A Model of the Enterprise Knowledge Creation Mechanism

CAO Zhoutao
School of Business Administration, South China University of Technology, P.R.China, 510640

Abstract: The existence and developing dynamic of enterprise lies much in the enterprise knowledge and its creation. A sound management of enterprise knowledge can facilitate the sharing and creation of knowledge, and improve the utility rate of knowledge source as well. Based on the analysis of characteristic of enterprise knowledge and several theoretical models of knowledge creation, this paper explores the process of knowledge creation and the corresponding factors, and proposes to construct a mechanism of enterprise knowledge creation.

Keywords: Knowledge characteristic, Knowledge sharing, Knowledge creation

1 Introduction

In an era of intellectual economy, the focus of enterprise management has shift from things to people and knowledge—a reflection of a return to humanity in managing art. This is because the production, expansion and application of knowledge have turned into the fundamental dynamic of economic development, and enterprises’ ability of transferring knowledge is vital to their survival. An efficient way of transferring knowledge is of great importance to improving the competitive advantages of enterprises (Kogut and Zander, 1992). Most scholars agree that the creation and sharing of enterprise knowledge constitute the foundation of enterprises’ ability to gain a competitive advantage. However, the creation and transfer of enterprise knowledge couldn’t take place in vacuum. Such process only takes place under certain conditions, and demands sufficient support from the managing level. The issue of how to innovate enterprise knowledge in and among enterprises and how to sustain such creation has become a key research topic for present enterprise management theory studies and application.

2 Characteristics of Enterprise Knowledge

Since Polanyi separated knowledge into tacit and explicit, other scholars has further explored the understanding and categorization of knowledge. Nonaka and Takeuchi (1991) also differentiate tacit knowledge from the explicit, and they consider the one actually functioning inside the organization is mostly the tacit knowledge. Collins (1993) classifies enterprise knowledge into four categories: abstract knowledge, underlying knowledge, coded knowledge and imbedded knowledge. Carayannis (1999) merge knowledge, cognition, and learning with the use of dynamic and systemic concepts, and thus further deepens the understanding of knowledge. Enterprise knowledge is different from other sources such as soil and capital: it can be shared, increased by degree and value-added, and besides these, it also has the following three important characteristics: situational imbedded, creative and path-dependent.

(1) Situational imbedded. Enterprise knowledge comes into being under certain situation. The situational imbedding means when enterprises apply knowledge and transfer knowledge, they must take situational factors into consideration. Gupta and Govindarajan (1991) in an analysis of knowledge flow inside international corporations, define the major situational variables in three aspects: Task situation, structure characteristic and behavioral requirements, and explore the relationship between these three kinds of situational variables and knowledge flow. By analyzing the situational variables in knowledge

---

1Supported by “the Fundamental Research Funds for the Central Universities, SCUT”
transfer, Xu Jinfa (2003) suggest five situational dimensions of enterprise knowledge, including culture, strategy, organizational structure and process, environment, technology and operation.

(2) Creative. Knowledge is ever expanding, accumulating and renewing. The creativity of knowledge indicates a complicated process with constant trial and error, and its implement is preconditioned by the monopoly appropriation. How enterprises innovate knowledge, i.e. how they acquire, create, expand and apply knowledge, becomes a more and more important issue for acquiring and keeping a competitive edge in the latest intellectual economy.

(3) Path dependent. The knowledge that enterprises accumulated in the past will have an influence on their choice and conduction of subsequent activities. The path dependency is the result of enterprise’s rational choice, and will have two effects in general: keeping the enterprise on a long-term competitive ability; driving it into a ‘knowledge locked’ corner.

All in all, knowledge is dynamic, ever-changing and ever-renewing, and closely related with a particular enterprise and its vision. Knowledge management not only should concern itself with the stock knowledge (static) of the enterprise itself, but also the effect and efficiency of knowledge integration and application (dynamic).

3 The Process of Enterprise Knowledge Creation and Corresponding Factors

Knowledge creation is a communication and exchange process of tacit and explicit knowledge between different levels inside the enterprise and among the enterprises. The newly produced knowledge will transfer from one person/team to another person/team, or it will be saved as a unity in personal, team and organizational level. The former is ‘knowledge transfer’ or ‘knowledge flow’, while the latter is ‘knowledge storage’ or ‘knowledge repository’.

Through assaying several models of knowledge creation, this paper explores knowledge creation is a multi-stage dynamic process, including knowledge diffusion, knowledge learning and knowledge integration. The framework shown in Figure 1 integrates the process and key factors that can lead to more effective knowledge transfer in organizations.

![Figure 1 The Process and Key Factors of Effective Knowledge Creation in Organizations](image)

(1) Enterprise setting. This factor includes three areas – organizational culture, structure and technology. The infection of organization structure to knowledge transfer can embodied in that some organization structure support some knowledge transfer much more, but others impede knowledge transfer. Generally speaking, the role of formal organization structure is limited in knowledge transition, but the role of informal organization to transition and share tacit knowledge is obvious. Many aspects in organization culture have largely infection to knowledge transfer, such as the encourage of creation, the endure of mistake, the development of communication network. Information technology is essential to
support a change to a culture of openness and accessibility to information critical to problem solving. Technology has to facilitate horizontal communication and make it seamless and easy for employees to share and access information and knowledge databases (Swee C. Goh, 2002).

(2) Types of knowledge. Tacit knowledge is personal, it is hard to formalize and communicate to others. It is also generally more complex, existing in the mental models and expertise gained over time and through personal insights. This suggests that tacit knowledge may be best transferred through more interpersonal means and using processes that are less structured. Some examples are mentoring, teamwork, chat rooms, personal intranets, and opportunities for face-to-face conversations such as group dialogue or personal reflections on experiences and lessons learned.

Explicit knowledge is what is written or recorded in manuals, patents, reports, documents, assessments, and can be readily codified, articulated, and captured. This suggests that explicit knowledge can be transferred through more technology-driven, structured processes such as information systems, Lotus Notes, and similar mechanisms such as a shared best practice database (Hansen et al., 1999).

4 A Model of Knowledge Creation Mechanism

According to the theory of enterprise knowledge, enterprise in essence is a learning system of acquiring, sharing and utilizing knowledge, and the knowledge stock and structure is the fundamental decisive factor for enterprises’ performance. Thus, to improve their performance and core ability, enterprises need to construct a micro-mechanism that is able to absorb, share and innovate knowledge movement efficiently.

Based on the above analysis of the characteristics and process of knowledge creation, this paper expounds the mechanism promoting knowledge creation, including organization management promoting mechanism and information management technology supporting mechanism, that is to combine people intercourse network with information technology network, then to facilitate organization learning and knowledge creation. The organization management promoting mechanism includes knowledge strategy perspective, learning culture, flexible organization structure and e Organizational learning mechanism, and the information management technology supporting mechanism mainly refers to the enterprise knowledge network platform that enterprises use to share and innovate knowledge, including the enterprise internal knowledge network and enterprise external knowledge network, as seen in figure 2.

![Figure 2: The model of enterprise knowledge creation mechanism](image_url)

4.1 Establishing knowledge strategy perspective

Knowledge strategy perspective is to establish an conceptual vision for knowledge that an enterprise need to explore and utilize the structure of human resources, and then this vision is transformed into an executable management system. The aim of the knowledge management strategy is to pursue the combination of knowledge, organizational motives and individual behavioral supports.

In order to create value through the activity of knowledge creation, the enterprise needs to make strategy scheme to ensure its development towards the direction of knowledge that it must obtain. Knowledge perspective strategy stipulates the value system of the enterprise, according to which the enterprise
assesses, proves and judges the quality of knowledge created. This knowledge system, together with the regulations, everyday business work and technical ability of the organization, determines what kind of knowledge is required, needs to be created, and should be preserved.

4.2 Cultivating learning organization culture
A considerable part of enterprise core knowledge lies in the cultural idea acknowledged by the organization. The interchange of various kinds of enterprise knowledge, and the spiral propulsion and creation of knowledge and ability lie in whether enterprises encourage and support the culture of knowledge sharing and creation and incentive mechanism. As a result, in enterprise knowledge management, the first thing to do is construct an organization culture that encourages organizational learning, and knowledge creation, so as to promote the improvement of organizational learning ability and the exchange and sharing of knowledge. Enterprise should encourage and drive employees with different knowledge structures to share and exchange their knowledge from a multi-angle and multi-level perspective, so as to expand the space of knowledge creation, and thus bring potential benefit. However, in the league of knowledge, enterprise should pay attention to the cultivation of a pervasive enterprise culture, and thus enhance the cost of copying the core knowledge for their competitors.

Secondly, enterprise should set up an assessment and feedback system, an incentive mechanism that rewards employees that actively take part in the process of knowledge transfer, sharing and creation. Thus it can be ensured that there is enough enthusiasm and momentum for active exploitation of knowledge source inside the organization, and thus makes the enterprise a learning organization.

4.3 Constructing flexible organization structure
As a mechanism for knowledge integration and creation, when conducting the design and creation in structure, Enterprises should give considerable thought to improve the ability of organizational learning and knowledge creation. The traditional pyramid structure is a rigid one, emphasizing the explicit level inside the enterprise, and the line between fundamental employees and middle management employees, and senior management are clearly defined. Such organization structure block the knowledge flow inside the enterprise, and leads to a lost of tacit knowledge, an important intellectual asset inside the employees. Comparing to the former, flexible organization structure has following advantages: emphasizing democracy, encouraging positive and creativity, condensing the time and space of knowledge, avoiding the lost of knowledge. In order to improve the organization knowledge sharing, creation, and the efficiency of organization decision-making, the creation of organization structure needs to take various elements into consideration, such as strategy, technology and culture etc., to construct a flexible, flat, networked, and edge-vague knowledge league, which contains organization design with a core knowledge flow that deals with material processing and information processing.

4.4 Constructing organizational learning mechanism
Organizational learning is an efficient way for enterprises to create, transfer and share internal knowledge, and a key for absorbing external knowledge. Enterprise can give employees on work/off work training inside the corporation. Employees can switch their posts, and thus have a better understanding of different post and relative knowledge—it is especially helpful for experienced employees’ learning of tacit knowledge.

For there is lots of tacit knowledge inside the enterprise, besides explicit process such as on-work training, enough attention should be paid to the tacit process of learning, that is sharing and creation of acquiescent knowledge. Such process is especially important to an enterprise, and requires sufficient communication and cooperation among departments, teams and personnel, especially team learning, for it is the only way leads to the sharing of an efficient tacit knowledge sharing.

4.5 Building organizational knowledge network platform
Enterprise knowledge network includes the enterprise internal knowledge network and enterprise external knowledge network. An enterprise internal knowledge network constructed helps employees finding momentum for acquiring and sharing knowledge with others, and a way to transfer knowledge as well. Constructing a pervasive knowledge coordinated system that puts the outcome of all the learning activities on the network in the form of experience database and knowledge platform, will help facilitating the transfer, exchange and sharing of knowledge. This direct knowledge interaction on network platform, help employees to code their unencoded knowledge and create opportunities for integrating individual knowledge, and create new knowledge and collective knowledge.

The competition in intellectual economy is a contest of enterprise knowledge creation promulgation and application, and thus requires a constant opening-up to outer environment and a construction of enterprise external knowledge network, getting out of the ‘knowledge locked’ corner, and realize the maximum value of the enterprise’s core ability. Enterprise external knowledge network includes supply chain network, client network, cooperation network, competitor network, government department network and expert network as well.

The construction of enterprise knowledge league leads to the trend of limit blurring between enterprises and environment, which is decided by social concordance of knowledge creation and promulgation resulting from the exchangeable quantity and shared value-adding quantity of knowledge. One thing to be noted is that, as a knowledge sharing network, knowledge league is a ‘double-edge sword’. When sharing knowledge with network organization, enterprises should keep an eye on how to maintain its knowledge advantage and ensure its leading place in core ability.

5 Conclusion

The creation of enterprise knowledge constitutes the foundation of enterprises competitive advantage. Knowledge management not only should concern itself with the stock knowledge (static) of the enterprise itself, but also the effect and efficiency of knowledge integration and application (dynamic). The effective creation of enterprise knowledge takes place under certain conditions, and demands sufficient support from the managing level, for knowledge management has the following some important characteristics: situational imbedded and path-dependent.

To carry out knowledge management requires a series of technologies and implements to realize the creation, transfer and sharing of knowledge, that is to combine communicative system such as interpersonal network, information technology network, and establishing Knowledge Strategy Perspective, reconstructing enterprise culture and organization structure, constructing enterprise knowledge network and facilitate organization learning and knowledge creation.

References

