

A Study Of Tacit Knowledge Management In The Public Sector

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ABSTRACT:

Some scholars have seen an organization as an entity that consists of lots of tangible and intangible knowledge. The concept of tangible and intangible knowledge echoes what Polanyi (1975) refers to as “tacit and explicit knowledge”. Some scholars such as Faulkner and Senker (1995) think that dividing knowledge into tacit and explicit types is inappropriate. They argue that people explain what they see and what they know in their own experiences. These experiences are usually in a tacit form. Therefore, even when people are delivering explicit information, they express both tacit and explicit knowledge.

This research uses a qualitative method to explore the tacit way of knowledge management in the public sector in Taiwan. 11 public servants and 5 employees in the private sector were interviewed, while 3 departments in the central government and 2 departments in a privatized institution were visited. The researcher tries to explain how the individual and organizational learning are developed within the context of a bureaucratic organization. The theoretical dilemmas of Nonaka and Takeuchi’s (1995) views on knowledge management are discussed, such as the spiral of knowledge as well as the concept of redundancy. The ideological contradictions between the radical orientation of learning organization and knowledge management are also highlighted in this study.

Keywords: *Knowledge management, Public sector, Tacit knowledge, Organizational learning*

1. Introduction

Knowledge is a decisive key to the competitiveness of an enterprise. Knowledge transferring within an organization determines the organizational efficiency. How to pass various types of knowledge effectively to organizational members is crucial, so many scholars try to find solutions for this. The most difficult area of knowledge management is dealing with tacit knowledge. This article uses a qualitative research method to reflect on the mechanisms of dealing with tacit knowledge in the public sector.

Knowledge is a concept which is closely related to one’s learning behavior. A message which hasn’t been digested by the individual can only be viewed as data or information rather than knowledge. Therefore, the process of disseminating and digesting information in an organization can probably be classified as a sort of learning behavior. Knowledge management is therefore a term that is closely related to both concepts of learning organization and organizational learning. However, both terms are easily confused. Some suggest that learning organization and organizational learning are two in one, through which a learning organization is based on well developed organizational learning activities (Finger & Brand, 1999). Some argue that organizational learning can be viewed, on the one hand, as a mechanism which enables the organization to retrieve and digest

information from varied organizational activities to enhance performance (Moorman and Miner, 1997). A learning organization is, on the other hand, a kind of vitality which provides members with energy to keep exploring the world and adjusting themselves to changes. (Senge, 1990). Points of view such as the above highlight the importance of the process of producing knowledge. An organization can learn things by itself and the products and by-products derived from the learning process have influences on the knowledge base of the organization.

Although organizations may be able to learn things by themselves, the knowledge management mechanism in a government organization is especially pregnant with meaning. On one hand, the public sector has a strict division of labor, and there is no incentive to cause public servants to want to look after other colleagues' business. This situation makes knowledge delivery in the public sector more difficult than that in the private sector. On the other hand, there are a large number of routines in the public sector, so public servants' interactions are limited and directed. Knowledge sharing and creation may be hindered because of the routine environment. Situations such as the above make knowledge management in the public sector even more difficult.

The public service system is the essential part of public administration in the whole country. In turbulent times, if the government organization cannot adjust itself to changes, the country's public administration will soon cause problems. In other words, if the public sector has no appropriate learning mechanism to retrieve tacit and explicit knowledge, the government will not be able to provide the public with qualified services, to say nothing of the country's development. Therefore, the focus of this research is on how the public sector in Taiwan retrieves tacit knowledge from its employees' daily routines. The researcher tries to identify the issues of tacit knowledge sharing in reality. Nonaka's (1994) ideas of a spiral of knowledge and redundancy will also be reexamined in this study.

2. Theoretical Debate And Background – Knowledge Management

In the business field, knowledge management is always related to product, marketing, or customer strategies. Some scholars such as Balla et al (1999) argue that knowledge management is a kind of strategy referring to deployment and leveraging of several products rather than a single product or a genre of technology. Coates (1999) also views knowledge management from the angle of strategy and assumes that the strategy is unfolded and is for the purpose of dealing with recurrent weaknesses, to better take advantage of what they know (Coates 1999). Gore and Gore (1999) believe that knowledge management is closely related to organizational change, because an organizational process that is formed by knowledge movement always promotes environmental changes in the workplace, including changes in work practices, processes and products.

Some scholars have seen an organization as an entity that consists of lots of tangible and intangible knowledge (Grant, 1996). The classification of tangible and intangible echoes what Polanyi (1975) refers to as "tacit and explicit knowledge". Besides this dichotomy, scholars also present other ways to identify the knowledge within an organization. For example, Blackler (1995) identifies 5 classifications of knowledge: embrained, embodied, encultured, embedded and encoded. Spender (1996) concludes that there are different types of knowledge: conscious, objectified, automatic and collective. Some scholars such

as Faulkner and Senker (1995) think that dividing knowledge into tacit and explicit types is inappropriate. They argue that people explain what they see and what they know in their own experiences. These experiences are usually in a tacit form. Therefore, even when people are delivering explicit information, they express both tacit and explicit knowledge.

To make knowledge within an organization explicit, scholars have demonstrated a large number of ways to put the idea of knowledge management into practice. For instance, Kleiner and Roth (1997) suggest using “learning history” to record important events to help organizational learning. To compose the history, experts use a double-column table to describe and analyze the event. In the right hand side column, interviewees who experienced the event describe their experiences. Some comments or analysis by learning historians will be given in the left hand column. The learning history is not just a record of the past, but a knowledge base for coping with similar difficulties in the future. For example, a division that has a successful history of creating a new product can trace the history to apply the experience to new product development. Using the history, the leader of the division will ask members to review the history and underline the parts where they felt excited, confused or attracted. They can then discuss in depth the reasons for success.

Nonaka (1994:29) suggests 4 conversion mechanisms, called a “knowledge spiral”, to deal with the tacit and explicit knowledge in the organization. Applying the model to the concept of learning history, we will know more about how the knowledge spiral is working. First, since the event happened in the past, a facilitator applies methods, such as interview or storytelling, to make tacit knowledge explicit. This is one of the stages of the knowledge spiral called “externalization” (Nonaka and Takeuchi 1995:30). Secondly, some experts, learning historians, compose the learning history and integrate it into an organizational knowledge base for future applications. This process is similar to what Nonaka refers to as “combination”. Finally, the document will be discussed in depth when the organization faces similar events that it has to deal with. In the discussion, members elicit their conclusions from the history and apply this experience to coping with the difficulties. Gradually, they will run the process as a routine. This can be seen as the process of “internalization”. After internalization, the explicit knowledge which is recorded in the learning history has been internalized into each participant's knowledge structure to trigger further learning at both individual and organizational levels.

Even though knowledge management has become a very popular concept nowadays and the ways for delivering tacit knowledge suggested by scholars seem to be reasonable, Hammer (1999:134) thinks that the concept of KM is still too vague to put into practice, because most focuses of these arguments are on the “how” rather than the “why” questions. The researcher in this study tries to understand the “why” questions to reflect on the process of dealing with tacit knowledge within the context of a government organization. Two reasons for the researcher choosing the public sector to study are as follows:

- The government organization in Taiwan has lots of routines which enable the researcher to understand the relations between individual knowledge and organizational routines.
- The public sector is somehow viewed as a sluggish organization (the term “sluggish” is derived from interviewees). The researcher tries to understand the

keys to dealing with tacit knowledge in order to revivify the learning environment for public servants.

To know more about tacit knowledge in the public sector, the researcher attempts to clarify the following questions:

1. What is knowledge? Is what is being recorded in the archive system knowledge?
2. How and why can the tacit knowledge be delivered within the public sector?
3. What are my reflections on the above questions?

3. Research Method

Because learning which happens within the individual and organizational levels can be viewed as a socially constructed phenomenon, this study employed the case-study method to explore the learning phenomenon in an organization. In order to explore how organizational knowledge is formed by members' interactions, the semi-structured interview method was employed. Areas explored included how the old-timers teach newcomers, how they use organizational resources to sort out problems in their workplace, and how interviewees' tacit experience facilitates their learning as well as the organizational learning. Data collection was divided into two parts. Part one was for the purpose of understanding public servants' life in the workplace as well as their ways of dealing with tacit knowledge. In this stage, 11 public servants were interviewed, while 3 departments in the central government in Taiwan were visited. Part two was to identify the mechanism of dealing with tacit knowledge in similar organizations, such as ChungHwa Telecom Co., Ltd. which was in the public sector before and has now been privatized. In this stage, 2 administrative departments in the privatized institution were visited and 5 interviewees from the departments were recruited. Table 1 shows the interviewees and the departments visited.

Table 1: Interviewees And Departments Visited In This Research

	Central government	Privatized company	Total
Interviewees	11	5	16
Departments	3	2	5

All the departments provide the public with services and have daily routines, so the researcher can explore the interactions between tacit knowledge and organizational routines. Although the privatized company is not a government organization any more, its operation system still keeps the traits of the public sector. (4 interviewees from ChungHwa Telecom believe that the administrative layer of the company still has the mentality of a public servant). This type of organization can be regarded as an evolutionary type of public sector, which has a more flexible operation system than the traditional government organization has. Experiences in the privatized company may provide a useful reference to improve the public sector, and also provide view points on dealing with tacit knowledge for this study.

Making a comparison between the two organizations, a rough picture about public servants' learning will emerge while factors for triggering learning by way of interacting with tacit knowledge will be discussed. Interviews were tape-recorded and transcribed. Different labels were used to categorize data, while the researchers' interpretations were applied to each item of the selected raw data to clarify understanding. Table 2 shows a sample of data analysis.

Table 2: A Sample Of Data Analysis

Raw data	Reflecting on my understanding	Categories
<p>Mr. WC <i>“What I really worry about is that I cannot speak in detail about what I really want to express. Language has its limitation. One’s experience implies a lot. Some events have happened and I will try to speak out about them, while others are happening and I can’t manage them all.”</i></p>	<p>Mr. WC has an open-minded but considerate personality. He wanted to tell me something but was afraid of hurting others. So, it seems to me that knowledge in an organization is difficult to be delivered because there is judgement in the story that you are telling and this may make people unhappy. Storytelling is inefficient, because spoken language can only express part of the meaning.</p>	<p>Limitation of language Tacit knowledge Read between lines Storytelling</p>

Moving between raw data, labels and interpretations, storylines came out. The storylines then provided the raw data with opportunities for dialogue with the theoretical framework.

4. Discussion

Most people know the proverb that “knowledge is power”. Many managers understand that knowledge embedded in an organization and possessed by the individual are both valuable assets. However, what is knowledge? Although Kleiner and Roth (1997) have demonstrated a “learning history” to transfer tacit knowledge into an explicit form, I am still curious whether or not the documents, the “learning history”, can be defined as knowledge. To clarify, it is necessary to first distinguish the difference between knowledge, information, and data.

4.1. Data, Information Or Knowledge?

According to Schwarzwaldner (1999), data is about raw material while information is a kind of selected data which is always associated with particular meaning. In order to derive knowledge from information, he suggested taking advantage of three elements: key persons, the knowledge sharing process, and technology communities. However, he did not explain accurately the process of obtaining knowledge. Some scholars, such as

Winograd and Flores (1986), explore the process of dealing with knowledge in an organization and view the “information process” as one of the important functions of an organization. They think that the process of interaction between stimulus and response creates knowledge. Knowledge is, according to them, similar to a mediator, which roams between the input and output mechanisms of a computer system. Scholars such as Blackler (1995) and Spender (1996) suggest that organizations create their values through different knowledge processes, including using language, engaging in sensemaking activities, telling stories and forming communities of practice (Wenger, 1998). According to these scholars, the process of knowledge seems to mix visible and invisible practices.

The visible part of knowledge can easily be imitated and replicated. For example, we may use the archive system to record and deliver explicit knowledge so that people can gain the knowledge through studying the documents. This is similar to the function of learning history. Although archives may record useful events for members’ further reference, the explicit knowledge is, in my opinion, similar to “information”. The “information” is, at this stage, not necessarily associated with the individual or the organization, because the documents are meaningless for those who read them without experiencing the process of digesting. In other words, the useful “information” cannot be viewed as a sort of “organizational knowledge”. It is nothing to do with the individual, let alone the organization

I agree that knowledge can be delivered through varied approaches and recording the knowledge in the form of documents can also be viewed as one of the approaches. When an author writes down what he or she has digested, the digested information or experience can surely be called “knowledge” which specially belongs to the author. For those who haven’t experienced the digesting process, the “knowledge” can only be viewed as “information”. Therefore, from the angle of organizational knowledge, the internal or external documents cannot be converted into organizational knowledge without being digested or integrated into organizational daily routines.

4.2. The Process Of Digesting: Socialization And Externalization

Gore and Gore (1999) insist on the necessity of merging the individual’s explicit knowledge into organizational knowledge. It seems that knowledge management is closely related to dealing with information within an organization. Schwarzwalder (1999:63-65) describes knowledge management as a means to derive knowledge from information. Kleiner and Roth (1997) also suggest the learning history method to write down organizational experiences to enrich the knowledge base in an organization.

In this study, Mr. BJ’s department has formally established a mechanism to deal with organizational knowledge. In the department, Mr. BJ, the head of the department, asked employees to note down important issues which always happened so that they could discuss these issues within an informal meeting once a week. He also created chances for communicating with colleagues in order to collect members’ ideas and to identify problems of the organization. The ideas and problems accompanied by members’ daily notes would, in the end, go to an informal meeting.

As far as the informal meeting was concerned, some tasks needed to be done during the meeting. First of all, all members got together to discuss problems that had happened during the week. Then they made sure whether or not the problems had already been

sorted out. For the resolved problems, they would discuss them together to see whether or not the issue was important enough and the process of dealing with the issue was worth being kept in the organization. If they thought the issue was worth recording, Mr. BJ would ask a specialist to record the experience. The results of the recording would be summarized as a formal plan so that employees would have a norm to follow to cope with similar difficulties that might happen in the future. Mr. BJ suggested that the individual could learn something from these discussions and through the process of sorting out problems. In this situation, the results of these discussions produce new routines so as to affect both individual and organizational learning.

The mechanism for knowledge management in Mr. BJ's department seems very similar to the so-called "learning history" suggested by Kleiner and Roth (1997). Learning historians adopt the concept of "community of storytelling" to undertake the work and write down the know-how to keep the "knowledge". This argument seems to echo the point of view of Ardichyili et al (2003) that tacit knowledge is embedded in organizational stories and delivered by organizational members and interactions. However, these ideas are still too Utopian to succeed. Three keys may hinder knowledge sharing by using the method: Other people's feeling, the trait of tacit knowledge and participants' attitude to interactions.

4.2.1. Other People's Feeling May Hinder Knowledge Sharing

Normally using learning history to keep organizational knowledge is partly because the storytellers had at some point participated in particular events or activities directly or indirectly, partly because they can describe the event and are willing to tell the story. However, if the story-teller, the old-timer, has no desire to reveal the truth, how can the experience be expressed exactly? Those old-timers, according to Kleiner and Roth, may be still in the original department and perhaps with the same supervisors. The relationship between the supervisor and the employee keeps going. According to the interviewees, such as Mr. AG, Ms. AM, and Ms. AF, general people do not want to break the relationship, so they prefer saying something positive to describing the event with a neutral attitude. Although the event is gone, the participants still worry about being treated badly if they say something unsatisfactory. However, the unsatisfactory part, the dark side of the event, is usually something crucial.

For example, when Ms. SH told me about her method of training a newcomer, she recalled her suffering referring to her previous supervisor. She complained to me about the supervisor's ways of dealing with official tasks. She said:

"I did not tell this (her experience of suffering) to the newcomer, because I am afraid that she (the newcomer) may leak my thought out of her mouth."

Ms. SH did not want to pass her experience to the newcomer because her previous boss is still in the department and she could detect that the supervisor might get annoyed about her opinion. In another department, Mr. WC also told me that he was very careful about saying something which might hurt other people, especially when the task needed to be done by working with colleagues.

However, there is still someone who is happy to speak out about his or her experience. Mr. WC thinks that teaching newcomers and having discussions with colleagues are valuable

opportunities to enhance his personal abilities in dealing with tasks. This seems to echo what Lightfoot and Martin (1988) refer to as “teaching is learning”. In Mr. KC’s (Mr. WC’s colleague) opinion, Mr. WC has a broad-minded personality, so he is pleased to help others. It seems that sharing or not sharing depends on one’s personality. Nevertheless, I wonder whether or not Mr. WC can truly speak his mind without reticence. Although Ms. SH and Mr. WC are in different departments, they share a similar situation taking note of others’ feelings. This means that other people’s feelings may hinder the effect of knowledge sharing. Because the old-timers reveal only part of truth in the “learning history”, the evidence-based knowledge base would be in vain.

Some “learning histories” will then go to the archive system which provides newcomers with references to study. Although most of the interviewees suggested that their learning was from studying the archive system in the public sector, according to Ms. SH, most key experiences cannot be gained by studying the formal archive system. The experience belongs in particular to the individual and cannot completely be converted into an explicit form.

4.2.2. Tacit Knowledge Cannot Be Externalized Accurately

Another worry about using learning history to externalize tacit knowledge in an organization is the effect of externalization. Tacit experience is difficult to describe, to say nothing of writing it down as a formal document. Hemetsberger and Reinhardt (2006) even argue that “*explicit and tacit knowledge are different facets of knowledge*” and need to be dealt with different approaches. Mr. WC said:

“What I really worry about is that I cannot speak in detail about what I really want to express. Language has its limitation. One’s experience implies a lot. Some events have happened and I will try to speak out about them, while others are happening and I can’t manage them all.”

Because tacit knowledge keeps developing and implies varied meanings, a teller can only externalize a small part of the knowledge by spoken or written language. So, using this way to keep knowledge may not allow the meaning to be delivered so well. This is the reason why Nonaka (1994) proposed the spiral of knowledge to retrieve tacit knowledge from the individual.

In this model, tacit knowledge is originally embedded in the individual. The organization uses four steps including socialization, externalization, combination and internalization to elicit the tacit knowledge and converts the tacit form into an explicit form. Using combination and internalization, the organization integrates the explicit experience into organizational routines so that all the members have a rule to follow to upgrade their original performance to be more effective. Members in the organization will gradually get used to the new routines so that the new routines which are derived from the senior’s experience will be internalized into the individual’s daily performances. Nonaka suggests that the process is going on and on to ensure the tacit knowledge is transferred completely. Some interviewees, such as Mr. KB and Mr. DC, agree with the knowledge spiral, because the model reflects what they are actually doing in the organization. Mr. KB especially indicated that:

“This is very difficult. My job is to maintain and to improve the relationship between the company and the residents. I am retiring, so they (the company) assigned some young people here to learn. But they (the novices) feel that my job is too complicated to manage. They come and they go. So, I am still waiting for a successor.”

Mr. KB’s experience seems to echo what Mr. WC had. Tacit knowledge is very difficult to transfer by means of using spoken language. Even the way suggested by Nonaka cannot work well, because the experience is in a tacit form, which is difficult to deliver completely by spoken language. In other words, the knowledge may include so much that it cannot be understood by only one method. This situation actually echoes what Gillham (2000:30) suggests, that tacit knowledge is hard put to explain or justify. Since it is difficult to explain or write down, Nonaka’s method of externalization is facing challenges.

4.2.3. Learners’ And Mentors’ Attitudes To Interactions

According to Mr. KB, *“It is really a time-consuming job... You cannot win their (the community people) trust without listening to them”*. Mr. KB told me this when he was asked the question *“what is your suggestion to the newcomers who may undertake your work?”* Mr. KB’s words seem to identify the importance of a learner’s attitude. Listening to what the community people want is crucial even if it is really time-consuming. He said:

“They do not have the desire to stand in the residents’ shoes. This is not a job which can always get an instant result. It needs time to make the relationships cohere. They have no patience to do so.”

It seems that the newcomers must deeply understand their customers to get the job done, and it needs time to achieve. However, because the novices have no idea about the customers, they do not have mental preparation to show an appropriate attitude to work.

However, learners’ attitude to learning cannot be completed in itself. It needs the mentor’s practice to make the problem worse. Mr. DC suggests that most Taiwanese do not feel safe sharing their tips with their colleagues especially with those who may have a conflict of interest. In this situation, Nonaka’s suggestion to use socialization to make the tacit knowledge outward is again challenged. Does the old-timer really want to share his or her experience with colleagues or novices?

It is not because a particular person tries to hide the skill to become his or her own “secret weapon” to keep the superior status in the organization, but because he or she wants to protect him or herself from danger (Mr. AH). Why should they contribute their knowledge to the organization? If they tell others about their “survival tips”, they may immediately face the danger of being replaced (Mr. AE). Accordingly, the learner’s and the mentor’s attitudes to interactions are also keys to determining whether or not the spiral of knowledge may work.

4.3. The Process Of Digesting: Combination And Internalization

Even if the organizational know-how may be written up correctly and neutrally, disseminating the explicit knowledge is another problem. Not every employee can really

enjoy studying archives, and not every one's experiences can be integrated into organizational routines. Schwarzwaldler (1999) suggests that establishing an appropriate environment where communication can openly and freely proceed is the core of knowledge management. To improve organizational communication, some scholars such as Zack (1999) advocate taking advantage of IT to support the knowledge management architecture. Zack believes that the effort will not be satisfactory if a company cannot electronically collect, index, store, and distribute explicit knowledge. Coates (1999) argues that the focus should be on what knowledge is available and how to make the knowledge more readily usable by anyone, anywhere at any time. Consequently, some organizations, such as the ChungHwa Telecom Co., Ltd., have built an IT System for KM which enables members to upload their experiences and to download related documents for reference. However, most employees in the organization have no desire to use the system (all interviewees in this study do not like the system).

4.3.1. Building A Culture

Because one's motivation is an internal situation, it is not easy to make sure whether or not one's motivation has been triggered. In order to make employees happy to participate in KM activities, both hardware (facilities of delivering knowledge) and software (the whole situation of knowledge sharing) must be taken into account. Mr. BJ suggested, "*You must build up a culture to direct their way and to make sure they perform*". Mr. BJ's idea seems to be an outside-in design which pushes members in the group to move in a particular direction unconsciously. Nonaka (1994) suggests that the concept of "Redundancy" is one of the important keys to establishing the organizational culture. Redundancy always implies negative meanings, such as waste, repetition, and so on. However, redundancy, in Nonaka and Takeuchi 's (1995) opinion, will reproduce opportunities for communication and reflection so that a common cognition among members will be established and this is the first step to launching a KM organization.

Repetitious communication can also facilitate the delivery of tacit knowledge. Since the information has been disseminated again and again, the meaning of it can be double-checked several times to ensure employees' correct understanding. This argument seems to reflect the facts in the public sector in Taiwan. Ms. AS said, "*You will be familiar with the system very fast, because the tasks here usually happen again and again.*" Mr. AR, the head of a department in the public sector, suggested:

"Public service is a fixed and big system. Most of the routines and processes have been regulated by the law. You can find that the official business happens regularly, so you will be acquainted with the environment very fast."

Because of the overlapping flow of work, members will gradually know other people's expertise and be familiar with the daily routines. Ms. AF and Mr. AW pointed out they knew each other very well even though they were in different departments, because the official business usually goes through both departments.

4.3.2. From Redundancy To Organizational Routines

In the public sector, because large amounts of official business need to be done by division of labor, the government has developed varied work flows to integrate different departments' efforts to ensure a qualified performance. When the work flows are

conducted again and again, organizational routines may come out. The repetitious communications can then be merged into organizational daily routines to strengthen public servants' internal conviction and external connections.

Some scholars suggest that knowledge scattered over the organization will be collected and infused into organizational routines through which knowledge creation may emerge. Bartlett and Ghoshal (1998) believe that routinely diffusing expertise and transferring practices is the only way to link isolated expertise and fragmented knowledge in an organization. The more the members participate in organizational activities, the more new knowledge may be created.

Nonaka's ideas of "Redundancy" and the daily routine in the public sector seem to have explained why the public servants' behaviors can be so unified and why the individual practices in the public sector can be well defined. However, although the mechanism of redundancy may facilitate knowledge delivery, it cannot guarantee the knowledge being shared openly.

Although scholars, such as the above, have identified bright and dark sides of "Redundancy", the idea seems still too simple to put into practice. Mr. AU said:

"Although the process includes different departments and involved lots of clerks, we only do what we need to do. We know each other and sometimes have a chat on the phone....the work flow is so simple that we will sometimes find new solutions to deal with routines."

In other words, the concept of redundancy and the mechanism of routine can only be viewed as "hardware", which is an environment to provide individuals with opportunities for knowledge sharing or storing. The individual within the environment can be viewed as "software", which determines whether the concept of redundancy hinders organizational learning or not. It is the individual who accepts the redundancy mechanism to be influenced by the routines, so that the mechanism can have a positive or negative effect on the individual. However, individuals in the public sector may be so familiar with routines that they have time to reflect on what they have done. Because routine tasks may be so dull for them, they then have the desire to find new approaches to deal with tasks. Accordingly, knowledge management relies not on the hardware but the software, the individual. An individual's tacit experience cannot be transferred into organizational knowledge without individuals' acceptance and reflection. Tacit knowledge needs to be consciously digested from members' doing and experiencing (Hemetsberger and Reinhardt, 2006). This is what Wenger (1998) refers to as "daily sense-making activities".

Redundancy seems to embrace four effects. Firstly, it helps the organization pass tacit knowledge to members. Secondly, it facilitates the process of internalization. Thirdly, it improves members' understanding of each other. Fourthly, redundancy makes varied organizational knowledge cohere so that new understanding may emerge. However, the idea cannot be complete in itself. First, redundancy implies the concept of repetition, which can be very inefficient if every action needs to be re-examined again and again. Secondly, although some know-how may be delivered by the redundant process, learning or not learning depends on the individual's attitude to learning.

4.4. Dealing With Tacit Knowledge

The individual is an important key to transferring tacit knowledge from the individual level to the organizational level. While people are interested in the “information” and pay attention to studying it, they are probably engaging in a learning process. After the process, the individual develops his or her own knowledge that has merged the new information with his or her established knowledge association. Accordingly, for an individual, others' knowledge can not become his or her own knowledge without experiencing a learning process; for an organization, any form of document cannot be called knowledge, unless the information is merged into organizational routines.

Nonaka highlights the importance of building a shared knowledge environment, while Mazutis and Natalie (2008) also assume that dialogue is the core of organizational learning. They all suggest that each employee should be able to easily access the knowledge base, where diverse opinions can be integrated to the whole system. In this situation, different ideas can be effectively exchanged and discussed by members at different levels and with varied backgrounds. Using this way of dealing with tacit knowledge enables the original meaning of the knowledge to be reexamined, developed and even modified. However, there are some difficulties during the process of converting the individual experience to organizational knowledge.

Firstly, although some scholars highlight the importance of having dialogues with all members to create an open communication environment, sharing or not sharing depends on participants' attitudes to interactions as well as their thoughts about other members' feeling. Only when individuals feel that their contribution to the knowledge sharing is more important than their worries, may they be happy to reveal their complete experiences. Only when the feeling of threat derived from particular elements, such as other people's feeling, is gone, can the old-timers feel free to express their feelings and describe the whole stories without any worry.

Secondly, because tacit knowledge embraces diverse meanings, it is difficult to be externalized completely. According to the data, the tacit knowledge cannot be externalized by only spoken or written language. Using diverse approaches to retrieving the diverse meanings from the tacit experience may be a feasible way to deal with this kind of knowledge.

Thirdly, even if the communication environment is open enough, the learners' attitude to learning and the mentors' attitude to teaching may not be satisfactory. How to find methods to motivate learners and get their attention is crucial. How to encourage mentors to truly engage in teaching activities is also important. These thoughts are about getting individuals to accept the role and the tasks.

Fourthly, even if the tacit knowledge can be well externalized, the explicit knowledge still needs some repetitious processes to reshape members' behavior. In the public sector, the redundancy mechanism reminds the individuals of particular know-how again and again so that individuals' behavior is shaped. However, the influence may be so strong that new ideas cannot prosper in the organization. Only when the individual can reflect on him or herself frequently can he or she get rid of the influence of redundancy to develop new understandings to break the limitation.

Accordingly, even though individual learning is not necessarily the main key to forming organizational learning, the individual's desire to share knowledge and his or her attitude

to interactions are important keys to transferring tacit knowledge from the individual level to the level of the organization.

5. Conclusion

Knowledge is formed by the process of digesting. At the individual level, information cannot become one's knowledge without experiencing the process of digesting. At the organizational level, one's tacit experience cannot be transferred into organizational knowledge without being integrated into organizational routines. The key to carrying out both processes of digesting is the individual.

Tacit knowledge can be delivered by the archive system in the public sector. It can be delivered by learning communities and can be noted down as a learning history. However, one's experience implies a lot, it is difficult to deliver simply by written or spoken language. Tacit knowledge can also be shared by storytelling. However, some experiences are so complicated and cannot be expressed by spoken language, while some narrators may detect threats derived from other people's feelings to make them unwilling to tell the truth.

Tacit knowledge can be delivered by apprenticeship. However, the learner's and the mentor's attitudes to interactions determine whether the learning culture or knowledge delivery will be successful. Tacit knowledge can also be shared by organizational routines. However, some may be so used to the daily routines that the chances for creating new knowledge are ignored, while others can reflect on the routines and find new ideas for the organization.

Organizational learning is not necessarily determined by individual learning, while collecting individual learning cannot definitely bring about organizational learning. However, the process of transferring individual experience into organizational knowledge needs the individual to interact with these mechanisms such as learning communities, storytelling and apprenticeship. The individual's acceptance and reflection determine the success of transferring tacit knowledge.

6. References

Ardichvili, A., Page, V., and Wentling, T., 2003. Motivation and barriers to participation in virtual knowledge-sharing communities of practice, *Journal of Knowledge Management*, 7(1): 64-77.

Balla, J., Harty, J., and Andrews, L., 1999. Knowledge management comes of age, *Inform*, 13(7): 22-29.

Bartlett, C. A., and Ghoshal, S., 1998. Beyond Strategic Planning to Organisation Learning: Lifeblood of the Individualised Corporation, *Strategy and Leadership*, 26(1): 34-39.

Blackler, F., 1995. Knowledge, knowledge work and organisations, an overview and interpretation, *Organisation Studies*, 16(6): 1021-1046.

- Coates, J. F., 1999. The Inevitability of Knowledge Management, *Research Technology Management*, 42(4): 6-7.
- Faulkner, W., and Senker, J., 1995. *Knowledge Frontiers: Public Sector Research and Industrial Innovation in Biotechnology, Engineering Ceramics and Parallel Computing*. Oxford: Oxford University Press.
- Finger, M. and Brand, S. B., 1999. The concept of the “learning organization” applied to the transformation of the public sector in M. Easterby-Smith, L. Araujo and J. Burgoyne (eds.) *Organizational Learning and the Learning Organization*, London: Sage.
- Gillham B., 2000. *Case Study Research Methods*, London.
- Gore, C., and Gore, E., 1999. Knowledge management: The way forward, *Total Quality Management*, 10(4): 554-560
- Grant, R. M., 1996. Toward a knowledge-based theory of the firm, *Strategic Management Journal*, 17: 109-122.
- Hammer, M., 1999. How Process Enterprises Really Work, *Harvard Business Review*, Nov. Dec.
- Hemetsberger, A, and Reinhardt, C., 2006. Learning and Knowledge-building in Open-source Communities, *Management Learning*, 37(2): 187-214.
- Kleiner, A., and Roth, G., 1997. How to make experience your best teacher, *Harvard Business Review*, Sept–Oct: 172-177.
- Lightfoot, M., and Martin, N., 1988. *The Word for Teaching is Learning*, London: Heinemann.
- Mazutis, D., and Natalie, S., 2008. Leading organizational learning through authentic dialogue, *Management learning*, 39(4): 437-456
- Moorman, C., and Miner, A. S., 1997. The impact of organizational memory on new product performance and creativity, *Journal of Marketing Research*, 34(1): 91-106.
- Nonaka I. And Takeuchi H., 1995. *The Knowledge Creating Company*, Oxford: Oxford University Press.
- Nonaka, I., and Takeuchi, H., 1995. *The Knowledge-creating Company: How Japanese Companies Create the Dynamics of Innovation*, Oxford: Oxford University Press
- Nonaka, I., 1994. A dynamic theory of organizational knowledge creation, *Organization Science*, 5 (1): 14-37.
- Polanyi, M., 1975. Personal Knowledge, in Polanyi M. and Prosch H. (Eds.) *Meaning*, Chicago: University of Chicago Press: 22-45.
- Schwarzwalder R., 1999. Librarians as Knowledge Management Agents, *Econtent*, 22(4): 63-65.

Senge, P. M., 1990. *The Fifth Discipline: The Art and Practice of the Learning Organization*, London: Century Business.

Spender, J. -C., 1996. Making knowledge the basis of a dynamic theory of the firm, *Strategic Management Journal*, 17: 45-62.

Spender, J. C., 1996. Making knowledge the basis of a dynamic theory of the firm. *Strategic Management Journal*, 17: 45-62.

Wenger, E., 1998. *Communities of Practice: Learning, Meaning and Identity*, Cambridge: Cambridge University Press.

Winograd, T. and Flores, F., 1986. *Understanding Computers and Cognition*, Norwood, NJ: Ablex.

Zack, M. H., 1999. Managing Codified Knowledge, *Sloan Management Review*, 40(4): 45-58.

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