

Study on the Relation between Organizational Learning and Innovation from the Perspective of Process Improvement

Wei Yu ⁺

¹ Guangdong Polytechnic Normal University, China

Abstract. To gain innovation abilities in the increasingly fierce competitive environment, enterprises should establish organizational learning system to keep learning new knowledge and techniques as well as put their past experience into use for future projects to avoid making the same mistakes. Process improvement is also a kind of organizational learning model, and greatly contributes to improve the innovation abilities of enterprises. Based on this we conducted a theoretical analysis to establish the institutionalization of organizational learning combining process improvement to improve the level of high-tech enterprise organizational learning. The result of this paper will provide theoretical and practical reference for enterprises to implement effective organizational learning and innovation.

Keywords: Process improvement; organizational learning; innovation

1. Introduction

In the current increasingly fierce competitive environment, innovation is the main driving force for the enterprises to win in the competition. Only by continuous innovation can the enterprises build a long-term competitive advantage and adapt to the changing environment. Organizational innovations are closely related to acquisition and use of knowledge, and organization learning is one of the main methods to acquire, use and diffuse knowledge. For enterprises, improving their level of organizational learning, realizing knowledge sharing, and further enhancing their core competitiveness, is the only way to achieve self-innovation [1].

Enterprises keep looking for the new management principles guiding their production and business operation activities, the organizational learning theory were brought up under this background. Since the organizational learning theory came up in the 1970s, it has gained wide-spread attention from domestic and international Scholars and entrepreneurs [2].

Changes in the external environment require enterprises to continuously innovate to keep up with the change. Enterprise dynamic ability strategic theories suggest the enterprises should build dynamic ability through different kinds of learning. Enterprises should not only accumulate lots of practices to improve their operation efficiency; but also make process improvement for breakthrough innovation. Therefore, this paper will explore the relationship between the organizational learning and innovation from the perspective of process improvement.

2. Process Improvement and Organizational Learning

Most of the activities in enterprises are implemented by employees to complete the work. Process is a series of tools, methods and practices used to make the products in enterprises. The goal of process management is to make products according to plans as well as to improve the organization's process capability. Effective process must consider all the tasks involved, tools, methods, skills, training and incentives for people [3]. The core idea of process improvement is to enhance process capability, and reduce

⁺ Corresponding author
E-mail address: yuwei74@21cn.com

dependency on specific persons by improving the operation of enterprises. In this sense process improvement is consistent with organizational learning. Organizational learning should start from business activities to achieve organizational learning through the process of improvement and process capability improvement.

As the basis for organizational learning, enterprises should gather the history data, which usually include history document data, metrics and project empirical data. Document data includes various kinds of typical project documentation; metrics includes project implementation schedule, workload, defects, assessment and other aspects of the measurement data; project empirical data is the intellectual resources of project members, which exists in the brain of the members and is tacit knowledge. This knowledge is accumulated in the course of the business operations by learning and training which can be referenced by operations in future. Data collection process is the first step of organizational learning, at this time the data obtained belong to cognitive knowledge which needs to be analyzed, explained, and translated into understanding knowledge. Collected cognitive knowledge may be divided into three types: the first type is document knowledge, which belongs to the category of the explicit knowledge. The second type can be presented and collected and belongs to tacit knowledge, measurement data is typical example of this kind of knowledge. This kind of knowledge needs some kind of reprocessing which involves relevant professional knowledge. The third type knowledge is hidden in the process, including successful experience, lessons, and specific practices in order to achieve the goal.

One of the purposes of organizational learning is to make individual knowledge and experience ascend to organization level, and store the knowledge in organization level. Once the knowledge institutionalized or embedded in the organization, this knowledge will be stored in the organization regardless whether the initial creators of the knowledge leave the organization or not. Turning dispersed process knowledge into reusable experience knowledge of organizational level is a continuous process. More complete organizational knowledge will be formed when more process information is collected, sorted and analyzed.

Knowledge base should be constructed with appropriate tools based on the different knowledge media. Using information tools to build knowledge base can improve the efficiency of knowledge storage, retrieval and access. In addition to construct organizational knowledge base, the guidance and system for using the knowledge base should also be established to make sure the knowledge base can be used in an appropriate and reasonable way. To guarantee the safety of enterprise knowledge base, different personnel in organization should be given different access to the knowledge base according their different knowledge need to maintain the normal operation of the enterprise knowledge base.

The establishment of organizational knowledge base marks enterprise organizational learning develops to a certain extent. However enterprises face complex external environment, on the one hand, the market environment is variable and competition is intense; on the other hand technologies update frequently [4]. In order to make organizational learning to be a long-term effective mechanism, enterprises must update and maintain the knowledge stored in the knowledge base. In fact the establishment of organization knowledge base and enterprise operation are interactive processes. That means the knowledge within the organization forms a closed loop of data flow which is a recycle iterative process and promote the enterprise of knowledge base constantly updated [5].

3. Organizational Learning and Innovation

The relationship between organizational learning and innovation has always been the hot issues of researches. The ultimate goal of organization learning is to improve the intelligence of the enterprises, and strengthen the ability of adaption, growth and survive to the drastic changing external environment. The function of organization learning is to fully exploit the resources and potential of enterprises, improve all kinds of operation functions of enterprises, and effectively enhance the intelligence of enterprises. The effect of organizational learning is not only reflected in the optimization of the structure of the organization because organizational learning is not only a kind of organization theory, but also a kind of management method, a kind of enterprise culture, a successful enterprise operation mode. Therefore, the effect of organizational learning embodied in the various business processes improvement in enterprises [6].

Many studies have shown that the learning organization have influence on organization innovation. Organizational innovation can be considered as the result of organization learning, and organizational learning is the most important factors to maintain organization innovation. The organization learning can promote the efficiency and performance of organization innovation activities and enterprises' overall innovation ability, and can help organize to adapt to the change of external environment effectively. Bessant, Caffyn and Gilbert thought that the organization innovation ability must be gradually formed by the organization learning [7]. The study of Stata also found that the organization learning can lead to innovation, especially in the knowledge intensive industries, individual and organization learning and the innovation that has been resulted become the only sustainable sources of competitive advantage [8]. Organization learning ability will not only influence the initial stage of innovation, but also can affect the performance stage innovation.

The processes of organizational learning are the processes to gradually improve the enterprises operation function, and also the processes to foster and strengthen all kinds of abilities of enterprises. Organizational learning will eventually promote the formation and growth of enterprises innovation abilities.

4. Process Improvement and Innovation

In the process of innovation, on the one hand enterprises need to master new knowledge to solve problems, on the other hand enterprises also need to learn how to continuously improve the process of innovation activities, and learn lessons from the problems in the early innovation activities. Only by this way can the organization achieve the real change and innovation. In this sense, the organization innovation is actually a kind process improvement. Through the complex organizational learning, enterprises acquire valuable knowledge and constantly strive to design and optimize their business processes in order to adapt to the constantly changing environment.

Based on perspective of process improvement, organizational innovation process includes three stages: defrosting stage, changing stage and freezing stage. The first step is to establish a benchmark, analyze the current business processes in the enterprises and the gap between the current situation and the benchmark. In this stage the enterprises need to gather information, look for gap, self-examine experiences and lessons and think about what kind of new knowledge and technique will be applied. The second step is to implement business improvement and innovation, including choosing innovation modes and means, obtaining the related resources, designing new business processes and moving toward the benchmark. In the implementation stage of organization innovation, the organization began to determine methods and ways of process improvement, and constantly find and solve problems. The third step is to inspect the actual effect of process improvement and innovation, identify the problems and analyze the reasons to make the new processes embedded in the behaviors of the enterprises and achieve the goal of organizational innovation.

5. Summary

Process improvement is a kind of knowledge-intensive activities. In order to implement process improvement the enterprises need to constantly evaluation and summarizes the present situation, refer to the improving model and the best practices in their industries, and establish feasible process improvement strategy combining their own actual ability and resources. One of the goals of implementing process improvement is to identify, share and institutionalize enterprise knowledge. In this sense, process improvement is also a kind of organizational learning models, and greatly contributes to improve the innovation abilities of enterprises. This paper discussed the relationship between the organizational learning and innovation from the perspective of process improvement. In the future, enterprise will face changing external environment and innovation is the only way for the enterprises to keep their long competitive advantage. Since innovation is based on organizational learning and process improvement is an effective way to implement organizational learning, on the one hand the enterprises should pay great attention to organizational leaning; on the other hand the enterprises should put a lot emphasis on process improvement, so as to make the support for effective organization innovation.

6. Acknowledgements

This research is sponsored by the Humanities and Social Sciences Foundation for Youths of Education Ministry of China (No. 11YJC630266)

7. References

- [1] B. Kogut and U. Zander, Knowledge of the firm, combinative capabilities, and the replication of technology [J]. *Organization Science*, 1992, 3:383-397.1
- [2] P. O. Pablos, Knowledge Management and Organizational Learning: Typologies of Knowledge Strategies in the Spanish Manufacturing Industry from 1995 to 1999 [J]. *Journal of Knowledge Management*, 2002, 6(1): 52 – 62.
- [3] W. S. Humphrey, *Managing the Software Process* [M]. Reading, MA: Addison Wesley, 1989.8
- [4] W. A. Florac and A. D. Carleton, *Measuring the Software Process: Statistical Process Control for Software Process Improvement* [M]. Addison, Welsley, 1999.9
- [5] CMMI for Development, Version 1.2[M]. Carnegie Mellon Software Engineering Institute, August, 2006.
- [6] C. Argyris, Teaching smart people how to learn, [J] *Harvard Business Review*, 1991, 69(3): 99-109.
- [7] J. Bessant, J.Caffyn and J. Gilbert, Learning to manage innovation [J]. *Technology Analysis and Strategic Management*, 1996, 8(1): 59-70.
- [8] R. Stata, Organizational Learning: the Key to Management Innovation [J]. *SloanManagement Review*, 1989 (spring) : 63- 74.