Analysis of Tacit Knowledge and Its Dominant Path

ZENG Lijuan[a],*; TANG Xiaoying[b]

Abstract

In the process of realizing knowledge value, the sharing
and dissemination of tacit knowledge are important paths.
The dominant of tacit knowledge can facilitate the sharing
and innovation of knowledge, improve the innovation
and competitiveness of organizations, and enhance the
creative potential of individuals. Based on analyzing
the tacit knowledge, researching its connotation and
characteristics, and discussing and analyzing the relation
of tacit knowledge and explicit knowledge, this paper
discusses the dominant path of tacit knowledge.

Key words: Tacit; Explicit; Knowledge; Dominant;
Path

INTRODUCTION

Today with the continuous development of science, the
integration and innovation of knowledge has drawn
increasing attention of people. As we are constantly
improving our knowledge schema, sometimes we may
ignore the role of "intuition" in knowledge learning. In
fact, the so-called "intuition" is not a kind of thinking
without foundation, but a kind of judging mode formed
with a long time of accumulation of experience.
Everybody as an individual has a certain "intuition", as
the communication between individual and individual
occurs, such kind of "intuition" will influence each other,
and then develop continually, finally formed intuition
network is "tacit knowledge".

1. TACIT KNOWLEDGE: THE TRANSITION OF HUMAN COGNITIVE SIGHT FROM DOMINANT TO RECESSIVE

1.1 The Proposing and Describing of Tacit Knowledge

Knowledge is the crystallization of human intelligence,
in the course of human existence and development,
knowledge indicated people's awareness of world
and transforming of world. For a long time, people
have been confused about the special presentation
mode of knowledge, for example, much knowledge
can be expressed logically by nonverbal message,
literals, and symbols. China's Lao Zi once felt
indescribable about the objectively existed
"Taoist", so called "the beginning of everything
is nameless, the mother of everything is named", which
was the description of silent phenomenon of knowledge
in the Eastern at the earliest period. In the Western,
Democritus thought that knowledge is of two kinds: one
is real, the other is ambiguous, and the real knowledge
is obtained by reason, while ambiguous knowledge is
obtained by sense, which is fuzzy and can not be clearly
expressed. The ancient Greek philosopher Aristotle
discussed these two kinds of knowledge, experience
and technology, in his "metaphysics", he indicated that
experience is a kind of practical skills, it is individual,

accidental and cannot be taught; technology is the result of rational thought, it is of universality, inevitability, and can be taught. Aristotle's theory has provided philosophical basis for the later distinction between tacit knowledge and explicit knowledge. Afterwards, some scholars also have done similar thinking and exploration, but on the human epistemology before the middle of the 20th century, people hadn't done strictly logical distinction between two kinds of knowledge. Tacit knowledge has been existed in the form of shadow in the field of human knowledge until Polanyi let us see its true features.

In 1996, Michael Polanyi put forward the concept of "tacit knowledge" in a philosophy works entitled "Personal Knowledge", he divided knowledge into two categories—explicit knowledge and tacit knowledge, explicit knowledge is a kind of knowledge can be expressed by written text, charts and mathematical formula; tacit Knowledge is hidden in the hands and minds of knowledge main bodies, reflected in abilities, knacks, skills, insight, experience, mental models, and understanding of group members, which are difficult to express accurately with characters and languages, most of them are hard to be encoded or even can not be encoded (Szulanski, 1996). Tacit knowledge, also known as implicit knowledge, which is not words but meanings. This kind of knowledge existed in the individual knowledge structure with a large number, which is even more than that "people can express in words". The famous American psychologist, Robert J. Sternberg further analyzed the tacit knowledge from the perspective of intellectual growth, he thought the tacit knowledge was action-oriented knowledge, its acquisition generally did not need the help of others, and it could enable the individual to achieve the personal goals (Sternberg, 1999). The acquisition and use tacit knowledge is very important, it helps the individual increase experience, improve the behavioral efficiency. About the definition of tacit knowledge, domestic and foreign scholars have given their own interpretation, although the expression is not same, but the basic idea is consistent, namely the tacit knowledge is empirical knowledge of highly personal, which is formed by people's long-term accumulation in social practice, hard to express in words, and difficult to share, it exists in the individual behavior itself, relies on experience, intuition and insight, and it is not easy to transmit as being subjected to its environment, usually characterized by experience, impression, skills, expertise, inspiration, insight, foresight, beliefs, values, team coordination, organizational culture, etc. Tacit knowledge is an important part of human knowledge; it constitutes a complete individual knowledge system together with the explicit knowledge. The raising of tacit knowledge makes people get a new leap of the framework and acquisition of knowledge, which has provided new impetus for the vision formation, and innovation and development of human knowledge.

1.2 The Characteristics of Tacit Knowledge

According to the description of Polanyi, compared with the explicit knowledge, the tacit knowledge has the following features: (a) Tacitness: Tacit knowledge is not as easy as explicit knowledge that can be expressed clearly or explained logically with numbers, formula and scientific rules, it belongs to knowledge of the individual mental model, deeply rooted in individual heart, and it is hard to be obtained by lexical learning and clear teaching. Tacit knowledge is only acquired by practice, such as imitation, face-to-face communication, watching videos, masters training apprentices, "learning-by-doing" and so on. (b) Individuality: Tacit knowledge is established on the basis of individual experience and composed of a number of intangible factors, such as personal technical skills, working knacks, thinking mode and value orientation, it is individual proprietary knowledge difficult to communicate and share. (c) Situationality: Tacit knowledge mostly comes from the frequent accumulation in practice, it is a deposit of personal experience; and it is often stimulated and triggered by the occasional knowledge signals in special conditions to develop different or never experienced new feeling, so the generation of tacit knowledge is often accompanied by accidental. (d) Stability: Compared with the explicit knowledge, the tacit knowledge once became personal deposits, just as the effects of ideas, beliefs on human which are profound, lasting and indelible, becoming the thrust of individual behavior. (e) Cultural: Compared with the explicit knowledge, the tacit knowledge has strong cultural characteristics; it is lined with concepts, symbols, knowledge system shared by people with traditional culture (Peng, 2005, p.98). The tacit knowledge formed when people are exploring and solving problems often has imprints of rules and habits, preferences and attitudes, tools and techniques under the cultural background, just as the Chinese use chopsticks to take food skillfully , while the westerners use knives and forks skillfully, they all have their own national habits. (f) Practicality: The acquisition of tacit knowledge needs more practice and experience, like the folk proverb says that: you can lead a horse to water, but you cannot make him drink. The individual should try to weigh and consider in the practice and understand the connotation of knowledge.

2. FROM TACITNESS TO EXPLICITNESS: THE TRANSFORMATION AND OVERFLOW OF KNOWLEDGE RESOURCE

2.1 The Relationship of Tacit Knowledge and Explicit Knowledge

All explicit knowledge is rooted in tacit knowledge, tacit knowledge is the foundation of explicit knowledge,

and all explicit knowledge has its tacit root. Though tacit knowledge is not as easy as explicit knowledge to describe and communicate, it has the priority in the process of formation of knowledge. Polanyi indicated that explicit knowledge must depend on the tacit understanding and application; therefore, all knowledge is either tacit knowledge or rooted in tacit knowledge, a kind of complete explicit knowledge is incredible (Polanyi. 1969, p.144). Tacit knowledge as knowledge capital and intelligence capital, just as the gross roots system for providing nutrients, explicit knowledge is the fruit on the tree. During the growth process of explicit knowledge, it depends on the tacit knowledge such as experience, knacks, scientific thinking mode, and cultural values, making the individual or organization produces correct scientific and cultural knowledge. The application and understanding of explicit knowledge is with tacit thinking, the process of screening, selection and filtering of explicit knowledge by individuals contains high-sensitive intuitive judgment and decisive decision thinking, so as to improve the use value of explicit knowledge. It thus clear that tacit knowledge has played a guiding role in the process of value exploration of explicit knowledge, and it becomes a key link in the process of decision making and problem solving.

On the other hand, the acquisition process of tacit knowledge is the process of cognitive activities under the guidance of explicit knowledge, the starting point of individual cognition is the environment of times (natural and social) it was in and the explicit knowledge environment, namely the tacit knowledge is based on the explicit knowledge that the individual contacted with. In the process of question exploration, the individuals use the explicit knowledge to test, revise and apply solutions constantly, and because of environment of times and problem situation, it makes the recessive amount of knowledge change, the structure update, in this point of view, the individual tacit knowledge is derived from the combination of explicit knowledge and personal practice.

In conclusion, from the point of the entire human, explicit knowledge and tacit knowledge are two important components of the knowledge system, are two sides of the same coin. Explicit knowledge is an explicit human knowledge by removing the personal factors; it shows the human collective wisdom (*Russell human knowledge*, 2003, pp.1-5); while tacit knowledge is the knowledge from a personal point of view. Though they are with different display modes, they are not repulsive, they may interchange and promote each other under certain conditions, and they both promote the progress of humanity.

2.2 Explicitness of Tacit Knowledge

Knowledge is the achievement of human cognition, the value of knowledge is that it can provide human with wisdom and strength. For organizations, the flow and sharing of knowledge is the driving force for the development of organizations. Tacit knowledge belongs to the individual proprietary knowledge, and it is difficult to describe and transmit. In order to make tacit knowledge become an organic part of knowledge organization system, the strategies will be taken to make it public and explicit. The explicitness of tacit knowledge, in brief, is the process of individual tacit knowledge being communicated and shared. In this process, people converted their experience, intuition and imagination into explicit organizing mode that can be expressed by languages, which improves the perceptual knowledge in human brain to rational knowledge and raises the collective tacit knowledge to the principle can be expressed and agreed by people (Yang, 2004, p.36). The explicit process of tacit knowledge is to analyze from the perspective of knowledge management and use to prompt the sharing of knowledge and get the value and knowledge innovation. From psychological point of view, the explicitness of tacit knowledge is favorable for individuals to understand their own psychological activity and it has great role in promoting their creative potential.

For the transformation of tacit knowledge to explicit knowledge and achieving sharing in organization, Japanese scholars Nonaka proposed "SECI" model theory of knowledge transformation, the theory starts with the relationship between tacit knowledge and explicit knowledge, putting forward the four patterns of knowledge creation and transformation processes: the first one is socialization stage , which refers to the mutual spillover and sharing of the individual tacit knowledge in organization, making knowledge from tacitness to tacitness; the second one is externalization stage, which refers to that transform tacit knowledge to other patterns easily understood by people and form transmission effects, making knowledge from tacitness to explicitness; the third one is integration stage, which refers to that make fragmentary knowledge systematization and regularization, making knowledge from clearness to clearness; the fourth one is internalization stage, which refers to that individuals or organizations absorb tacit knowledge and internalize it to explicit. The SECI model reveals the dynamic process of tacit knowledge and explicit knowledge and shows a spiral state, which provides a set of suitable analytical paradigm for transformation of tacit knowledge and explicit knowledge (Chu & Tang, 2007, p.95). The theoretical value of Nonaka is that the explicitness of tacit knowledge may be realized. He pointed out externalization is the process of expressing tacit knowledge as formal concept by means of metaphor, analogy, concepts, assumptions, or model, transform the valuable tacit knowledge in the whole organizations to clear knowledge that can be expressed easily and make it can be shared. Nonaka specially emphasized that the enlightening role of metaphor and analogy, establishing relationship between two unrelated things by means of

metaphor and analogy, transplanting the concept meaning of known familiar objects into unknown innovative objects to weaken the unpredictability and clear the concept meaning of innovative objects, finally set up the schema model. Externalization mechanism shows that tacit knowledge has expressiveness and transferability; but its realization should be with reasonable and effective expression tools. Norwegian philosopher H. Grimen made some additions to this theory, he stated that "in terms of the expression of knowledge, action as well as language, is the fundamental expression mode. Tacit knowledge can not fully express with language, but it can be expressed through actions" (Yu, 2003, p.52). He intended to illustrate that tacit knowledge can be learnt, taught, accumulated and criticized by actions, facial expression and images and other non-verbal expression modes, not only in the form of languages.

Furthermore, the German scholar Georg Von Krogh proposed strategies and steps of prompting the tacit knowledge to be explicit in his book Enabling Knowledge Creation: How to Unlock the Mystery of Tacit Knowledge and Release the Power of Innovation (Wen & Wang, 2005, p.11), the strategies are: sharing the tacit knowledge, creating new concepts, verifying the proposed concepts, establishing basic model, showing and spreading knowledge. The steps are: (i) forming the knowledge of vision: evaluate and analyze the knowledge objectives in advance, organize expectant the knowledge frame. (ii) arranging intellectual conversations: proceed language communication in a variety of flexible ways, including speeches and conversations, actively encourage staff to participate in the discovery of knowledge. (iii) stimulating activities of knowledge: carry out a series of activities that can help tacit knowledge be spread and explicit, so that to catalyze the creation of knowledge. (iv) creating a suitable environment: build four kinds of interactive knowledge sharing space — individual face-to-face space, individual visual communication space, collective interactive talking space and collective demonstrative interaction space, to takes everyone to learn tacit knowledge in a dense academic atmosphere. (v) making personal knowledge globalized: stimulate the motive of knowledge of individual, promote the sharing and completion of knowledge, make knowledge spread and apply to all over the world.

3. THE PATH OF TURNING TACIT KNOWLEDGE INTO EXPLICIT

3.1 Establishing an Incentive Mechanism of Knowledge's Innovation to Ensure the Efficient Conversion and Exchange of Tacit Knowledge

If tacit knowledge need to be exchange swimmingly, there is a important way — establish a effective incentive system in the individual organization environment,

excavate the potential of individuals in a maximum way, exploit the tacit knowledge of intra-organization's individual and make it to be explicit. Tacit knowledge is a personal intelligent resource, everyone has a consciousness of benefit protection, so that one is willing to contribute the advantaged experience and skills or not, depends on the policy support of the manager. Thus, the organization has to adopt a balanced and efficient combination of incentives, to promote tacit knowledge to be flowed, exchanged, shared and created. The first one is to promote from the point of view of material benefits, build the incentive system of Distribution according to knowledge contribution, specific measures are adopting knowledge of pay system, knowledge stock options system and so on, to stimulate in recent and forwards (Tang & Tian, 2013, p.143). The second one is to promote from the point of view of spiritual motivation, person-position fit according to the rate of knowledge contribution and value of knowledge, increase the impetus of knowledge sharing of individual; award the positive people, satisfy the sense of social respect and sense of achievement of everyone. The third one is to foster the consciousness of interests between individuals and organization, make the members toward the direction of knowledge sharing by giving right, responsibility and trust; formulate the goal of development of individuals and organization, motivate members to regroup and create knowledge and promote the cohesion force and knowledge stock of organization.

3.2 Establishing Study-Type Organization Culture, Constructing an Atmosphere Tacit Knowledge Can Be Made Explicit

If the scattered, intersected tacit knowledge need to be assembled, it is important to build a favorable study-type organization culture in organization environment, adhere to people-oriented, base on the principle of knowledge leading, attract and encourage more members to take part in the discover and spread knowledge activities, promote the integration and creation of knowledge. Building a study-type organization culture and promoting tacit knowledge to be made explicit, there are three consciousness: First, the culture is of experience sharing, when the organization is managing knowledge, a favorable atmosphere that can study, communicate, share and create should be built, so that members are willing to share and exchange their ideas and insights. And then, the culture is encouraging to study, the organization encourage members to try to create and discover, to summarize revelation or experience in the ever-changing process, to improve the creativity. Finally, the culture is a kind of trust and cooperation culture. It is not a simple information transfer that the organization convenes members to have a formal discussion or train, but to make them understand the benefit principle: not only can release the potential, but also acquire knowledge, adjust the structure of knowledge and promote the intelligence

development. Among them, the trust relationship between the knowledge exchanger is important, it is the premise of exchanging knowledge successfully, and also is the foundation of good cooperation, members are willing to contact closely and share their tacit knowledge which is having a competitive advantage, so that to improve the quality and success rate of explicit. There are three ways to achieve study-type organization: the first one is to construct platform for the exchange of knowledge like BBS or internal Internet network, to open up the path for spreading the fresh and valuable information; the second one is to develop a variety of exchanging activities, such as convoking seminars, symposia and on-site guidance, to generate complementation between individuals. The third one is to hold all kinds of vocational training at regular intervals, it can make members gain more knowledge and skills to reduce the gradient between provider and receiver. To sum up, the true meaning of building a study-type organization culture is to construct a relaxed atmosphere for studying and communicating, it is beneficial to members to share knowledge and build a nice study habit and strong learning atmosphere, so that to improve the learning initiative of whole organization.

3.3 Using Advanced Information Technology to Build a Knowledge Sharing and Transferring Management System

Modern information technology supports the knowledge management system to run efficiently. Using advanced information technology to manage knowledge can improve the efficiency and speed of knowledge update and spread. Some of the intelligence technology in currently provide ways for tacit knowledge be made explicit , such as self-service, document workflow, inside and outside the site content management, search engine and full-text search, the data warehouse and online analysis, artificial intelligence, data mining and knowledge mining etc.. (Wang, 2010, p.45). As it turns out, these ways accelerate the knowledge exchange between organizations, and discover the hidden knowledge, improve the sharing rate and utilization rate of tacit knowledge. Thus, modern knowledge management should take full advantage of the internet, intranet, knowledge sharing module, knowledge base, data mining and so on, to achieve the socialization and externalization of tacit knowledge in a wider range. Accelerating the explicit tacit knowledge speed by building a networked expert system; integrating the experience, skills, inspiration, and knack with the help of data mining and analysis capabilities of softwares, building a specialized database of tacit knowledge and building a internal knowledge exchanging ways and combination path to accelerate the exchanging, sharing and creating process of tacit knowledge. There are also other technology can help catch and share tacit knowledge like video interview, E-mail and cooperative office system. Now there is some scholar proposal that Tacit

knowledge acquisition technology based on knowledge map, the method is to express related area knowledge by building a multipage type knowledge map. Knowledge map is the important tool of explicit tacit knowledge process, designing and achieving an user-centered visual acquisition tool of tacit knowledge, to improve the access rate of tacit knowledge and promote knowledge to be shared and spread (Zhang, Wang, & Wei, 2009, p.19). So, this advanced technological means can be used on helping organize and achieve the dynamic transformation between tacit knowledge and explicit knowledge.

3.4 Creating a Way to Express the Explicit Tacit Knowledge

Tacit knowledge is hard to be coded in certain situations, but it does not mean it can't be transformed into other presentation to make it appeared by showing itself. I think there are three ways to achieve it: The first one is to use Osborne brainstorming method, members can try them best to express their point of views and strategy in a free atmosphere, also can create more new tacit knowledge by stimulation of other wisdom and express it in languages. Among them, those words which are accurate and easy to be understood might be the carrier of tacit knowledge (Wen, 2005, p.135). The second one is to use comparative state to express the connotation of tacit knowledge, it is said that using metaphor and analogy to make tacit knowledge be specific and visible. Comparative state is a kind of special way to express tacit knowledge, it is one of the most effective ways (Wang, Li, & Jin, 2005, p.39). Using metaphor and symbolic language can get twice the result with half the effort when 39 individuals are expressing their intuition and inspiration. The third one is to express tacit knowledge with the emotions expressed in perfect harmony, emotional factors can enhance the communicating effect of tacit knowledge in some informal environment, it can be easier received in a frank and exoteric language.

CONCLUSION

Tacit knowledge always exists as fundamental core competitiveness of organizations. Thus, we should get more tacit knowledge by learning, and share it by spreading and exchanging, playing its proper value in order to promote the healthy development of human knowledge. Tacit knowledge widely exists in everywhere. It is an obbligato knowledge system. Only can massy tacit knowledge help us learn other explicit knowledge better. Thus, it is necessary to turn tacit knowledge into explicit. We should transform tacit knowledge reasonably according to its specialty, and make it easier to be understood. Tacit knowledge will become a new power of creating knowledge by spreading and applying widely in this way.

REFERENCES

Chu, J. X., & Tang, S. K. (2007). Base on insight learning model Q-SECI and the application research. *Scientific Research Management*, (4), 95. (in Chinese)

Peng, L. H. (2005). Tacit knowledge's definition, characteristics and classification. *Xianning College Journal*, (5). (in Chinese)

Polanyi. (1969). *Knowing and being*. Routledge.

Russell human knowledge. (2003). (J. Y. Zhang Trans.). Beijing: Commercial Press.

Sternberg, R. J. (1999). *Successful intelligence*. Shanghai: East China Normal University Press.

Szulanski, G. (1996). Exploring internal stickiness: Impediments to the transfer of best practice within the firm. *Strategic Management Joumal*, 17(Winter specal issue).

Tang, W., & Tian, R. X. (2013). The connotation, intrinsic of tacit knowledge and the explicit strategy. *Lan Tai World*. (in Chinese)

Wang, L. J. (2010). The theory of tacit knowledge management strategy of knowledge enterprises. *Economic Vision,* (1), 45. (in Chinese)

Wang, Q., Li, Z. X., & Jin, F. (2005). Analyze of individual tacit knowledge evaluation index based on Chinese traditional mode of thinking. *Scientific Progress and Countermeasures*, (7), 39. (in Chinese)

Wen, S. M., & Wang, J. M. (2005). The pre-test of explicit tacit knowledge. *Journal of Suzhou University (Philosophy and Social Sciences Edition)*, (1), 11. (in Chinese)

Wen, S. M. (2005). *Study of explicit tacit knowledge* (Doctoral dissertation). Suzhou University. (in Chinese)

Yang, F. (2004). A discussion of making tacit knowledge be explicit mechanism in knowledge management. *Modern News*, (10). (in Chinese)

Yu, Z. H. (2003). Studying tacit knowledge from expression angles. *Philosophical Investigations*, (5). (in Chinese)

Zhang, Y., Wang, J. R., & Wei, Y. Y. (2009). Design of base on the tacit knowledge of map get system. *Microelectronics & Computer*, (5), 19. (in Chinese)