the staff. Once the team member raises an issue on information literacy topic but no one replies except the head of the library. It seems that the staff are not used to mailing

list discussion. Overall, these two positive finding in dissemination is supported by the Jordan and Jones (1997) theory about the process and breath dimension.

5.3.4. Ownership

The dimension of ownership in the information literacy team can be differentiated into two aspects: the emotional ownership (identity) and the resources ownership (Jordan and Jones, 1997). The emotional relationship is related to the knowledge embedded in each team member and they need motivation to share and articulate their knowledge. The underlying reason of the sharing motivation is that the embedded knowledge is highly personal and have been part of themselves (Jordan and Jones, 1997). Then, in term of resources ownership, related to the knowledge dispersion among individuals in the company, the information literacy team is more generalist than specialist (individual experts). Even though it is more challenging to substitute the material developers than the teachers, the possibility of replacing them is possible and depends on the individuals' ability.

5.3.4.1. The Emotional Ownership (Identity)

The positive finding in this dimension shows that they are willing to share because they expect other people can be as knowledgeable as them to deliver a good service. Also, they expect that personally they can give valuable contribution to the company and add their personal value. However, the appreciation is given orally but the sharing results has not been systematically arranged, documented, and validated. Also, this appreciation has not been considered seriously. The further action to manage the emotional ownership should be the main concern because it will impact

the knowledge assets of the organization as well as their performances and reputations.

5.3.4.2. Resources

The finding shows that the information literacy team is more generalist than specialist (individualist). This can occur because the members of the team discuss and share the materials and their experiences. As a result, the team members mostly know about the materials and the teaching issues. Even though the substitution of the material developer is not as easy as the teachers, it is still possible to be done because they usually back up each other team member. This collaborative way is occurred both in the material development and in teaching. It is also possible if the new comer teammates with their seniors to observe, imitate, and practice with them in the class. Moreover, the other possible reason that the material developers are possible to be replaces is that they can do independent study by accessing the shared databased and various resources in the library.

5.3.5. Memory

One dimension of the memory is representation. This dimension is related to the codification of the explicit knowledge and the tacit knowledge. The explicit knowledge is codified in the form of databases, diagrams, or documents, whereas, the tacit knowledge is codified in the form of lesson-learned databases (Jordan and Jones, 1997).

5.3.5.1. Representation

Related to this dimension, the finding shows that there is a positive result related to this dimension, especially in the codification of the explicit knowledge. The information literacy team save their meeting discussion in the minutes and put in the database that can be easily accessed by anyone. Also, they put the various materials related to the information literacy in the database. On the contrary, they have not taken the codification of tacit knowledge seriously. They have not codified the tacit knowledge specifically in the form of principles or lessons learned and save it as part of the meeting reports. Their focus is more to the codification of information literacy materials than to the teaching experiences. The underlying reason for this is that they have not realized that the tacit knowledge is also part of the organization asset knowledge. By not doing the tacit knowledge codification properly, the organization can lose their assets when the individuals resign. Then, the probability of reuse the knowledge written in the minutes is small. People are usually reluctant to re-read report results as their reference to find the knowledge. Moreover, without proper codification, the articulated tacit knowledge is easily forgotten.

5.4. Conclusion

Generally, the knowledge creation in the information literacy team has occurred in the five dimension of Jordan and Jones: knowledge acquisition, problem solving, dissemination, ownership, and memory. However, some points need to be taken into account as the main concerns since they can elevate the advantages for the team as well as their service. First, the level of discrepancy in external knowledge access should be minimized. At least, if the team member has not had access to the external parties, he gets the proper knowledge from sharing activity in the meeting. Second,

the experimental learning approach in teaching is worth to be applied. Then, the result can be codified so that anyone can learn from other people experiences in certain situation and participants. Thereby, other team members can save their time in exploring and trying to find out the most suitable approach for the same certain circumstance. Third, the special casual events can be held to encourage the team to share their tacit knowledge. The library consortium can be involved in this event so that the significant results of knowledge sharing and exchanged can be gained. Fourth, the team members of information literacy and other staff can be encouraged more to start discussion in the mailing list. The ideas or any valuable inputs should be appreciated in many ways so that they are motivated to join the discussion. The result of the meeting with the external connection can also be shared in the mailing list so the one that has limited access to external sources can follow the latest updates. Besides, the results of mailing discussion can be codified and become an asset. Fifth, the valuable ideas or contribution can be codified in the specific database that can be validated and at the end the most useful idea can be appreciated with appreciation in front of all staffs, taken into account in the staff promotion, or bonus. Sixth, not only the tacit knowledge should be shared, but also it should be codified properly in the lesson-learned database. The tacit knowledge is valuable assets embedded in the individuals' mind. Sometimes, it need many years for the individuals to get those crystalized valuable assets such as mental model or technical skills. Therefore, the tacit knowledge should be considered as the main concern considering its benefits for leveraging the team as well as organization competitive advantages.

5.5. The New framework of Knowledge Creation based on the Combination of the Nonaka Knowledge Creation Framework and The Jordan and Jones Knowledge Creation Framework

This part will discuss how the knowledge creation occurred in the new framework based on the combination of the Nonaka and The Jordan and Jones Knowledge Creation Frameworks. As mentioned before, the knowledge creation proposed by the Jordan and Jones has five modes and each mode has its own dimension and most of each dimension has its own description. When the two knowledge creation frameworks are combined, it shows that their descriptions contain full or partially SECI models. The discussion on how the SECI models occurred in the five modes of Jordan and Jones knowledge creation framework in the context of information literacy service is explained below.

The first mode of Jordan and Jones knowledge creation is knowledge acquisition. This knowledge acquisition mode consists of focus and search dimensions. The focus dimension explains about getting knowledge internally and externally. In the process of getting knowledge internally and externally as discussed in the previous section, the information literacy team members involve the socialization model for sharing and knowledge exchange in the meeting or casual events. Then, the externalization model is included in this dimension because the team can gain knowledge from the articulation of the tacit knowledge that occurred in the socialization model internally and externally. The same process is also applied in the search dimension. The intentional or unintentional knowledge can be gained by the team members by using the socialization model and the externalization model.

The second mode of Jordan and Jones knowledge creation is problem solving. This mode consists of location, procedures, activity, and scope dimensions and their own descriptions. The location dimension, where the information literacy team members tend to be generalist instead of individual experts, involve the socialization, internalization, combination, and internalization model. The team members share and exchange their knowledge to one another so the discrepancy of knowledge level can be minimalized. They also articulate the sharing in the socialization mode before they also combine all the knowledge that they get and internalize it. From the internalization model, they have a new knowledge to do their works well and share it. In the procedures mode, the trial and error (heuristic approach) involves the internalization model where the team members internalize all the knowledge from the previous models and find out their own solution to face the certain circumstance and specific participants. On the other hand, the standard procedure approach involves externalization model because this approach relates to documents, such as policies, norms, and rules. Therefore, before the team plans and executes the information literacy activities, they will refer them to the standard procedure to ensure that they do it properly. Then, in the activity mode, the socialization model is involved in the experiential learning approach. The reason is that the experiential learning approach is related to learning by doing. In this approach, the tacit knowledge is the most important part and should be shared to other team members. For example, when team members find out the appropriate level of materials difficulty or when they find the teaching suitable for teaching approach, they can share them in the team so that the team can learn from others' experiences without experiencing it. By doing so, the time for finding the solution can be minimalized. In

so doing, the socialization model is the most appropriate model for this approach since the experiences, as the result of this approach, are best leveraged when they are shared. Next, they also need to internalize all the sharing results so that they will create a new valuable knowledge to share. Therefore, the internalization model is involved in this dimension. Without this model there is no new valuable knowledge to be shared. On the other hand, the cerebral approach involves the internalization model because the team needs to justify their decision in teaching and material development. This also applies when the participants justify their answers. They need to internalize all the sources and process them. By doing so, they can show the logic thinking underlying their reasoning. In the scope mode that discusses radical an incremental way, the full model of SECI is used. The reason is that before the team members decide the way that they will use, they need to share and brainstorm their ideas, perspectives, and experiences on the issue. This part is associated with the socialization model. Then, they need to articulate them in the documents so that no important detail is missed or forgotten. This part is associated with externalization model. Then, they process them into combination and internalize them before they come into a decision about the ways they like to choose. These parts are related to the combination and the externalization model.

The third mode of Jordan and Jones knowledge creation is dissemination. This mode consists of process and breath dimensions. The process dimension where the knowledge is distributed formal or informally involves the socialization and the externalization model. The reason is that the knowledge dissemination involves the activity of sharing and knowledge exchange. The sharing activity can be done in the socialization model. Then, when they articulate the sharing results and save them in

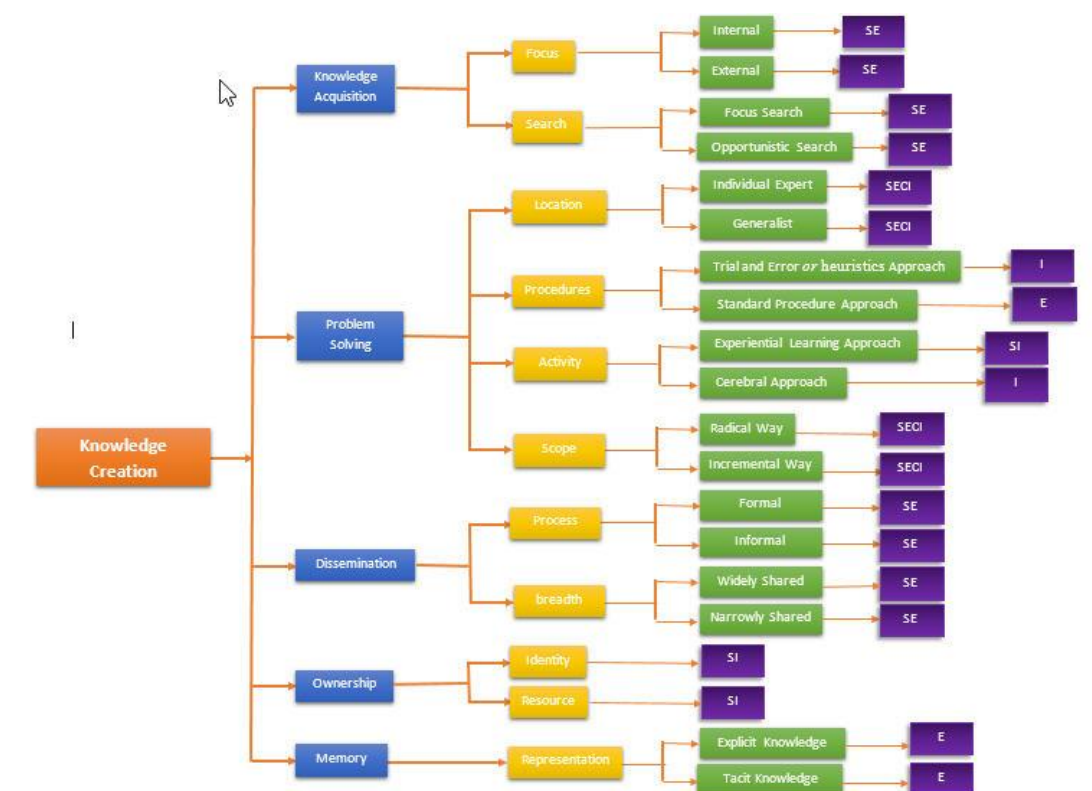
the shared databases where anyone can access, the externalization model is involved. Also, in the breath dimension, where the knowledge is widely or narrowly spread, the socialization and externalization model are involved. The team members will share the knowledge that is relevant to them in the meeting. They will also share the information to the all staff if it is relevant to them. This widely or narrowly spread of information involves the socialization model. Then, when they articulate the result and put in the shared database, it will involve externalization model.

The fourth mode of Jordan and Jones knowledge creation is ownership. This mode consists of identity and resources dimensions. Both of them involve the socialization and internalization mode. Since the identity is related to the embedded knowledge in each information literacy team, they need reasons and motivations to share their knowledge. Also, the team members need to internalize all the resources they get so they have valuable knowledge to share. Therefore, the socialization and internalization models are involved in this dimension. Then, in the resources dimension, where the team members are more generalist than specialist, the socialization model is involved because they need to share their knowledge. Therefore, the discrepancy in knowledge level can be minimized. Also, they need the internalization model to digest the shared information and then share it based on their perceptions.

The fifth mode of Jordan and Jones knowledge creation is memory. This mode has one dimension named representation. This representation dimension concerns the codification of explicit and tacit knowledge. Since it is related to the articulation of the tacit knowledge, the externalization model is involved in this dimension. The

explicit knowledge is codified in the shared database by the information literacy team. The knowledge is the hand-outs, the power point slides from the training and the information literacy materials. Then, the tacit knowledge should be articulated and codified in the form of 'learned lesson database'. This database records the articulation of the assumption and the process of problem solving. However, in the information literacy team, the articulation of the assumption and the process of problem solving is noted in the meeting minutes and report. They need to codify it separately so it can be easily search and reused.

Figure 4: The New framework of Knowledge Creation based on the Combination of the Nonaka Knowledge Creation Framework and The Jordan and Jones Knowledge Creation Framework



5.6. Conclusion

Based on the explanation above, it can be concluded that the Nonaka knowledge creation occurs in the dimension of Jordan and Jones knowledge creation. In the knowledge acquisition mode, the socialization and the externalization models occur both in the focus and search dimensions.

The SECI model also occurs in the problem solving mode that consists of four dimensions: location, procedures, activity, and scope. In the location dimension, the socialization, externalization, combination, and internalization models occur. Then, in the procedure dimension, the internalization model occurs in the trial and error approach and the externalization model is occurred in the standard procedure approach. Next, in the activity dimension, the socialization model occurs in the experimental learning approach and the internalization model occurs in the cerebral approach. Lastly, in the scope dimension, the socialization, externalization, combination, and internalization models are occurred in the radical and incremental ways dimension.

Then, in the dissemination mode, the socialization and the externalization models occur in the process and breadth dimensions. In the ownership dimension, the socialization and internalization models occur in the identity and resource dimension. Finally, the externalization model is occurred in the memory mode.

Chapter 6: Conclusion

6.1. The identification of the knowledge creation particularly occurred in the Information Literacy (IL) services

Based on the findings and discussion, the knowledge creation has already occurred in the information literacy service in the library of the Sanata Dharma University in general. The knowledge creation is measured based on the Nonaka et al framework, the Jordan and Jones framework and the combination of those two frameworks. Based on the Nonaka et al framework, the SECI model of knowledge creation has already occurred with some critical points that should be taken into account, such as the articulation of the tacit knowledge and the willingness of certain team member to share. Then, based on the Jordan and Jones framework, the knowledge creation has also occurred in its five modes. Some critical points have also been given, such as the equality access of the external resources; the finding of best practise in teaching method for certain circumstance through experiential learning approach; the arrangement of casual events for knowledge exchange; the encouragement of mailing list discussion, the codification and appreciation of the valuable ideas; and, the proper codification of tacit knowledge. Then, based on the combination between two frameworks, the justification of why the SECI model occurs in the five modes of Jordan and Jones knowledge creation framework in the context of information literacy service.

6.2. The Recommendation of the Future Potential Developments of Knowledge Creation in the Information Literacy (IL) service

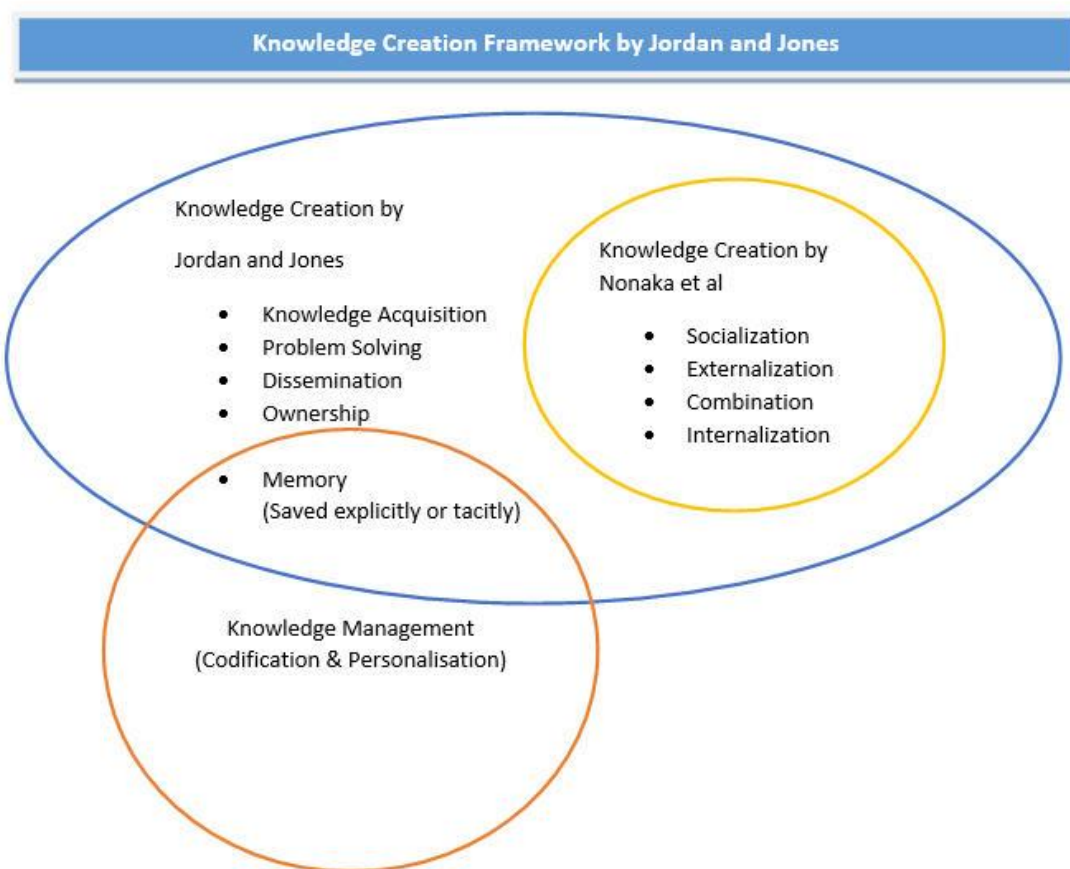
Based on the findings and discussion, there is some future potential development of knowledge creation in the information literacy service. First, to motivate the sharing and knowledge exchange, the most creative useful idea can be appreciated by giving

rewards, such as an acknowledgement in front of the all staff, bonus, or grades. Second, the casual events can be held by inviting the seventeen members of APTIK library consortium. The knowledge exchange results from this event can be validated, codified, published, and sold. Third, the online best-practise or lesson-learned database can be developed to save the ideas. The ideas or problem solving can be searched and found easily from this database by using the search engine. The users just need to input the keywords. Saving them in the meeting minutes or report is not systemized and will be rarely to be re-read. Moreover, it is mixed with other irrelevant information. The data base can be equipped by the 'likes' features where library staff or users can give contributions or feedbacks. Fourth, the multimedia about information literacy topic can be produced to help users or training participants more understand about the materials and to help users that cannot attend the training. Fifth, it will be beneficial to create a library social media account so that the team can socialize the training better. From the social media, the team can create polling about the topics that are of interest to the users and the time that is most suitable for them. The team can also create a chat group to communicate or share knowledge or information easily. Sixth, the Frequently Ask Questions (FAQ) about information literacy menu can be made in the website so that the users can read that before they ask. Seventh, it is useful to develop engagement with the academic staff so that the information literacy teaching can be integrated in the methodology research class. Thereby, many potential participants can be reached and the teaching and materials can be more easily prepared because the participants have the same background. Moreover, the teachers can get the background information from the lecturer about the participants' needs. All of this further development can be adjusted with the situation, condition, and policy in the library of Sanata Dharma University.

6.3. The Limitation of the Study and the Further Research

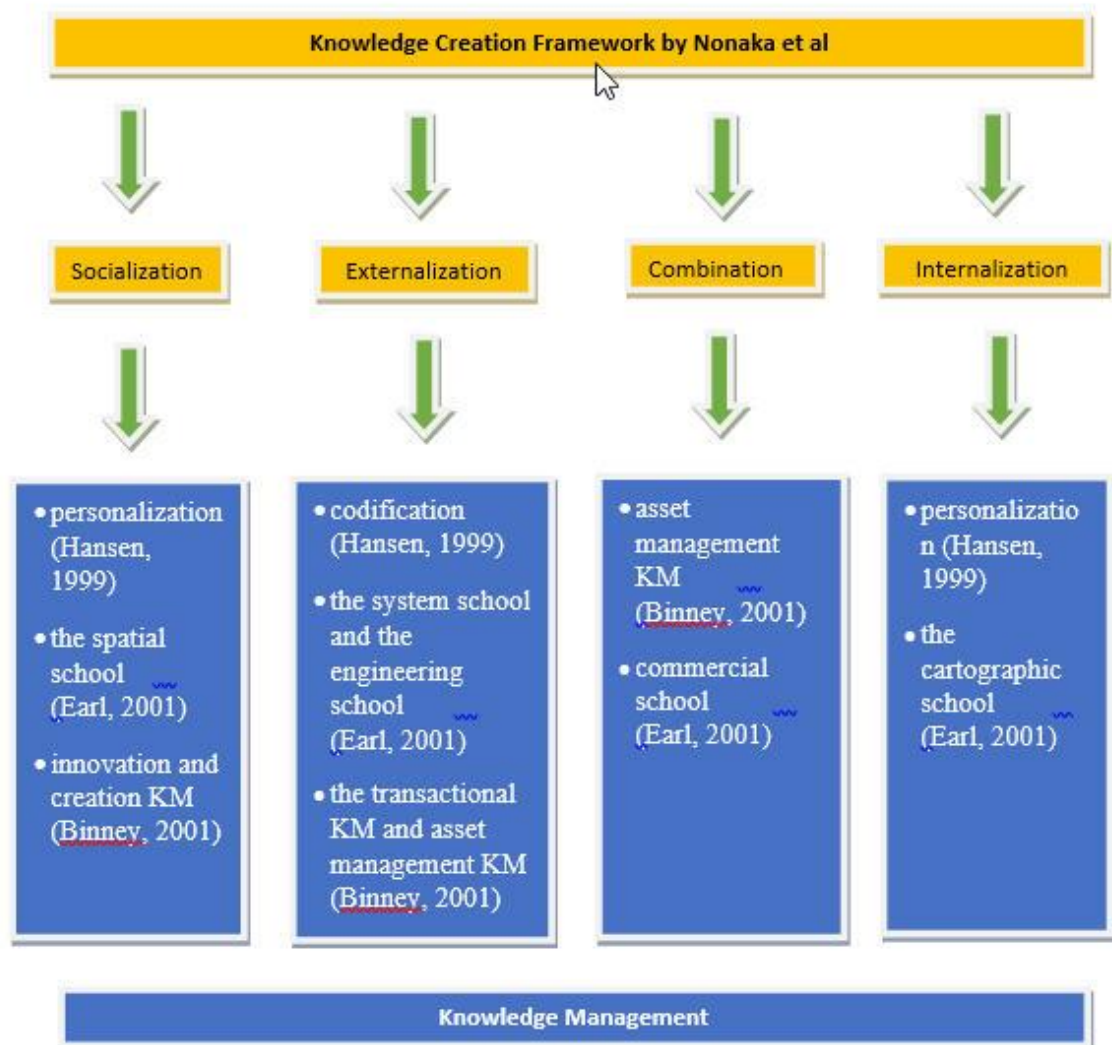
The limitation of this study is related to the time and the word limits. If there is a chance to have more time and limits, the research can be developed into the relationship between knowledge creation and knowledge management. For example, one mode of the Jordan and Jones framework discusses the memory that concerns the codification of tacit and explicit knowledge. This codification is actually related to knowledge management proposed by Hansen et al. (1999), Earl (2001), and Binney (2001). Figure 5 shows the diagram of this relationship so that it can be easily understood.

Figure 5: The Relationship between the Jordan and Jones Knowledge Creation with the Knowledge Management



Even though it is not written in the Nonaka et al, knowledge management has a close relationship with knowledge creation. For example, the sharing activities in the socialization model can be related to personalization (Hansen, 1999), the spatial school (Earl, 2001) and innovation and creation KM (Binney, 2001), where place and conducive environment are provided for sharing. Then, after the tacit knowledge is articulated into explicit knowledge, it needs to be codified. This codification can be related to the codification of (Hansen, 1999), the system school (Earl, 2001), the engineering school (Earl, 2001), the transactional KM (Binney, 2001) and asset management KM (Binney, 2001). When the articulated knowledge has been codified, it can be combined and a new knowledge creation produced. When a new knowledge creation is produced, it can be related to intellectual properties that should be managed and commercialized. This can be related to the asset management KM (Binney, 2001) and commercial school (Earl, 2001). For the internalization model, it can be related to personalization (Hansen, 1999) and the cartographic school (Earl, 2001). This model is related to the embedded knowledge of the individuals that can be recorded and mapped and codified into directories. Figure 6 shows the diagram of this relationship so that it can be easily understood.

Figure 6: The Relationship between the Nonaka et al Knowledge Creation with the Knowledge Management



Word Count: 15.500 words (excluding title, abstract, acknowledgement, tables, and appendix)

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APPENDIX 1: Nonaka et al Knowledge creation framework: Socialization, Externalization, Combination, and Internalization (SECI) creation model

Nonaka et al Knowledge creation framework: Socialization, Externalization, Combination, and Internalization (SECI) creation model	
Model	Description
Socialization Process of sharing experiences and thereby creating tacit knowledge such as shared mental models and technical skills	Tacit knowledge is gain from the observation, imitation, and practice. Learning by doing is the best way for getting knowledge in this model. Mental models and technical skills can be best achieved only by experiences.
Externalization Process of articulating the tacit knowledge into explicit concepts	Metaphors and/or analogies are usually used to help individuals express or describe their tacit knowledge into explicit knowledge.
Combination Process of systemizing concepts into a knowledge system	Different explicit knowledge from different sources and medias are combined and processed in order to produce new explicit knowledge.
Internalization	Explicit knowledge is perceived,

Process of embodying explicit knowledge into tacit knowledge	<p>reflected, and internalized it into the individual's tacit knowledge.</p> <p>Individual can learn from other people's experiences from documents, manuals, or stories without the need to re-experience it.</p>
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APPENDIX 2: Jordan and Jones knowledge creation framework

Jordan and Jones knowledge creation framework		
Mode	Dimension	Description
Knowledge Acquisition This mode consists of <i>focus</i> and <i>search</i> dimensions.	Focus This dimension internal or external sources in getting knowledge	<i>Internally</i> , the employees attempt to find knowledge from their co-workers, company data-bases and internal documents.
		<i>Externally</i> , the employees seek knowledge from external environment, such as supplier or other organizations in which

		the company has collaborative relationships.
	Search This dimension is differentiated into <i>focused search</i> and <i>opportunistic search</i> .	<i>Focused search</i> means that the knowledge is searched intentionally because of the existing problems. <i>Opportunistic search</i> means that the knowledge is searched randomly for just in case it is needed in the future.
Problem Solving This mode consists of ‘ <i>location</i> ’, ‘ <i>procedures</i> ’, ‘ <i>activity</i> ’, and ‘ <i>scope</i> ’ dimensions	Location This dimension shows whether the problem is solved by <i>individual experts</i> or <i>collaboratively by groups</i> .	<i>Individual experts</i> are specialists that have specific knowledge in their fields and can solve the problem sequentially.

		<p><i>Generalists</i> solve problems collaboratively in groups.</p>
	<p>Procedures</p> <p>This dimension concerns about the choice of approach in solving the problem.</p> <p>This dimension consists of a <i>trial and error</i> or <i>heuristics approach</i> and <i>using standard procedures approach</i> for routine everyday problem.</p>	<p><i>Trial and error</i> or <i>heuristics approach</i> emphasize on discovering things and learning from individual's experiences.</p>
		<p><i>Standard procedures approach</i> is used to solve routine everyday problem.</p>
	<p>Activity</p> <p>This dimension concerns about whether the problem is solved mainly by <i>experiential learning approach</i> or <i>cerebral approach</i>.</p>	<p><i>Experiential learning approach</i> involves a 'hands-on' way or practical experiences in problem solving.</p>
		<p><i>Cerebral approach</i> involves intellectual activity more than emotions or instincts in</p>

		problem solving.
	Scope This dimension focuses on whether the <i>radical</i> or <i>incremental</i> way is used to solve the problem.	<i>Radical</i> way is used to the modification of the company's underlying norms, policies and objectives.
		<i>Incremental</i> way is used to solve the problem based on the existing rules.
Dissemination This mode consists of two dimensions of the knowledge sharing way: 'process' and 'breadth'.	Process This dimension concerns whether the knowledge is shared formally or informally.	<i>Formal</i> knowledge sharing is done through meetings, seminars, or computerized database.
		<i>Informal</i> knowledge sharing is done through informal meeting or discussion over a cup of coffee.
	Breadth This dimension concerns whether the knowledge is shared widely or narrowly.	The knowledge is <i>widely shared</i> if it is shared to a wide range of employees.

		The knowledge is <i>narrowly shared</i> if it is shared only to the small number of relevant employees.
Ownership This mode of knowledge is differentiated into two aspects: the <i>emotional ownership (identity)</i> and <i>resource ownership</i> .	Identity This dimension is closely related to the embedded knowledge in the individuals.	In the <i>identity</i> dimension, individuals believe that their knowledges are important, highly personal and have been part of themselves. The willingness to share the knowledge from these individuals depends on their perceptions. The individuals might share their knowledges if they believe that their values in the company might be increased because of their activity.
	Resource This dimension is	In term of <i>resources</i> dimension, the company

	related to the knowledge dispersion among individuals in the company.	might have individual experts or specialists who work with a single domain of knowledge or generalists who work with overlapping domains of knowledge. The work of individual experts is not easily substituted while the work of generalists is substitutable.
Memory This mode consists of one dimension: <i>'representation'</i> .	Representation This dimension refers to whether the knowledge is mainly stored <i>explicitly</i> or	Explicit knowledge is codified and saved in the form of databases, diagrams, or documents.

	<i>tacitly.</i>	<p>Tacit knowledge is saved in the individuals' mind.</p> <p>Some tacit knowledges cannot be converted, codified and saved into explicit knowledges because they take too complicated, too long or impossible to put them into words.</p> <p>Tacit knowledges are articulated in principles because of their limitation.</p> <p>The other way to codify and save the tacit knowledge is making a 'learned lesson databases'.</p>
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APPENDIX 3: The analytical framework of the knowledge creation of Nonaka
et al and Jordan and Jones

Jordan and Jones knowledge creation framework			Nonaka et al Knowledge creation framework: Socialization, Externalization, Combination, and Internalization (SECI) creation model
Mode	Dimension	Description	Model
	Focus • <i>Internal</i> The employees attempt to find knowledge from their co-workers, company data-bases and internal documents.		<i>Socialization</i> <i>Externalization</i> <i>Combination</i> <i>Internalization</i>

	<ul style="list-style-type: none"> • <i>External</i> <p>The employees seek knowledge from external environment, such as supplier or other organizations in which the company has collaborative relationships.</p>		<i>Socialization</i> <i>Externalization</i> <i>Combination</i> <i>Internalization</i>
	Search <p>This dimension is differentiated into <i>focused search</i> and <i>opportunistic search</i>.</p>	<i>Focused search</i> <p>means that the knowledge is searched intentionally because of the existing problems.</p>	<i>Socialization</i> <i>Externalization</i> <i>Combination</i> <i>Internalization</i>
		<i>Opportunistic search</i> means that the knowledge is searched randomly for just in case it is needed in the	<i>Socialization</i> <i>Externalization</i> <i>Combination</i> <i>Internalization</i>

		future.	
Problem Solving This mode consists of ‘location’, ‘procedures’, ‘activity’, and ‘scope’ dimensions		<i>Individual experts</i> are specialists that have specific knowledge in their fields and can solve the problem sequentially.	<i>Socialization</i> <i>Externalization</i> <i>Combination</i> <i>Internalization</i>
		<i>Generalists</i> solve problems collaboratively in groups.	<i>Socialization</i> <i>Externalization</i> <i>Combination</i> <i>Internalization</i>
	Procedures This dimension concerns about the choice of approach in solving the problem.	<i>Trial and error or heuristics approach</i> emphasize on discovering things and learning from individual’s experiences.	<i>Internalization</i> <i>Externalization</i>
	This dimension consists of	<i>Standard procedures approach</i> is used to	<i>Externalization</i>

	a <i>trial and error</i> or heuristics <i>approach</i> and <i>using standard procedures approach</i> for routine everyday problem.	solve routine everyday problem.	
	Activity This dimension concerns about whether the problem is solved mainly by <i>experiential learning approach</i> or <i>cerebral approach</i> .	<i>Experiential learning approach</i> involves a ‘hands-on’ way or practical experiences in problem solving.	• <i>Socialization</i>
		<i>Cerebral approach</i> involves intellectual activity more than emotions or instincts in problem solving.	<i>Externalization</i> <i>Combination</i>
	Scope This dimension focuses on whether the <i>radical</i> or	<i>Radical</i> way is used to the modification of the company’s underlying norms, policies and	<i>Socialization</i> <i>Externalization</i> <i>Combination</i> <i>Internalization</i>

	<i>incremental way</i> is used to solve the problem.	objectives.	
		<i>Incremental way</i> is used to solve the problem based on the existing rules.	<i>Externalization</i>
Dissemination This mode consists of two dimensions of the knowledge sharing way: ‘ <i>process</i> ’ and ‘ <i>breadth</i> ’.	Process This dimension concerns whether the knowledge is shared formally or informally.	<i>Formal knowledge sharing</i> is done through meetings, seminars, or computerized database.	<i>Socialization</i> <i>Externalization</i>
		<i>Informal knowledge sharing</i> is done through informal meeting or discussion over a cup of coffee.	<i>Socialization</i> <i>Externalization</i>
	Breadth This dimension concerns whether the knowledge is shared widely or narrowly.	The knowledge is <i>widely shared</i> if it is shared to a wide range of employees.	<i>Socialization</i>
		The knowledge is <i>narrowly shared</i> if it is shared only to	<i>Socialization</i>

		the small number of relevant employees.	
Ownership This mode of knowledge is differentiated into two aspects: the <i>emotional ownership (identity)</i> and <i>resource ownership</i> .	Identity This dimension is closely related to the embedded knowledge in the individuals.	In the <i>identity</i> dimension, individuals believe that their knowledges are important, highly personal and have been part of themselves. The willingness to share the knowledge from these individuals depends on their perceptions. The individuals might share their knowledges if they believe that their values in the company might be increased because of their activity.	<i>Socialization</i>

	Resource This dimension is related to the knowledge dispersion among individuals in the company.	In term of <i>resources</i> dimension, the company might have individual experts or specialists who work with a single domain of knowledge or generalists who work with overlapping domains of knowledge. The work of individual experts is not easily substituted while the work of generalists is substitutable.	<i>Socialization</i>
Memory This mode	Representation This dimension	Explicit knowledge is codified and	<i>Externalization</i>

<p>consists of one dimension: <i>'representation'</i>.</p>	<p>refers to whether the knowledge is mainly stored <i>explicitly</i> or <i>tacitly</i>.</p>	<p>saved in the form of databases, diagrams, or documents.</p>	
		<p>Tacit knowledge is saved in the individuals' mind.</p> <p>Some tacit knowledges cannot be converted, codified and saved into explicit knowledges because they take too complicated, too long or impossible to put them into words.</p> <p>Tacit knowledges are articulated in principles because of their limitation.</p> <p>The other way to codify and save the tacit knowledge is</p>	<p><i>Socialization</i></p> <p><i>Externalization</i></p>

		making a ‘learned lesson databases’.	
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APPENDIX 4: Hansen Knowledge Management Strategy

Hansen Knowledge Management Strategy	
Codification	<p>The knowledge is codified and stored in a sharing database in the company.</p> <p>This strategy is a “people-to-documents” approach where the individual knowledge is extracted and codified in the database.</p> <p>The knowledge can be reused for various purposes and be independent from the person who develops it.</p> <p>Highly investment of IT is needed to connect people with the codified knowledge in the database.</p>
Personalization	<p>The personalization is the strategy where the knowledge is shared through direct communication with the original developer.</p> <p>The database is used to find people and the computer is used as a mean to communicate the knowledge; but, the knowledge itself is not stored in the</p>

	<p>database.</p> <p>This strategy is also known as a “person-to-person contacts” approach.</p> <p>The IT is used to facilitate communication and knowledge exchange.</p> <p>The IT investment is not as heavy as the “economic of reuse” strategy.</p>
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APPENDIX 5: Earl Knowledge Management Strategy: Schools of Knowledge Management

Earl Knowledge Management Strategy: Schools of Knowledge Management	
Technocratic	
The Systems School	<p>The individual or group specialist knowledge is codified in knowledge databases and can be accessed by the other specialists.</p> <p>The captured specialist knowledge is not only limited from the objective data but also from the experiences through practice.</p> <p>The validation of the codified knowledge in this system is important.</p> <p>The recognition for the contribution in</p>

	<p>knowledge creation should be taken into account.</p> <p>Highly investment in IT is needed in this school to capture, store, organize, and display the knowledge.</p>
The Carthographic School	<p>The organisational knowledge is recorded and mapped by finding out the individual or group expertise and codified it into directories.</p> <p>The purpose of this school is to ensure that the experts can be accessed by others for advice, consultation, or knowledge exchange.</p> <p>The experts' contact details are important to be inputted in this "yellow pages" or "people finder" like database.</p> <p>The incentive in this school is more likely to exchange the knowledge rather than to contribute the knowledge.</p> <p>The knowledge sharing culture and the communication network are the crucial success factors in this school.</p> <p>The function of IT in this school is to connect people internally or externally.</p>
The Engineering School	<p>The relevant knowledge or information</p>

	<p>access for workers is provided in order to enhance their performances in business and management processes.</p> <p>The availability of relevant knowledge or information supply and distribution are the two critical success factors in this school.</p> <p>The IT role in this school is to provide the accessible database through all knowledge worker across tasks, levels, entities, and geographies.</p>
Economic	
The Commercial School	<p>The Commercial School concerned with managing knowledge assets, such as patents, trademarks, copyright, and know-how.</p> <p>It focuses on intellectual or knowledge property protection and exploitation for commercialization.</p> <p>The development of specialist team and technique or procedure in managing knowledge property is the critical success factor.</p> <p>Developing and registering intellectual assets and its processing systems by</p>

	using IT.
Behavioral	
The Organisational School	<p>The organizational structure or network is used to share or pool knowledge.</p> <p>A group of people (knowledge communities) with the common problem, interest, or experience from intra- or interorganizational gathers.</p> <p>The knowledge is changed and shared interactively and often informally within this community.</p> <p>This community bring the knowledge and knower together and create a communication network instead of using shared knowledge bases.</p> <p>The success condition for this school is to combine the use of codification and personalization management strategies.</p> <p>The role of IT in this school is to connect people and pool their explicit and tacit knowledge.</p>
The Spatial School	<p>The space and spatial design is provided or used to encourage socialization and facilitate the knowledge exchange.</p> <p>The open place such as coffee bar or</p>

	<p>kitchen is used for knowledge sharing.</p> <p>This school is appropriate for tacit knowledge exchange and creation since it is difficult to be articulated into explicit knowledge.</p> <p>People, as a social being, would prefer to develop interaction and communication with others rather than access the documents or IT system.</p>
<p>The Strategic School</p>	<p>The Strategic School considers knowledge management as a company's competitive strategy.</p> <p>The position of knowledge as an intellectual capital in the company is considered at least as important as financial capital.</p> <p>It also views knowledge or intellectual capital as the key resources and raise the value creation and realization consciousness.</p> <p>This strategic school encourage the use of all other schools of knowledge management.</p> <p>The IT role in this strategy is to facilitate</p>

	the use of eclectic mix of networks, systems, tools, and knowledge repositories.
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APPENDIX 6: Binney Knowledge Management Strategy: KM Spectrum

Binney Knowledge Management Strategy: KM Spectrum	
Transactional KM	<p>The technology is heavily used to codify the knowledge.</p> <p>The codified knowledge can be searched and retrieved from the system to help the problem solving.</p> <p>The knowledge of past problem solving is also codified in the system so it can be easily accessed and retrieved to solve the similar problems faster and better.</p>
Analytical KM	<p>Data and information is analysed and interpreted in order to produce a specific knowledge.</p> <p>The specific knowledge derived from data and information in the system can be used to see the trends or patterns for the marketing or product development.</p>
Asset Management KM	<p>It focuses on how the knowledge assets are managed.</p>

	<p>The types of assets that can be managed are the codified explicit knowledge or the intellectual property.</p> <p>Those assets are captured in the system and can be accessed by people.</p>
Process-based KM	<p>The Process-based KM emphasised on the codification and improvement of business process, such as work-practices, procedures or methodology.</p> <p>The best practices selection and lesson learned are the products of this framework.</p>
Developmental KM	<p>This framework invests in human capital.</p> <p>The increase of knowledge workers' competencies or capabilities in the organization brings benefits for the company.</p> <p>The workers are assigned to join a training to increase the explicit knowledge.</p> <p>The workers are assigned to join a community for knowledge exchange, particularly in tacit knowledge.</p>

Innovation and Creation KM	This framework encourages the company to provide an environment in which the knowledge workers from different disciplines can gather and collaborate in teams to produce innovations.
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APPENDIX 7: The analytical framework of the knowledge management approach of Hansen – Earl - Binney

Hansen Knowledge Management Strategy	Earl Knowledge Management Strategy: Schools of Knowledge Management	Binney Knowledge Management Strategy: KM Spectrum
<p><i>Codification</i></p> <p>The knowledge is codified and stored in a sharing database in the company.</p> <p>This strategy is a “people-to-documents” approach where the individual knowledge is extracted and codified in the database.</p> <p>The knowledge can be reused for various purposes and be</p>	<p><i>The Systems School</i></p> <p>The individual or group specialist knowledge is codified in knowledge databases and can be accessed by the other specialists.</p> <p>The captured specialist knowledge is not only limited from the objective data but also</p>	<p><i>Transactional KM</i></p> <p>The technology is heavily used to codify the knowledge.</p> <p>The codified knowledge can be searched and retrieved from the system to help the problem solving.</p> <p>The knowledge of past problem solving is also</p>

<p>independent from the person who develops it.</p> <p>Highly investment of IT is needed to connect people with the codified knowledge in the database.</p>	<p>from the experiences through practice.</p> <p>The validation of the codified knowledge in this system is important.</p> <p>The recognition for the contribution in knowledge creation should be taken into account.</p> <p>Highly investment in IT is needed in this school to capture, store, organize, and display the knowledge.</p>	<p>codified in the system so it can be easily accessed and retrieved to solve the similar problems faster and better</p> <p><i>Analytical KM</i></p> <p>Data and information is analysed and interpreted in order to produce a specific knowledge.</p> <p>The specific knowledge derived from data and information in the system can be used to see the trends or patterns for the marketing or product development.</p>
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	<p><i>The Engineering School</i></p> <p>The relevant knowledge or information access for workers is provided in order to enhance their performances in business and management processes.</p> <p>The availability of relevant knowledge or information supply and distribution are the two critical success factors in this school.</p> <p>The IT role in this school is to provide the accessible database through all knowledge worker across tasks, levels, entities, and geographies.</p>	<p><i>Asset Management KM</i></p> <p>It focuses on how the knowledge assets are managed.</p> <p>The types of assets that can be managed are the codified explicit knowledge or the intellectual property.</p> <p>Those assets are captured in the system and can be accessed by people.</p>
<i>Codification/Personalization</i>	<p><i>The Commercial School</i></p> <p>The Commercial School concerned with</p>	<p><i>Process-based KM</i></p> <p>The Process-based KM emphasised on the</p>

	<p>managing knowledge assets, such as patents, trademarks, copyright, and know-how. It focuses on intellectual or knowledge property protection and exploitation for commercialization.</p> <p>The development of specialist team and technique or procedure in managing knowledge property is the critical success factor.</p> <p>Developing and registering intellectual assets and its processing systems by using IT.</p>	<p>codification and improvement of business process, such as work-practices, procedures or methodology.</p> <p>The best practices selection and lesson learned are the products of this framework.</p>
	<p><i>The Organizational School</i></p> <p>The organizational structure or network is used to share or pool</p>	

knowledge.

A group of people (knowledge communities) with the common problem, interest, or experience from intra- or interorganizational gathers.

The knowledge is changed and shared interactively and often informally within this community.

This community bring the knowledge and knower together and create a communication network instead of using shared knowledge bases.

The success condition for this school is to combine the use of codification and personalization

management strategies.

The role of IT in this school is to connect people and pool their explicit and tacit knowledge.

the Strategic School

The Strategic School considers knowledge management as a company's competitive strategy.

The position of knowledge as an intellectual capital in the company is considered at least as important as financial capital.

It also views knowledge or intellectual capital as the key resources and raise the value creation and realization consciousness.

	<p>This strategic school encourage the use of all other schools of knowledge management.</p> <p>The IT role in this strategy is to facilitate the use of eclectic mix of networks, systems, tools, and knowledge repositories.</p>	
<p>Personalization</p> <p>The personalization is the strategy where the knowledge is shared through direct communication with the original developer.</p> <p>The database is used to find people and the computer is used as a mean to communicate the knowledge; but, the knowledge itself is not stored in the database.</p> <p>This strategy is also known as a “person-to-person contacts”</p>	<p>The Carthographic School</p> <p>The organisational knowledge is recorded and mapped by finding out the individual or group expertise and codified it into directories.</p> <p>The purpose of this school is to ensure that the experts can be accessed by others for advice, consultation, or</p>	<p>Developmental KM</p> <p>This framework invests in human capital.</p> <p>The increase of knowledge workers’ competencies or capabilities in the organization brings benefits for the company.</p> <p>The workers are assigned to join a training to increase the explicit knowledge.</p>

<p>approach.</p> <p>The IT is used to facilitate communication and knowledge exchange.</p> <p>The IT investment is not as heavy as the “economic of reuse” strategy.</p>	<p>knowledge exchange.</p> <p>The experts’ contact details are important to be inputted in this “yellow pages” or “people finder” like database.</p> <p>The incentive in this school is more likely to exchange the knowledge rather than to contribute the knowledge.</p> <p>The knowledge sharing culture and the communication network are the crucial success factors in this school.</p> <p>The function of IT in this school is to connect people internally or externally.</p>	<p>The workers are assigned to join a community for knowledge exchange, particularly in tacit knowledge.</p>
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	<i>The Spatial School</i>	<i>Innovation and Creation KM</i>
	<p>The space and spatial design is provided or used to encourage socialization and facilitate the knowledge exchange.</p> <p>The open place such as coffee bar or kitchen is used for knowledge sharing.</p> <p>This school is appropriate for tacit knowledge exchange and creation since it is difficult to be articulated into explicit knowledge.</p> <p>People, as a social being, would prefer to develop interaction and communication with others rather than access the documents or IT system.</p>	<p>This framework encourages the company to provide an environment in which the knowledge workers from different disciplines can gather and collaborate in teams to produce innovations.</p>

APPENDIX 8: Knowledge Management Framework Description

Although it is not easy to define, it does not mean that knowledge cannot be managed. The good knowledge management can support the organisation to get an easy and fast access to the knowledge for an effective and efficient decision making. Therefore, knowledge management is as important as managing other assets in the organisations to gain the competitive advantages. Jashapara (2004) stated “it is no longer the traditional industrial technologies or craft skills that drive competitive performance but instead knowledge that has become the key asset to drive organizational survival and success” (p. 9).

According to Cross (1998), “Knowledge management is the discipline of creating a thriving work and learning environment that fosters the continuous creation, aggregation, use and re-use of both organizational and personal knowledge in the pursuit of new business value” (p. 11). Spek and Carter (2005) described knowledge management in their study as “All of the necessary activities to orchestrate an environment in which people are invited and facilitated to apply, develop, share, combine and consolidate relevant knowledge in order to achieve their individual and collective ambitions” (p. 193). Based on both definitions, the company’s provision of environment and support for managing knowledge is the most important.

Based on Spek and Carter (2005) best practice study, the main goal of knowledge management is to learn from the lesson learned, the colleagues across the units, disciplines, and geographical location in the company, as well as partners outside the company. The company can improve its capability and effectiveness if their

employees integrate this knowledge management in their daily works. On the other hand, the objective of knowledge management is “to design the organization’s strategy, structure, processes, and systems so that the organization can use what it knows to create value for its customers and community” (Choo, 2000, p. 259).

Combining those objectives, the improvement and the effectiveness in the company can be accelerated and the probability to gain the competitive advantages can increase if the three core learning processes are supported by organization or company’s strategy, structure, processes, and systems.

APPENDIX 9: The Knowledge Management Description and Analyzation

Hansen Knowledge Management Strategy

The shift from the natural resources to the industrial assets in the industrialized economies in 1990s has compelled the examination of the use of knowledge to gain a competitive advantage. The lack of proper models in using the knowledge properly has led Hansen et al (1999) to conduct a study about knowledge management practice in the consulting firms where knowledge is the core asset. According to their study, Hansen et al (1999) proposed a knowledge management framework consisting the two strategies: codification and personalization. The codification is the strategy where the knowledge is codified and stored in a sharing database in the company. This strategy is a “people-to-documents” approach where the individual knowledge is extracted and codified in the database. The knowledge can be reused for various purpose and be independent from the person who develop it. In this strategy, highly investment of IT is needed to connect people with the codified knowledge in the database. On the other hand, the personalization is the strategy where the knowledge

is shared through direct communication with the original developer. The database is used to find people and the computer is used as a mean to communicate the knowledge; but, the knowledge itself is not stored in the database. This strategy is also known as a “person-to-person contacts” approach. This strategy uses an IT to facilitate communication and knowledge exchange. Therefore, the IT investment is not as heavy as the “economic of reuse” strategy.

Then, the choice of the strategy depends on the companies’ competitive strategy. The competitive strategy means that the companies have to articulate their services and values that they offer to their customers. In this case, the companies have to identify the types of knowledge in term of their services and values before they choose their strategy. The companies need to define whether the knowledge assets that they use to serve their customers rely on the “economic of reuse” or “expert economics”. If the knowledge asset can be codified and stored in the database, the “economics of reuse” strategy is the appropriate choice. The examples of the reused codified knowledge are software code, training material, change management or a manual documentation. By contrast, if the knowledge in the company is mostly tacit, shared deeply, and often customized based on the case as in the consultation firm, the choice of “expert economics” strategy is more appropriate. The three questions proposed by Hansen et al before choosing the appropriate strategy are: *“Do you offer standardized or customized products? (...) Do you have a mature or innovative product? (...) Do your people rely on explicit or tacit knowledge to solve problems?”*

Hansen et al (1999) said that the “economic of reuse” strategy is a low cost and saves time because the same knowledge can be reused many times for many cases.

Moreover, it also saves works, communication costs, and allows the company to handle more projects. On the contrary, the “expert economics” strategy is time consuming, expensive, and slow because the knowledge is often modified/customized based on the clients’ needs. Also, in the “economic of reuse” strategy, the training can be conducted in group or through computer-based distance learning. On the other hand, the training in the “expert economics” strategy must be done through one-on-one training.

Hansen et al (1999) emphasized that the company should choose one approach as a main strategy and use the other strategy to support it. Based on their studies, the company can implement an 80–20 composition between the codification and personalization strategies. 80% for the implementation of the main strategy and 20% for the supporting strategy. Trying to excel both strategies will lead the company to risk the failure.

Earl Knowledge Management Strategy

Earl (2001), concerned with the organisational performance improvement, proposed a knowledge management framework known as ‘Schools of Knowledge Management’. This Schools of Knowledge Management consists of seven parts placed under three labels. The System School, the Cartographic School, and the Engineering School belong to “Technocratic” label because they are mainly supported by information or management technology. Then, The Commercial School is labelled under the “Economic” because it exploits the knowledge and intellectual capital in order to gain revenue. Finally, The Organisational School, The Spatial School, The Strategic School fall under “Behavioral” label because they attempt to

initiate the managers and managements to be proactive in creating, sharing, and using the knowledge resources.

The brief description of the Seven Schools of Knowledge Management framework is:

The Systems School

The main purpose of the *Systems Schools* is to codify the individual or group specialist knowledge in knowledge databases that can be accessed by the other specialists. The captured specialist knowledge is not only limited from the objective data but also from the experiences through practice. Most importantly, the codified knowledge in this system must be validated and the recognition for the contribution in knowledge creation should be taken into account. This *Systems School* need highly investment in IT to capture, store, organize, and display the knowledge.

The Carthographic School

The Carthographic School concerns is to record and map the organisational knowledge by finding out the individual or group expertise and codified it into directories. The purpose of this school is to ensure that the experts can be accessed by others for advice, consultation, or knowledge exchange. Therefore, it is important to mention the experts' contact details in this "yellow pages" or "people finder" like database. The incentive in this school is more likely to exchange the knowledge rather than to contribute the knowledge. The knowledge sharing culture and the communication network are the crucial success factors in this school. Moreover, the function of IT in this school is to connect people internally or externally.

The Engineering School

The idea of Engineering Schools is that providing relevant knowledge and information access for workers can enhance their performances in business and management processes

There are two critical success factors in this school. First, the relevant knowledge and information accesses are available for the workers in the systems. Second, the knowledge and information supplies and distributions are not restricted. In other words, the proper knowledge and information access are the crucial tools for the knowledge workers to do their jobs. The IT role in this school is to provide the accessible database through all knowledge worker across tasks, levels, entities, and geographies.

The Commercial School

The Commercial School concerned with managing knowledge assets, such as patents, trademarks, copyright, and know-how. It focuses on intellectual or knowledge property commercialization by protecting and exploiting them. This school is described as “*most concerned with exploitation of knowledge and least concerned with exploration*”.

The development of specialist team and technique or procedure in managing knowledge property is the critical success factor in this school. The IT contribution in this school is to develop and register intellectual assets and its processing systems.

The Organisational School

The notion of the Organizational School is to use the organizational structure or network to share or pool knowledge. In this school, a group of people with the common problem, interest, or experience gathers. Therefore, this school is also described as “knowledge communities”. The communities can be developed intra- or interorganizational. Within this community, the knowledge is changed and shared interactively and often informally. Instead of using shared knowledge bases, this community bring the knowledge and knower together and create a communication network. The success condition for this school is to combine the use of codification and personalization management strategies. The role of IT in this school is to connect people and pool their explicit and tacit knowledge.

The Spatial School

The Spatial School or a Social School’s notion is to provide and to use the space and spatial design to encourage socialization and facilitate the knowledge exchange. The company architecture should consider an open place such as coffee bar or kitchen where people can share their knowledge. Tacit knowledge is a typical knowledge that requires the open place most because it is difficult to be articulated into explicit knowledge. Moreover, as a social being, people would prefer to develop interaction and communication with others rather than access the documents or IT system.

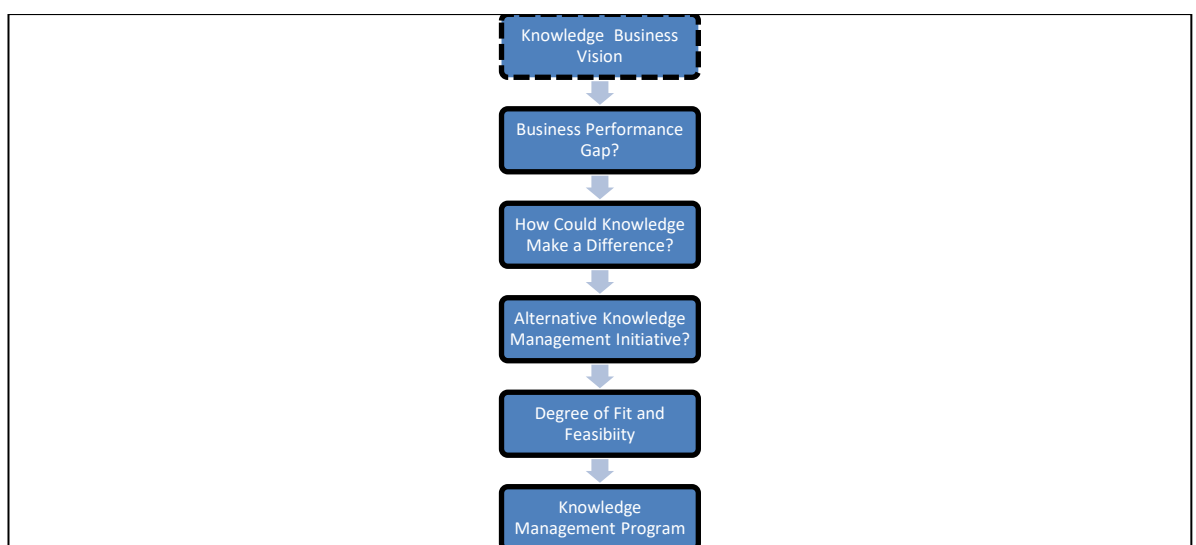
The Strategic School

The Strategic School considers knowledge management as a company’s competitive strategy. The position of knowledge as an intellectual capital in the company is considered at least as important as financial capital. It also views knowledge or intellectual capital as the key resources and raise the value creation and realization

consciousness. This strategic school encourage the use of all other schools of knowledge management. The IT role in this strategy is to facilitate the use of eclectic mix of networks, systems, tools, and knowledge repositories.

In term of practice, Earl (2001) stated that the taxonomy can help the company to select and start the appropriate knowledge management strategy. The five questions formulated from the seven schools of knowledge management can lead the company to choose the right strategy. The questions that should be considered are: 1. What is the knowledge business vision? 2. What is the business performance gap? 3. How could knowledge make a difference? 4. What are the alternative knowledge management initiatives? and 5. What is the degree of fit and feasibility? To answer the third question, the company should refer it to the first question and to answer the fourth question, the company should relate it to the first question.

Figure 6: The five questions formulated from the seven schools of knowledge management can lead the company to choose the right strategy



Binney Knowledge Management Strategy

Binney (2001) developed and proposed knowledge management framework called “KM Spectrum” to answer the question about knowledge management application and technologies. Here is the brief description of KM Spectrum:

Transactional KM

The transactional KM use the technology heavily to codify the knowledge. The codified knowledge can be searched and retrieved from the system to help the problem solving. The knowledge of past problem solving is also codified in the system so it can be easily accessed and retrieved when the similar problems occurred. In doing so, the task completion can be done faster and better. Some examples of Transactional KM are help desk and customer service.

Analytical KM

In this framework, data and information is analysed and interpreted in order to produce a specific knowledge. For example, the specific knowledge derived from data and information can be used to see the trends or patterns for the marketing or product development. The data and information itself can be generated from the system automatically.

Asset Management KM

This framework concerns about how the knowledge assets are managed. The types of assets that can be managed are the codified explicit knowledge or the intellectual

property. Then, those assets are captured in the system and can be accessed by people.

Process-based KM

The Process-based KM emphasised on the codification and improvement of business process, such as work-practices, procedures or methodology. Some products of this framework are the best practices selection and lesson learned.

Developmental KM

Developmental KM invests in human capital. This framework believes that increasing of knowledge workers' competencies or capabilities in the organization brings the benefits for the company itself. To increase the explicit knowledge, the workers are assigned to join a training. On the other hand, the workers can also be assigned to join a community for knowledge exchange, particularly in tacit knowledge.

Innovation and Creation KM

The Innovation and Creation KM framework encourages the company to provide an environment in which the knowledge workers from different disciplines can gather and collaborate in teams to produce innovations. Nonaka and Konno (1990) best summarized this framework by saying "Knowledge is manageable only insofar as leaders embrace and foster the dynamism of knowledge creation. The role of top management is as the providers of *ba* for knowledge creation. Their task is to manage for knowledge *emergence*." (p. 14)

Table 2: The analytical framework of the knowledge management approach of Hansen – Earl - Binney

Hansen Knowledge Management Strategy	Earl Knowledge Management Strategy: Schools of Knowledge Management	Binney Knowledge Management Strategy: KM Spectrum
<i>Codification</i>	<i>The Systems School</i>	<i>Transactional KM</i>
		<i>Analytical KM</i>
	<i>The Engineering School</i>	<i>Asset Management KM</i>
<i>Codification/Personalization</i>	<i>The Commercial School</i>	<i>Process-based KM</i>
	<i>The Organizational School</i>	
	<i>The Strategic School</i>	
<i>Personalization</i>	<i>The Carthographic School</i>	<i>Developmental KM</i>
	<i>The Spatial School</i>	<i>Innovation and Creation KM</i>

In general, Hansen et al (1999) divided KM strategy into *asset* and *personalization*. The codification strategy, known as “people-to-documents” approach, focused on how the individual knowledge is extracted and codified in the database. On the other hand, the personalization strategy, known as “person-to-person contacts” approach, focused on direct communication sharing with the original developer. In the

company, however, both strategies can be applied together with mainly emphasizing in one strategy.

Besides Hansen, Earl (2001) also proposed the seven school of knowledge management framework that consists of *the system school*, *the cartographic school*, *the engineering school*, *the commercial school*, *the organisational school*, *the spatial school*, and *the strategic school*.

When the Earl seven school of knowledge management framework is associated with the Hansen KM strategy, his seven school of knowledge management framework can be categorised into codification strategy, codification/personalization strategy, and personalization strategy. First, The Earl's system school and the engineering school are associated with the codification strategy. The underlying reason is that these schools concern with codifying the individual or group knowledge in the shared knowledge databases.

Second, the commercial school, the organizational school, and the strategic school are associated with the codification/personalization strategy. The commercial school that focuses on managing intellectual or knowledge property is closely related to codify the assets or refer the person who needs specific knowledge to its experts. Then, the organizational school that concerns with the use of organizational structure or network as a knowledge sharing or pooling is best leveraged when both the codification/personalization strategies are applied. In this school, the codification occurs when the sharing results of the tacit knowledge are codified/pooled in the shared company database. On the other hand, the personalization occurs when the

individual or group knowledge is shared formally or informally. Last, the strategic school, considering knowledge management as a strategy to gain a competitive advantage, suggest the use of other school strategies to leverage its key resources. By using the other schools of knowledge management, this school proposes the use of both the codification and the personalization strategy.

Third, the cartographic school and the spatial school are associated with the Hansen's personalization strategy. The underlying reason is that the cartographic school concerns in recording and mapping the individuals or group expertise. This school focuses on how the individuals can find the relevant experts for advice, consultation, or knowledge exchange. Then, the spatial school concerns in space and special design provision to facilitate the knowledge sharing and knowledge exchange between the workers. The communication network and sharing culture in these schools are definitely the distinctive feature of personalization strategy.

Moreover, Binney, known as his KM spectrum, developed and proposed KM frameworks that consists of *transactional KM*, *analytical KM*, *asset management KM*, *process-based KM*, *developmental KM*, *innovation and creation KM*. First, the transactional KM, the analytical KM, and the asset management KM are associated with Hansen's codification strategy and the Earl's systems school and engineering School. The underlying reason is that all of those strategies focus on the use of codification in managing the explicit knowledge. This explicit knowledge can be derived, analysed, and reused to solve the future problem or challenge.

Second, the process-based KM is associated with the Hansen's codification/personalization strategy and the Earl's commercial school,

organizational school, and strategic school. Besides emphasizing on the codification, the process-based KM also use the personalization strategy where the best practise and lesson learned are produced. Both of the strategies are used to improve the company's business process. The lesson learned is the explicit knowledge that comes from the principle of tacit knowledge sharing.

Third, the development KM and Innovation KM focus mainly on the personalization strategy. The developmental KM concerns in investing the human capital by increasing the workers' knowledge through training and community participation. Training and community participation are the two activities that closely associate with the personalization strategy where the knowledge is shared through direct communication. Similarly, the innovation and creation KM encourage the company to provide the environment that can facilitate gathering and collaboration between workers from various disciplines.

APPENDIX 10: Ethic Approval Letter



Downloaded: 01/09/2016

Approved: 30/06/2016

Santi Kusuma
 Registration number: 150112776
 Information School
 Programme: Information Management

Dear Santi

PROJECT TITLE: The Knowledge Creation in the Shared Context and the Knowledge Management Strategies: The Case Study of the Atma Jaya Yogyakarta and the Sanata Dharma University Libraries
APPLICATION: Reference Number 010343

On behalf of the University ethics reviewers who reviewed your project, I am pleased to inform you that on 30/06/2016 the above-named project was **approved** on ethics grounds, on the basis that you will adhere to the following documentation that you submitted for ethics review:

- University research ethics application form 010343 (dated 28/06/2016).
- Participant consent form 1020571 version 1 (28/06/2016).
- Participant consent form 1020570 version 1 (28/06/2016).

If during the course of the project you need to [deviate significantly from the above-approved documentation](#) please inform me since written approval will be required.

Yours sincerely

Daniel Rose
 Ethics Administrator
 Information School

APPENDIX 11: Access to Dissertation



The
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Of
Sheffield.

Information
School.

Access to Dissertation

A Dissertation submitted to the University may be held by the Department (or School) within which the Dissertation was undertaken and made available for borrowing or consultation in accordance with University Regulations.

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Name Santi Kusuma

Department

Signed Santi Kusuma

Date 1 September 2016

To be completed by the Supervisor – Select (a) or (b) by placing a tick in the appropriate box

- ☐ (a) I, the supervisor, agree to this dissertation being made immediately available through the Department and/or University Library for loan or consultation, subject to any special restrictions (*) agreed with external organisations as part of a collaborative project.

**Special
restrictions*

- ☐ (b) I, the supervisor, request that this dissertation be withheld from loan, consultation or reproduction for a period of [] years from the date of its submission. Subsequent to this period, I, agree to this dissertation being made available through the Department and/or University Library for loan or consultation, subject to any special restrictions (*) agreed with external organisations as part of a collaborative project

Name

Department

Signed

Date

THIS SHEET MUST BE SUBMITTED WITH DISSERTATIONS BY DEPARTMENTAL REQUIREMENTS.

Information School
Address & First Employment Destination Details

Name:	Santi Kusuma
Programme:	Information School
Registration No:	150112776

CONFIRMATION OF ADDRESS

The University student record system has the capability to record up to three different addresses for you at any one time: HOME address, TERM-TIME address and CORRESPONDENCE address.

Please note that the University and the School will use the details on your **HOME** address record when posting out information to you, e.g. Statement of Results, Notification of Degree Results, Degree Ceremony information etc. It is therefore **YOUR RESPONSIBILITY** to ensure this address information is up to date so that communications we post to you get to you.

However, if you know that you will be staying at a temporary/other address rather than your home address after completing the programme, and you wish correspondence to be sent to this temporary/other address it is **YOUR RESPONSIBILITY** to add the address details to the **CORRESPONDENCE** address on your student record. If you have provided a Correspondence address this will be used instead of the Home address to post out communications to you. (See www.shef.ac.uk/ssid/record/correspondence.html for more information) The Schools **will not** send out correspondence to your **TERM** address once you have completed your studies with us.

You can check and update all your address information by logging on to the SSID website at www.shef.ac.uk/ssid/record/pin.html. You will need your UCARD PIN number to access your student record.

I confirm that I have checked, and updated if necessary, my HOME address details on my University student record	<i>tick to confirm</i> V
I wish correspondence to go to a temporary/other address and not my Home address, and I have therefore provided CORRESPONDENCE address details on my University student record.	<i>tick to confirm</i> V

Alumni Information

I agree that the Information School may pass details regarding the result of my degree to the relevant Professional Body Organizations for the purposes of assisting these organisations in deciding my eligibility for the award of professional accreditation.	<i>tick to agree</i> V
I would like my name to go on the School's Alumni webpage. I would like my name and email address to go on the School's Alumni webpage My email address is miry4m@yahoo.com (please do not use your Sheffield University email address)	<i>tick to agree</i> V <i>tick to agree</i> V
I would like to be forwarded details of any job vacancies received by the School. My email address is miry4m@yahoo.com (please do not use your Sheffield University email address)	<i>tick to agree</i> V

First Employment Destination Details for School Records

It is very important that we receive information on how and where students have gained their first employment after finishing their programme of study with the Information School. Prospective and current students find it very useful to know the types of jobs/sectors that graduates of our programmes can expect to go into and we provide summarised information on the School website at www.shef.ac.uk/is/careers for each separate programme. The School also has to provide a summary report to the University Faculties on first destinations as part of Teaching Quality Assessment, Therefore any updated information you can give us is vital and very much appreciated.

Employer's name and address (inc. telephone number and email if available):	Diao Ai Lien
Job Title:	Librarian Staff
Brief Job Description:	Library Acquisition
Starting Date:	2007
Please tell us where you saw this post advertised:	

Is this employment: Full-time V or Part-time	Is this employment: Permanent V or Temporary	Are you returning to an existing post: YES or NO
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Would you be interested in participating in careers talks within the iSchool? My email address is miry4m@yahoo.com (please do not use your Sheffield University email address)	<i>tick to agree</i> V
--	---------------------------

Signed: Santi Kusuma Date 1 September 2016