

The Frame of Knowledge-networking Capability in Virtual Enterprise and Its Promotion Strategy

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Abstract: Based on Virtual Enterprise (VE) , the knowledge networking capacity (KNC) is researched. The knowledge networking capability is divided into four dimensions , including planning capability , building capability , running capability and updating capability , by analyzing the challenge to the knowledge network. Then , a theoretical framework and a dynamic system are built to the knowledge network and promote a great innovation in virtual enterprise by knowledge flow. Furthermore , enhance the strategy of improving knowledge networking capacity of virtual enterprise to help the enterprise handle the problem of knowledge network better is proposed. Enhancing knowledge network , thereby , facilitates virtual enterprise to adapt the market need.

Key words: virtual enterprise; knowledge network; knowledge networking capacity

1 Introduction

As global competition get fiercer , in order to fast response the turn of the market effectively and to meet the demand of “peaks” and “valleys” , to improve enterprise's competitiveness. Virtual enterprise , with dynamics nature , can meet the fast changing market demands^[1]. It has become a recognized organization model in the 21st century^[2]. Knowledge network is the basic platform of virtual enterprise. Only through knowledge networking capacity to build and manage the knowledge network can the knowledge network get a better operation. Knowledge networking capability is proposed from the resource-based view and dynamic capabilities theory^[3]. The knowledge networking capabilities must be mastered as a basic ability of enterprise knowledge management , which will help companies manage knowledge network better. so far , only a few study the knowledge networking capability. Zhen

Lee^[4] studied theoretical framework of the enterprise knowledge network , revealed the method that companies can identify the knowledge network. Dehui Ma etc.^[5] defined the knowledge networking capability from the perspective of information science , and then provided a perspective of ability to identify the knowledge network problems by classification; Jutta etc.^[6] Based on the dynamic capabilities view , proposed a holistic and practical concept of knowledge-networking capability , then combined knowledge-orientated and interaction-orientated capabilities; Haihua Wang etc.^[7] proposed five major challenges facing the company in process of building the external knowledge network capability , discussed the constitution of corporate external knowledge network capability and re-defined its factors on the basic process of planning , occupation , utilization , analysis and development of the structure holes. However the knowledge networking capacity about the virtual enterprise is also rare , so that the process of building and managing Virtual

Enterprise knowledge network is lack of theoretical support and guidance. Based on virtual enterprise , the knowledge networking capacity is researched to build , the knowledge network theoretical framework and propose its upgrade path , to help virtual enterprise build and manage knowledge networks better.

2 The challenge for the knowledge networking capability of virtual enterprise

In the 21st century , the market is highly dynamic and full of uncertainty. Therefore the environment of knowledge networks is different and the knowledge network of Virtual Enterprise will face the following challenges.

1) The balance between self-sufficiency and knowledge sharing based on strategic perspective. The era of knowledge economy is based on innovative knowledge and innovative use of this knowledge. How to choose the knowledge network development goals , conceive their evolutionary trends , find a balance between the knowledge-sufficiency and sharing , and then win the competition is the challenge of strategic perspective.

2) The balance between resource abundance and non-redundancy based on the external resources perspective. External knowledge sources are repeated and redundant. Under the premise of diversity , the knowledge of repeatability and redundancy should be reduced. How to avoid the same knowledge source , seize new market demands quickly by using of knowledge in the process of selecting knowledge nodes is the challenge of external resource respective.

3) The balance of knowledge activity process based

on process perspective. There are a large number of new technologies and long research period. The higher cost and shorter product cycle still carry risk. There are numbers of knowledge activity among the members , using a variety of processes rather than a single process of knowledge ^[7] to execute the knowledge flow , create the knowledge. And the whole capability does not mean the linear sum of the individual capacity ^[8]. How to use a variety of processes to obtain the new knowledge is the challenge of process perspective.

4) The balance between the stability and updating based on dynamic perspective. Market environment is dynamic and the customer demand is constantly updated , Virtual Enterprise should concern about changes to find the opportunities , and reorganize network members to adapt the market , and win the competition^[9]. How to update knowledge network to meet the market demand is the challenge of dynamic perspective.

3 The framework for knowledge networking capability of virtual enterprise

3.1 Formation dimensions of knowledge networking capability

To deal with the four challenges , the core being recognition of recognize the diversity of knowledge node , identify the non-redundancy of knowledge network , identification of clear the interactive process of knowledge , analyze the dynamics of the network members , analysis of plan of the knowledge network strategically and optimization of network. To respond the challenges of different perspectives , knowledge network needs the following capabilities , as shown in Figure 1.

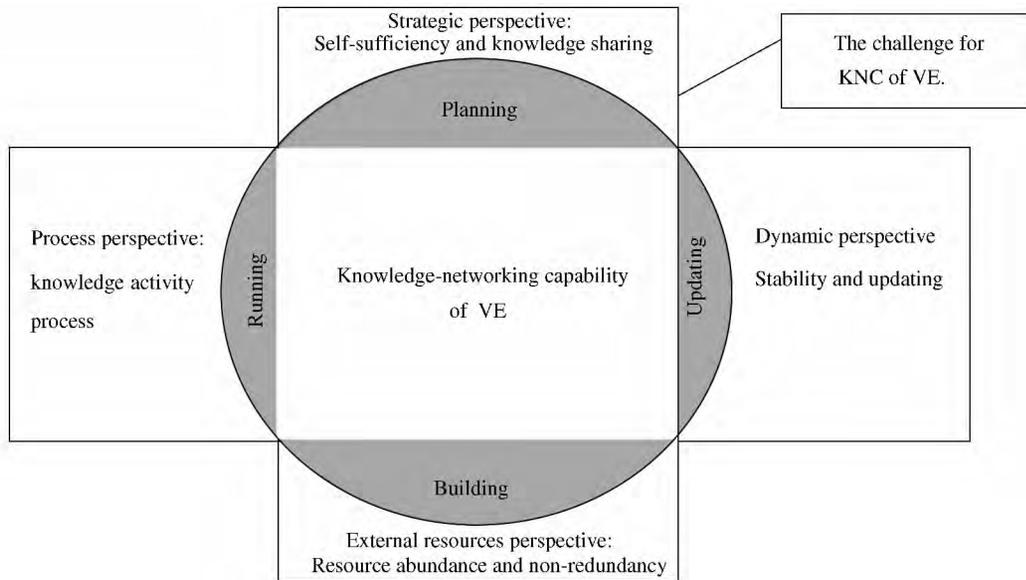


Figure 1 Knowledge-networking capability of virtual enterprise

1) Knowledge-networking planning capability

Dealing with the challenges of strategic perspective requires the network planning capability. The core enterprise in virtual enterprise should explore the market, identify opportunities and position needs from strategic perspective^[10] it should plan the knowledge network capabilities strategically, estimate the amount of knowledge, heterogeneity and complementarity of network members as a whole, find out the core competencies and identify the core ability that companies need. Also, it should find a balance between self-sufficiency and sharing, determine the knowledge network development goals and conceive of its evolutionary trend. This capability consists of three elements. The first is to identify gaps, the core enterprise finds needs and identifies strategic opportunities; The second is to identify the knowledge node, the core enterprise should know how to organize the subordinate enterprises; The third is time selection, the core enterprise chooses the best occasion to build knowledge networks.

2) Knowledge-networking building capability

Dealing with the external resource perspective challenge requires the knowledge networking building capability. Under the direction of planning capacity, the core enterprise should find and select the

knowledge network nodes required in the market^[11], identify the members, coordinate the relationships and develop the guidelines for action, so that the members have rules to follow. This capability consists of two elements: The first is nodes selection, to find the required knowledge network members, which are resource-abundance and non-redundancy; The second is combination the nodes, to combine the nodes to form a Virtual Enterprise knowledge networks.

3) Knowledge-networking running capability

Dealing with the process perspective challenge requires the knowledge networking running capability. The members recognize the value of knowledge, obtain the knowledge (from outside to inside), and share knowledge (from inside to outside). Then, they apply and develop the required new knowledge, technology for knowledge collision and interaction. Knowledge networking running capability is a kind of process capability including three elements: The first is knowledge acquisition, the members choose the resources needed in the network; The second is knowledge sharing, the members share their knowledge resources into the knowledge network; The third is knowledge innovation, the members create the new knowledge by collision and combination.

4) Knowledge-networking updating capability

Dealing with the challenge of the dynamic perspective requires knowledge network update capability. On the basis of assessing the existing knowledge stock, quality and knowledge structure, the network nodes are updated to adapt to the new demands. This capability is the key for the dynamic perspective including two elements: The first is re-identifying the gap, the core enterprise finds the gap in changing market, and defines the required ones; The Second is updating

nodes, to re-find the required nodes with the required knowledge, and regulate the existing members of the enterprise.

3.2 Formation mechanism of knowledge network capacity

Four dimensions of knowledge networking capacity constitute the entire knowledge networking capability system, which form a dynamic evolutionary system through interrelation and constraint. As shown in Figure 2.

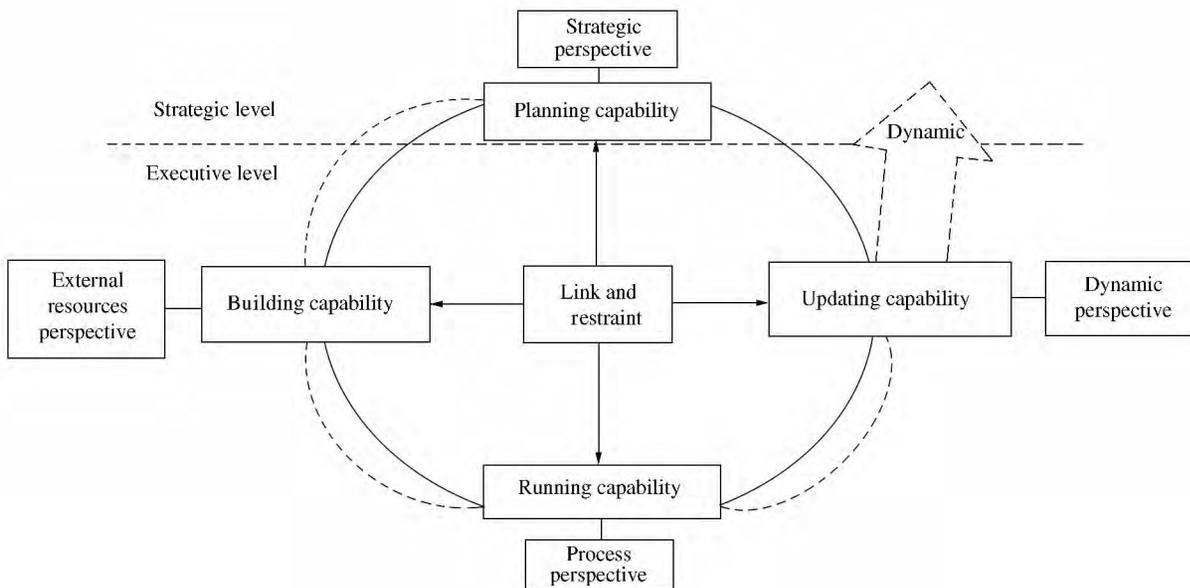


Figure 2 The formation mechanism of knowledge-networking capability

In the process of knowledge network management, from the strategic planning capability, it makes a clear knowledge network objective, grasps the needs or required ability and identifies strategic opportunities; In the process of operation, building capacity, running capability and updating capability are based on three different perspectives for network management. The network is constructed to form the knowledge network, the knowledge is obtained and shared to produce new knowledge or technology, the gap of network from a dynamic perspective is found and the existing member is regulated rationally to adapt to market changes. Knowledge network is constantly updating and in a rising process by continuous improving. The formation of the knowledge networking capacity is a dynamic process of evolution.

So, the mutual link and restraint of various abilities are indispensable for Virtual Enterprise to innovate and adapt to the market.

4 The promotion strategy for knowledge networking capability of Virtual Enterprise

Knowledge networking capacity helps virtual enterprise build and manage knowledge networks. With the dynamic evolution process, the related skills of members are integrated and gradually deepened and updated. according to the "bucket theory" [4], if one of the capacities is weak, then it will become a "short board" and affect the knowledge networking capacity as a whole. Therefore, enhancing the various dimensions of knowledge networking capacity is necessary.

1) Promotion of knowledge-networking planning capabilities

The planning capability is important for enterprise to make a clear objective. Enhancing strategies of planning capacity includes: The first, improving the internal management system of core enterprise. Sophisticated internal management can help companies find their knowledge gap, understand their needs clearly, set and goals combined with the development of enterprises, develop a reasonable and innovative strategic objectives in order to meet customer requirements^[7]; The second, cultivating the core entrepreneurs' adventurous spirit, planning is a beginning of knowledge network construction, which is full of dynamics and risk, only the entrepreneur who are brave enough to make decisions and take responsibility can choose the best time to build knowledge networks^[4], then develop and make use of the various opportunities, so as to grasp the market opportunities and meet market demands better.

2) Promotion of knowledge-networking building capabilities

Network building capacity refers to that under the direction of planning capacity, the core enterprise finds and selects the knowledge network nodes required in the market, identifies the members, and construct knowledge network. Enhancing strategies of network building capacity include: The first is to increase the experience of network activity of the core enterprise, because abundant experiences can enhance the ability to find and develop network^[4], the core enterprise can exactly find the knowledge nodes required and non-redundancy based on the accumulated experience; The second is to make the rules and settlement mechanism of dispute, the core enterprise needs to show integrity, reliability, win-win behavior to the members in order to make internal harmony, correspondingly, the members should demonstrate honest, prevent opportunistic behavior and protect the effectiveness of knowledge network to be maximized.

3) Promotion of knowledge-networking running capabilities

Running capacity is the ability to develop the required new knowledge. Enhancing strategies of network running capacity include: The first is to strengthen the informational construction of virtual enterprise, and improve the system of document management, database, workflow and decision support etc.^[4]. Enhancing storage and application capacity of the knowledge, which is the documents basis of network cyclic evolution to enhance innovation capability; The second is to integrate the knowledge network communication channels, build a platform for knowledge sharing among organizations, and make use of formal communication and informal communication to reduce knowledge transfer barriers, increase communication opportunities and the amount of communication information. Thus, it enhances the ability of acquisition and understanding of knowledge, and information sharing. Eventually, knowledge is innovated and it creates the value.

4) Promotion of knowledge-networking updating capabilities

Updating capability is the key of dynamic perspective and improving the knowledge network. Enhancing strategies of network updating capacity should be considered as the most important aspect, which include: The first is to promote the normalization of the network update, establish the mechanism of dynamic, and update the knowledge through the establishment of database to promote updating; The second is to enhance the ability of updating the market information. Knowledge network is not only a collection of knowledge resources, but also a variety of information. Only to enhance the ability of capturing market information can the enterprise timely predict, grasp the market, identify new needs and update their knowledge networks.

5 Conclusions

Virtual enterprise takes the knowledge network as the basic platform; the activities of knowledge network are more frequent than ever. Therefore, it brings new requirements to explore the knowledge networking a-

bility of virtual enterprise. By analyzing the knowledge networks which are faced with the challenge of four perspectives, we divide the knowledge networking capability into four dimensions: knowledge-networking planning capability, knowledge-networking building capability, knowledge-networking running capability, and knowledge-networking updating capability. The four dimensions of knowledge networking capacity adapt for dealing with four challenges which the network is faced with, constituting the entire capability system. The system promotes the innovation of Virtual Enterprise to adapt to market. In order to avoid "short-board effect", Virtual Enterprise can improve each dimension of knowledge networking capability as an organic whole according to promotion strategies. Thus, on the basis of analyzing the knowledge networking capacity, the promotion strategy of Virtual Enterprise knowledge-networking capacity is obtained to help Virtual Enterprise adapt to market quickly.

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