ENTERPRISE KNOWLEDGE PRACTICE AND RECOMMENDATION BASED ON HOTP MODEL

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Abstract: According to Knowledge Management Maturity Model, the knowledge management implementation of our country is in cognitive level, and the introduction of enterprise knowledge management has become an irreversible trend. Globalization business requires enterprises to equip with the ability of communication and the ability of knowledge acquisition, knowledge creation and knowledge conversion. However, many enterprises are still ambiguous on the concepts of knowledge management, or simply think that knowledge management is information management. In this paper, we study Lenovo Group case under HOTP model to find out its experience and existing problems in the process of the knowledge management implementation, and to provide reference for other enterprises, which help to promote the development of knowledge management.

1 INTRODUCTION

Since the 1990s, with the globalization of economy and the development of science and technology, knowledge production, dissemination, communication and utilization of the knowledge is an important business driving force during the enterprise growth. Society is moving into a knowledge economy era, in which the most important factor is the occupation and configuration of the intellectual resources, and the production, distribution and use of the knowledge. in the era of knowledge economy, knowledge replaced traditional labor and capital, and become the enterprise the most important resource. The Famous management guru Peter F. Drucker said: "in the 20th century enterprise, the most valuable asset is production equipment; in 2l century organization, most valuable assets will be the knowledge workers and their productivity in the organization.

A global 500's CEO survey has shown that 2 reasons attribute to the enterprises' future: globalization, and the 2nd, knowledge management. Knowledge management exists for only 10-15years

both in concept and practice, however, 70% of the Global 500 enterprises has implemented knowledge management project. 1 While in China, only a handful of companies have set a CKO position (short for chief knowledge officer).Compared with knowledge management, information management can be seen more often. Although, a survey aiming at CIOs (chief information officer) in China conducted by IBM company and Tsinghua University shows that, Chinese CIOs strategic position is much lower than the global average level, and cut no figure in business management.

Lenovo Group is a highly innovative international technology company, and it has the second computer sales in the world. On July 9, 2008, Lenovo become China's first non-monopoly private company to be ranked among Fortune Magazine's top 500 enterprises. Besides, Lenovo Group has located in the top 3 in China's top 500 private enterprise for many years. In 2010, it located in the third place. n this paper, we study Lenovo Group case under HOTP model to find out its experience and existing problems in the process of the knowledge management implementation ,which contribute to improve the efficiency of KM and IM during an

enterprise's management process and improve its competitiveness.

This paper is organized as follows: section 2 illustrates the knowledge management and enterprise competitive force literature research and the HOTP model. Section 3 uses Lenovo Group as an example to analyze the advantages and disadvantages of knowledge management implementation. Conclusion and recommendation are discussed in section 5.

2 RELATED LATERATURE

2.1 KM and Competitive Force

Knowledge Management is related to each piece of work throughout the whole enterprise activity, the activities of enterprises cannot without knowledge, and it considers the knowledge learning, utilization, innovation and spread as the main line, and form a continuous process. Accompanied by material, flow knowledge flow is dominated in the management, thus become the core of management work, and connect the other management work in an organic whole.

In the knowledge economy, primarily enterprise is a body of knowledge, which make an enterprise distinguish with the others. An enterprise takes the innovation ability and knowledge study, diffusion capacity of knowledge as a token, then it formats and develops its core capability. The reality an enterprise as a body of knowledge existing makes the enterprise knowledge management into the main line in business management.

There have been various types of firm growth theory over the past years. Theories such as neo-classical microeconomic theory and industrial organization theory argued on the power of capital investment and optimization of costs as the primary contributor to competitive advantage. Barnet（1991) propose knowledge enterprise maintain competitive advantage based knowledge (Barney, 1991); Vidya SeRhri think the enterprise knowledge and experience and enterprise innovation can produce sustained competitive advantage; Bloodgood and Salisbury thinks, the organization can, according to their own change strategy, take the corresponding knowledge management strategy to support the organization competitive advantages (Bloodgood and Salisbury, 2001); Emin Civi think the purpose of management of knowledge assets in enterprises is to obtain competitiveness, and the ability of management of knowledge is the base to remain

competitive advantage (Lubit, 2001) ; Roy Lubit thinks, in enterprise's knowledge, the inherent characteristics of tacit knowledge form the core competitiveness of the enterprise (Civi, 2000); Willem Selen thinks that the establishment of the learning organization helps to enhance the competitiveness of enterprises (Selen, 2000).

2.2 HOTP Model

HOTP knowledge model (Liao, 2007) is Organizational management model, and its components is hunman, organization, technology and process. The main reason of applying HOTP model is the same measurement criteria for comparative analysis. The consistency of research methodology and analysis is ascertained. In addition, the model is considered an appropriate assessment tools and well accepted medium to the investment, development, and implementation of KM (Liao, 2010).

In Fig.1, the outer part of the figure represents infrastructure capability including technology, structure and person. The inner part of the figure represents process capability including production, storage, sharing, usage and evaluation.
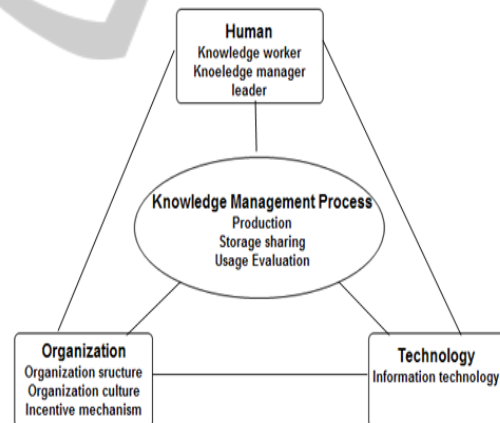

Figure 1:Structure of HOTP model.

2.2.1 Human

(1) Knowledge worker. Modern enterprises call their employees as knowledge workers. They are organization knowledge producers and users of organization knowledge, namely, they produce new knowledge during the business process, at the same time, they use knowledge base or other social network knowledge to support their business activities, so as to realize the integration of knowledge flow and workflow. Knowledge

management is to make all members of an organization have access to get the knowledge he needs and storage what he generate in any time or at any place.

Knowledge workers should be skilled at related the use of information technology tools, and will be able to do define their own information and knowledge needs, Know how and where could obtain knowledge, can understand the meaning of information and knowledge, and then can make knowledge internalization and combination to generate new knowledge, and can use knowledge in the actual work to help enterprises gain the maximum profit.

(2) Knowledge manager. It is the person who is specially in charge of knowledge management in an organization, including knowledge reporter, knowledge editor, knowledge engineers, knowledge director, etc.

(3) Leader. Organizational leader plays a vital role in KM, is the most important promoterin knowledge management. The function of the leader is inspire subordinates, guide activities, choose the most effective communication channel and solve the conflict between members, and its ultimate purpose lies in inspire and guide employee's behavior towards organizations goals.

2.2.2 Organization Reform

It is actually a management reform from the core of physical resource to the core of knowledge resources in the management process. In this reform, it involves the transformation of organizational structure, and organizational culture and organizational incentive mechanism.

2.2.3 KM Technology

KM technology refers to the modern information technology, which could realize knowledge storage and transfer. The most important technology includes: Internet and Intranet, database management system, document management technology, groupware technology, data warehouse and data mining technology and on-line analytical processing technology, workflow and sharing technology.

2.2.4 KM Process

KM process is a dynamic process of knowledge, also called knowledge process. In this model knowledge process includes 5 process: knowledge production, storage, sharing, use and evaluation. Knowledge

production includes internal knowledge definition, external knowledge acquisition and knowledge innovation; Knowledge storage includes intellectual choice processing, preservation and update; Knowledge sharing includes two modes the official channels and informal channels , Knowledge usage the integration of knowledge flow and business flow; Knowledge evaluation refers to the assessment of knowledge quality, timeliness and effect , and then update knowledge and improve the application effect .

3 HOTP MODE APPLICATION

Chose Lenovo Group as example.

3.1 Backgroud of KM

Chose Lenovo Group as example.Lenovo Group began to implement KM in 2003, before which it implemented ERP system, which was divided three steps to optimize.

The ERP project proposed in 1997 is an essential step for Lenovo informatization in 1998, MRP went live, which marks that Lenovo's supply chain automation degree greatly enhanced. On the basis of business process automation, it realized the automatic confirmation of Bill of Materiel (BOM), and establish the relatively perfect production information system, purchasing information system, business operation system. In addition, it realized the first generation of the electronic commerce system - static information release system.

In May 2000, Lenovo started the second ERP project stage, the implementation SAP R / 3 system, which realize business integration and information sharing, and integrated the original Information Islands, and realized the butt joint of finance and business.

The third stage is that, in August 2001, Lenovo began to implement the SCM project. Through the SCM project, Lenovo has successfully docked upstream enterprise and the hundreds of downstream agents. SCM mainly optimize supply and demand balance of the upstream and downstream through the longitudinal control for the products.

Throughout the development path of Lenovo, Lenovo Group has already successfully implemented ERP system in the business chain management; in the other aspects such as Coordination office, human resources, customer management, file management, competitive intelligence in the value chain management, Lenovo also introduct some related

applications. On this basis, lenovo group transform knowledge of the enterprise in order to build a knowledge-based Lenovo, which strengthen its core competitiveness. Based on knowledge management maturity model, Lenovo Group in 2003 is in the awareness stage of Knowledge Management.

The main problem at this stage are: (1) The knowledge of the various departments are scattered, which is difficult to form inter-departmental knowledge sharing; (2) without knowledge management systems and methods to standardize knowledge management within the enterprise; (3) lackness of appropriate organization and the knowledge management of members, there is no clearly defined responsibilities to ensure the smooth progress of knowledge management.

3.2 KM Implementation

For Analysis of Lenovo knowledge management at 4.2, the core idea of the implementation of knowledge management of Lenovo is to Clear KM object, Sort out the KM process, establish KM organization, establish KM post, standard KM system, assess KM performance as the main content, expand the knowledge management Project , as shown in figure 2 (Lenovo Group DB/OL).
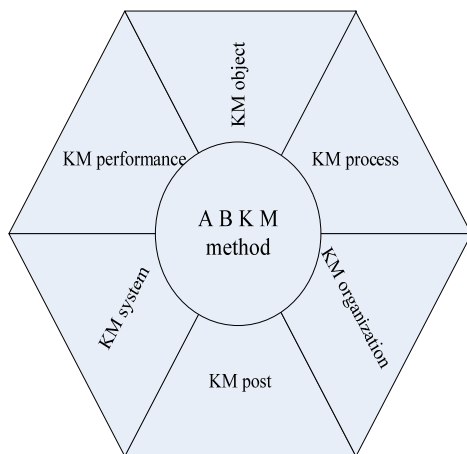

Figure 2: Core idea of knowledge management.

3.2.1 KM Objects

KM technology refers to the modern information technology, which could realize knowledge storage and transfer. The most important technology includes: Internet and Intranet, database management system, document management technology, groupware technology, data warehouse and data mining technology and on-line analytical

processing technology, workflow and sharing technology.

Actionable knowledge management must be the management of three elements :employees, process and knowledge ,in the other words, knowledge, staff, communication, that constitute Lenovo triangle of knowledge management process.

(1) Staff

Staff are not only the users 、communicators of knowledge , but also the creators of knowledge. Employee's ability to identify problems, expert at summing up the problem, Willingness to share knowledge, these are the important work of knowledge management for Lenovo, especially under the the influence of intense competitive pressures and conservative culture, knowledge sharing is an important part in Lenovo of knowledge management.

(2) The Communication Process

Knowledge are disseminated in the communication process, new knowledge is created in the communication process, Therefore, knowledge management should pay attention to create the continuous, smooth communication mechanism and create equal and harmonious atmosphere in the communication progress to promote the creation, dissemination and use of knowledge .

(3) Knowledge

The knowledge of enterprise include explicit knowledge and tacit knowledge. explicit knowledge can be expressed by Symbolic ,it also be quantified. Lenovo transform explicit knowledge to information systems for storage, conversion, transmission, mainly through language, computer information systems and applications software for the management of explicit knowledge; tacit knowledge is from learn and practice of direct experience of individuals , but also from the contact and exchange of ideas with people who have experience, such knowledge " it can be perceived but can't be described with words," that's difficult to express, Lenovo achieve this creation and dissemination of knowledge mainly through team learning.

3.3.2 KM Process

Lenovo implementation of knowledge management is divided into four phases: pilot demonstration, knowledge integration, dynamic sharing, knowledge audit, initially Lenovo took human resources and customer service as a pilot, then summed up the problems in process of knowledge management and find appropriate ways to solve the problems, after

obtaining the fruitful results, Lenovo group promoted this methods in sales, product development. Lenovo knowledge management process is divided into: acquisition and organization of knowledge, knowledge storing, knowledge sharing and knowledge innovation.

(1) Acquisition and Organization of Knowledge

Lenovo set up a special department for collection of information——Marketing Information Service, telephone hotlines, open mail and home page, the Information Management department from the head office and Business Development Department are together responsible for Planning and processing of information. Lenovo mainly takes these two ways: meetings and the use of information management systems, to disseminate knowledge and information, meeting is benefit to disseminate knowledge, exchange experiences, seek unity of thinking, and implement corporate culture; at the same time, Lenovo also vigorously promotes the office automation and development of management of information systems, it pushes the dissemination and application of knowledge.

(2) Knowledge Storage

Knowledge storage is that, after selection, filtration, processing and refining, an organization stores knowledge in a proper media, and update and maintain its content and structure at any time, in favour of the demander obtaining effective knowledge through convenient and fast access.

Lenovo knowledge management project applied LKSKM that was based on IBM system, which help to realize special knowledge portal, and establish dynamic and organized knowledge base knowledge storage. In this knowledge base, each knowledge component and each knowledge product has been defined the validity, and when it reach the validity, the system will remind the builder to update the context, which will contribute to maintain the knowledge products dynamically. Also, Knowledge administrator will also timely delete useless, expire document. In addition, the knowledge component, which has been uploaded by the staff, must be audited, and only the valuable knowledge could be released.

(3) Knowledge Sharing

Knowledge sharing refers to the progress in which knowledge owners share their knowledge and innovative thinking with others, and its main form is the dissemination knowledge, knowledge sharing through the dissemination of knowledge means that each employee can make rapid digestion and absorption of existing knowledge resources to achieve the rapid growth of personal total

knowledge ,which lay a solid foundation for the smooth implementation of knowledge management of enterprise. More process of knowledge dissemination are complex at the same time, thus form a complex multi-loop to loop.

Knowledge-sharing approach——team learning. Team learning. is a prerequisite for Knowledge sharing .the important aspect of knowledge management lies in the handling and application of knowledge, the core issue is whether employees are willing to exchange their own knowledge with others in a team, to cause the actual effect of "1+1>2". Lenovo Group's new employees must participate in "into the mold" training, achievements recorded in personal files, that is important basis for whether they can be regularization on schedule. Into an international wave of knowledge management, especially after the introduction, "into the mold education " training are improved in many aspects: on the cultural basis of training and delivery, it woks for providing effective job skills or professional training to the employees, while also increasing interaction, dialogue, exchange with the executive staff, and from the perspective of staff development ,it adds in more international requirements, so that "mold" is more responsive to the needs of development of the company. They not only learn from their experience, but also have the opportunity to constructively share their experiences and ideas with other colleagues ,and get criticisms and suggestions from other team members, then accept and implement these recommendations, jointly review the past behaviour and experience learned.

(4) Knowledge Innovation

Lenovo Group's development itself is a process of continuous innovation. They achieve the incremental innovation of technology, market, management and system in the process of the creation of the enterprise. In the respect of technology and market

In the respect of management, they create a sales system centred in distribution, and an organization of order-stock and production in safety, and they implement the division system first in China, etc. In the respect of system, they establish a new technology development company, and create a bonus system for employee, and an Academia Since based on computer institute of Chinese Academy of Sciences. The innovative ideas influence every step of Lenovo Group, so a saying goes in Lenovo like this, "90% the inheritance, 10% the innovation." It is the incremental innovation that makes its achievements .

3.3.3 KM System

KM technology refers to the modern information technology, which could realize knowledge storage and transfer. The most important technology includes: Internet and Intranet, database management system, document management technology, groupware technology, data warehouse and data mining technology and on-line analytical processing technology, workflow and sharing technology.

KM system includes two aspects: on the one hand, it is the usual management approach, incentive system and check-up system; on the other hand, it need the guidance and support from the organization. The following is a simple instruction about Lenovo's KM system.

(1) Incentive system. Lenovo Group have good incentives to the staff especially the key staff. The core concept of incentives has two points: ① take the personal development into the development of enterprise ② give yourself the stage without a ceiling. In terms of material incentives, Lenovo spent a lot of time on the company's equity structure reform, the implementation of the "Pan-stock system." Namely makes employee to be the ownership of the enterprise. Through rewarding key employees stock options to establish them to beshareholders, currently staff is holding 35% stake of the company, their interests and the company are tied together tightly as a whole, They will take the personal development into the development of enterprise. More importantly, each employee will have no reservations to show up tacit knowledge such as their knowledge, experience, which played an important role in the continued development of Lenovo Group. In the internal Lenovo Group, the top 10 who uploaded most knowledge items members would be shown dynamically in the knowledge management system. They were called knowledge heroes, and would benefit from it in prize of the quarterly evaluation. The top 10 people who learned more than others would also be shown in the system. One the other hand, these members who did not upload any knowledge items would be deducted by certain proportion in the quarter prize.7

(2) Check-up system. after the acquisition with IBM ,the new Lenovo introduce a new performance management system - P3 (Priority, Performance, Pay) targets, performance and bonuses ,in order to further encourage employees to transfer knowledge, The new P3 system Continued the original Lenovo Group's practice of attention and concern to key performance indicators and performance management process KPlS , which ensures close relativity between bonus and performance, encourages the team, mutual transfer of their personal knowledge, and the ability to continuously exceed goals, and ultimately makes the company and employees to grow and share revenue.

(3) Responsibility system. Lenovo's approach is to define knowledge liability table, in which it rule the intellectual activities template during a process, and knowledge component on a post, and make it provisions for employees working content of a necessary component, and it will force each employee and department to break original interests range. For example, supplier purchasing staff must give all kinds of content about supplier evaluation index and evaluation process. During reinforced knowledge management process, the original knowledge cliques was gradually destroy, and the corresponding knowledge component transform into the company's knowledge system.

3.3 Comparative Analysis

In the HOTP model, the human of the knowledge management includes knowledge worker, knowledge manager and leader. In Lenovo Group, the knowledge management department was established under the support of its president Chuanzhi Liu, and it was driven by Houqi Zhang, and it was responsible of the implementation of knowledge management implementation, definition of knowledge management process, knowledge safety and knowledge audit.

In the HOTP model, the organization transform of knowledge management includes the transform of organization structure, organization culture and incentive mechanism. In Lenovo Group, it established the knowledge management driven by HouQi Zhang. This department includes about 40 persons, in which there are 8 professionals and the other co-workers are managers in other departments. Lenovo Group established dynamic knowledge base, and the incentive mechanism is that the enterprise give staff certain material rewards through quantizing the their knowledge contribution, which help to promote knowledge sharing and the construction of learning-style enterprise.

In the HOTP model, knowledge management technology includes tacit KM technology and explicit KM technology. The knowledge management technology in Lenovo Group is LKSKM based IBM system architecture development. Before it, Lenovo Group successfully introduced ERP system, which realize the

integration of business flow and cash flow, and the docking of supply chain.

In HOTP model, knowledge management process includes 5 process: knowledge production, storage, sharing, use and evaluation. However, the knowledge management in Lenovo Group includes Knowledge acquisition and organization, knowledge storage, knowledge sharing and knowledge innovation. The knowledge innovation is included in knowledge production. Compared with HOTP model, it lack of knowledge evaluation in Lenovo Group.

4 CONCLUSIONS AND RECOMMENDATIONS

Compared with HOTP model and the core idea of knowledge management in Lenovo Group, the knowledge management implementation in Lenovo Group is relatively complete. The implement of knowledge management in Lenovo Group is based the ERP project, which has already integrated business flow and cash flow and ducked the supply chain. From the perspective of knowledge management implementation, it is a dynamic, compositive process, which is pushed orderly as a long-term strategic plan (Chen, 2004). From the perspective of knowledge management context, it consider the knowledge management process as the center, and the other elements, human, organization, technology actively support the whole process.

According to the analysis in last section, the disadvantage of knowledge management in Lenovo Group is that it lack of knowledge management evaluation mechanism, but incentive mechanism for promoting knowledge sharing. Actually, according to HOTP model, enterprise could design questionnaire from the perspective of human, organization, technology and process to get the situation of knowledge management implementation. In the questionnaire, it could set muti-level index to quantificationally analyze knowledge management accurately. Based on the questionnaire result and the knowledge management maturity model, it could get the knowledge management stage at which the enterprise locates. According to the analysis result, we could conclude the advantage and disadvantage in the knowledge management, then make the appropriate decisions.

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