

# The Multi-dimension Spiral Model of the Knowledge-based Corporation

—Theoretical Thinking of Beijing Future Advertising Corporation

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**Abstract**—This article makes an example of Beijing Future Advertising Corporation and explains its multi-dimension spiral model, which includes knowledge spiral, opportunity spiral and value spiral. The three spirals connect and promote mutually and push the development of the corporations' core competency. Based on the theoretical thinking of Beijing Future Advertising Corporation, the article illustrates the general model of knowledge-based corporation, constructs the whole framework of knowledge management of team project and makes a reflection of the model on the knowledge-based corporations in China.

**Index Terms**—knowledge-based economy, knowledge management, Knowledge-based Corporation

## I. INTRODUCTION

In its annual report *The Prospect of Science, Technology and Industrial Development* in 1996, Organization for Economic Cooperation and Development (OCED) puts forward the conception of knowledge-based economy which means economy based on the manufacture, distribution and use of knowledge and information [1]. Peter Durcker predicted that 'knowledge workers are individual elements of new economy, of which knowledge becomes currency' in his article of *Appearance of New Organizations in 1988* [2].

The coming of knowledge-based economy makes knowledge an important element which accelerates economic development and increases corporation's revenue. How to seize and use opportunity and promote its core competency becomes the corporation's important goal. To achieve the goal, most companies do take some measures to meet the opportunities and challenges of the knowledge-based economy.

This article makes an example of Beijing Future Advertising Corporation and explains its multi-dimension spiral model, which includes knowledge spiral, opportunity spiral and value spiral. The three spirals connect and promote mutually and push the development of the corporations' core competency. And then the article illustrates the general model of corporation, especially the corporation in the knowledge-based economy, constructs the whole framework of knowledge management of team

project and makes a reflection of the model on the knowledge-based corporations in China.

## II. THE CORPORATION'S BACKGROUND

Beijing Future Advertising Corporation founded in 1992 and its main operation is media advertisement. Since its foundation, it has acted as an agent of CCTV with its column Dong Fang Shi Kong, Jin Ri Shuo Fa, Jian Kang Zhi Lu, Shang Jie Ming Jia and the channel of sport and television drama.

During its seventeen years development, Beijing Future Advertising Corporation always sticks to the idea of 'providing best service to society, be honest in cooperation' and get good appraisal from customer and society. After years of development, its turnover increases from 1.1 billion in 2003 to 2.6 billion in 2007.

The fast development of Beijing Future Advertising Corporation is not merely because of the resource advantages of CCTV, while the company's management accounts more. It operates according to the belief that it's important not only just to serve customer, but also to raise the quality of service to satisfy customer. In guidance of the credendum, it has formed the advantages of technology, network and talents and won the honor of 'The Most Reliable Company by the Media and the Customers in 2008'.

By buying ADEX2000 advertisement supervising system and INFOSYS television analysis system on viewing rate from CCTV-SuoFuRui, Beijing Future Advertising Corporation can supervise the broadcast information of 70 nation-wide channels' advertisement, inquire information about products in 16 big trades and 214 product categories, and trail in detail the condition of television watching in 700 channels in 64 cities and areas. Through researching deeply into the condition of watching television from the viewing rate points, audience structure and audience overlapping rate etc., the company can offer professional service for customers. Because its advanced technology can offer customers excellent service, now, Beijing Future Advertising Corporation has reached more than 6000 customers which maintains daily connection with it, and has established step by step the customer network nationwide.

In the process of its development, Beijing Future Advertising Corporation faces some problems. In 1992, when it was founded, it was a small advertising company and there are only about ten persons. With its scale enlarging, the number of the employee increases, there are some problems manifested in its management.

*A The integration of the advertising projects asks for the cooperation between different employees and different departments.*

The cooperation process is manifested not only in the process for employees to share knowledge, but also in the process for different thoughts to meet for creating new ideas to sell the corporation's products and good methods in management.

In the early development of Beijing Future Advertising Corporation, the products it sold were single column, single advertising time, therefore the sales person did the job themselves. Later the managers in the company realized that the customers bought the advertising time because they wanted to be well known and a single column or a single advertising time may not work as well as integrated products. Therefore the managers changed their products from a specific advertising time to an integrated program to increase the customer's value. The integrated advertising program couldn't be done only by a single person or a single department and asked for several departments or several persons to cooperate with each other.

In some of the important advertising programs in Beijing Future Advertising Corporation, for example, 'Ten Top Match', 'World Cup', 'Xiao Ao Jiang Hu' et al., team combined by employees from different departments is needed to carry out the program. Also, big and important program can't be completed by customer center itself, it is also need the support of plan center to provide direction and train, the media center to provide media information, and the marketing information department to provide industry information. It is important to strengthen the communication and cooperation between departments and employees to finish integration advertising programs and big advertising programs.

*B The knowledge and skills the employees possessed can not be shared with each other.*

With the development of business, employees accumulate lots of knowledge and skills, such as, selling products, contracting with customers and so on. But the knowledge and skills can not be shared because of employees do not want to share them with others or it is not convenient to share.

The business model in advertising industry usually has the characteristics of creativity. Although many creation and breakthrough are developed, but the outcomes are only be possessed by some employees themselves as their own knowledge, and can not be shared with others.

When new employees come to the company, Beijing Future Advertising Corporation usually trains them strictly. But the knowledge, especially the tacit knowledge old employees acquired can not be

communicated to the new comers. The difficulty in the sharing of knowledge is a lost not only to the individual study, but also to the organizational study.

The sales who interact with the customers represent the company and can be seen as the symbol of the company. Their words and actions will be the window through which the customers watch the company. If the employees, the departments can share knowledge and skills, Beijing Future Advertising Corporation will improve the level of its employees, improve the influence of company brand, give the customers a more identity symbol and accelerate the company's core competition.

*C The lost of customers and knowledge because of the leaving of employees.*

One of the most important characteristics of advertising industry is the easiness to entry. Therefore a lot of employees set up their own company after working several years for Beijing Future Advertising Corporation or go to another company. The manager of Beijing Future Advertising Corporation joked that Beijing Future Advertising Corporation is a Huangpu Military Academy in the industry of advertisement. The disorder in this industry makes the people in this industry to leave their work often.

The high separation rate of employees challenges Beijing Future Advertising Corporation in two ways. First, the leaving of employees results in the lost of customers. Second, the leaving of key employees often leads to the lost of knowledge the employees possess which is equal to the lost of capital as to knowledge-based company. The high separation rate makes Beijing Future Advertising Corporation realize that it's necessary to manage the knowledge of corporation and employee and transform the knowledge of employee to the knowledge of organization.

The problems Beijing Future Advertising Corporation faces make the manager realize that they must find some ways to improve the cooperation of employees which can not only provide the customers a whole service of integrated advertisement, but also improve the customers' brand value and make the employees learn from each others.

In practice, Beijing Future Advertising Corporation finds multi-dimension spiral model, which includes knowledge spiral, opportunity spiral and value spiral, that is to say, finding opportunity in the market, improve the customers' value, and strengthen knowledge management among employees and in the company.

### III. THE MULTI-DIMENSION SPIRAL MODEL OF THE CORPORATION

The multi-dimension spiral model of Beijing Future Advertising Corporation contains three aspects: knowledge spiral, opportunity spiral and value spiral.

#### *A Knowledge Spiral*

Company is a processing factory which translates materials into something valuable. But in the knowledge-based company, the raw materials sometimes are not only

some kinds of simple physical materials, but in more advanced knowledge form. Knowledge has become the first key of creating wealth.

American scholar D · L · Barton thinks that enterprise's core competency lies in the unique knowledge system which can bring competitive advantage to enterprise. Whoever grasps more and newer knowledge, can get advantage position in future competition.

The knowledge spiral is as follow:

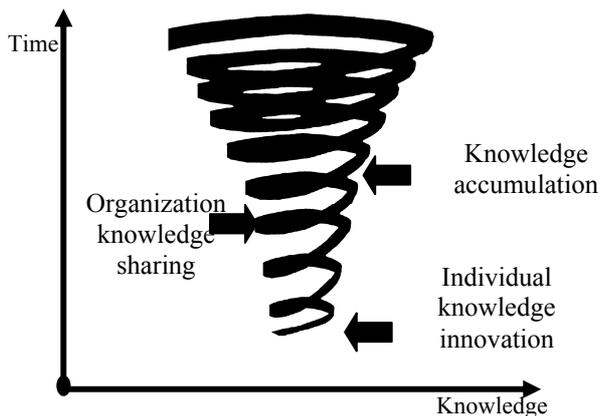


Fig.1 Corporation Knowledge Spiral

The knowledge spiral contains individual knowledge innovation, organization knowledge sharing and knowledge accumulation.

Generally speaking, knowledge innovation always comes from individual. For instance, certain outstanding research people has a discovery and then applies it for a new patent; Certain middle-level manager has an intuition for the market trend and eventually gives birth to a conception of important new product; Or a workshop worker relies on the working experience of many years and creates a new procession scheme. Product is not only the outcome of knowledge creation, but also includes the manner to manage bushiness, to manage the subordinates, to develop a new product [4].

Knowledge sharing is the process of individual's innovative knowledge transferred to other individuals, or to the whole organization. When members in organization possess some kind of innovative knowledge, its members will assimilate the knowledge and further perhaps make innovations.

But the employee's innovation doesn't mean that he or she will share it with others. Perhaps he or she will possess it as a secret because of selfishness. Davenport's research shows that in the following three conditions, employees want to share knowledge with others:

- (1) Help to each other. The time and energy of every person are limit. If an employee believes that he will be benefit from his co-ordinations who give him their useful knowledge, then the employee will provide knowledge to his co-ordinations either.
- (2) Reputations. Employee will provide knowledge to others if his action can bring him the reputation in corporation.

- (3) For one's own interest. Because of individuals' interest, employee considers the topic in one field is interesting and important, and is willing to provide the knowledge to his co-ordinations and discuss the topic with them [5].

Knowledge formed through sharing lies in employee's brains. It is a kind of dormant knowledge. It should be made visible and shared and become a part of company's entire knowledge accumulation. This course of knowledge accumulation is not only a quantitative but also a qualitative change, and can produce the effect of  $1 + 1 > 2$ .

According to Goldblatt, explicit knowledge only represents the top of the whole iceberg of knowledge, while narrow and limited studies of explicit knowledge will ignore 80 percent of the submerged iceberg [6]. Compared with explicit knowledge, tacit knowledge, as the implicit and decodable knowledge, is hard to be copied or imitated and constitutes the foundation of enterprises' key competitions.

Through individual's knowledge innovation, organization's knowledge sharing and knowledge accumulation, the company's knowledge will increase continually, and begin another more advanced knowledge spiral on this foundation.

Beijing Future Advertising Corporation deeply knows the importance of knowledge and makes positive exploration in knowledge innovation, accumulation and sharing. For instance, it has set up a series of measures to encourage employee's creativity, such as awards for a step in advance, awards for excellent employee. It rewards the successful employee, encourages employee to innovate and raise their knowledge creativity.

The company also realizes knowledge sharing is an important link in knowledge spiral. In a company, if added knowledge cannot be connected with the existing knowledge, or cannot be used, then knowledge has no value.

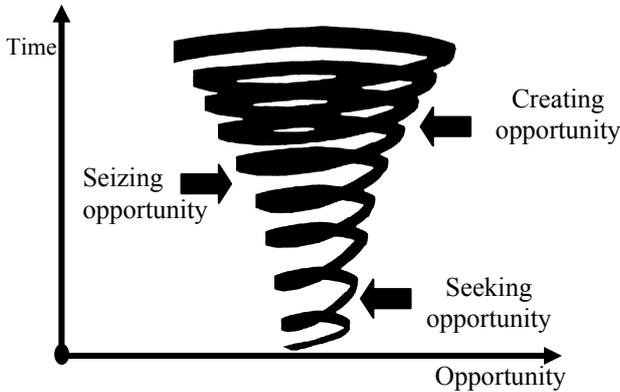
Beijing Future Advertising Corporation Company provides its employee convenient environment and constructs a harmonious atmosphere to share knowledge. The specific measures are: setting up company's intranet to offer a platform for employee to exchange and share knowledge; Establishing database of management system of registered customer, human resource information, as well as medium information to offer software support for employee to share knowledge; Encouraging free knowledge sharing within organization.

In order to advance knowledge spiral, Beijing Future Advertising Corporation makes the shared knowledge standard, visible and become part of company's knowledge accumulation. It has set up well developed mechanism of knowledge accumulation, formed database of customer data information, medium data information and profession data information, as well as established scheme base including customer solution scheme, medium application solution scheme and product plan solution scheme. All of these have established solid foundation for higher level knowledge spiral of company's.

*B The Opportunity Spiral*

Opportunity refers to the situation which can make realistic of some specific objection. It is the connection of time and space which is useful or helpful to some specific activity. The characteristics of opportunity are ordinary, occasional, developed and time limited [7].

The opportunity spiral shows as follow:



**Fig.2 corporation Opportunity Spiral**

Because of change of market environment and competitive rival, there is always unbalance in which opportunity is procreated. For example, because market demand is unbalanced, there are consumption grads which give opportunity to transmit product, technology and management mode from a mature market to a draggled market. Other examples as, the competitor's deficiency is always an opportunity because of the unbalance of the capability of company. A company needs to find opportunity from such unbalances.

After seeking opportunity, company need amply use it. This is seizing opportunity. Opportunity is a combination of objectivity and subjectivity. The objective facet depends on resources. Company will have objective qualification after finding opportunity. The subjective facet depends on the company's ability to use resources. Only if company has the ability of using resources, will it seize opportunity more effectively.

Though opportunity has the characteristic of contingency, while contingency exists in necessity in the course of something's development. Contingency is connected with and changes into necessity mutually. Necessity decides the direction of thing's development, but it needs contingency to carve out its way. Thus company should be good at using various realistic conditions to create opportunity at the same time of seeking and seizing opportunity.

When the passion for IT has passed, capital changes their goal and enters medium estate. Under such background, Beijing Future Advertising Corporation Company speeds up by using opportunity.

Beijing Future Advertising Corporation Company has firmly erected the notion of leading in the market. The company does not negatively implement the management mode of company sells whatever medium has, but starts form the market and insists that company does whatever customer wants. Through collecting data, analyzing data

of media, advertising selling and domestic economic change index which supplied by CCTV research and consulting center, it can have foresight and seek market opportunity effectively.

Not every company can fully use the opportunity because of the restriction of resources and abilities. Beijing Future Advertising Corporation Company has made a series of adjustments, including organization structure, business process, etc. All of these actions have made a foundation for it to grasp opportunity. For instance, at first the customer center's structure was in confusion because of the unclear dividend of job. Then the company made some changes. It divided the work. Everyone just do his/her own business. This change made some of the centers care only about themselves. The company made a second change and set up something called as "eight drive carriage with both division of labor and cooperation". It is proved well.

In order to create opportunity, Beijing Future Advertising Corporation Company has taken some measures, including:

(1) Improving the level of medium resources and increasing the value of medium advertisement. The company's media resources mainly come from the channels and programs of CCTV. Only through managing well these channels and programs, can the company attract enterprises to advertise in CCTV.

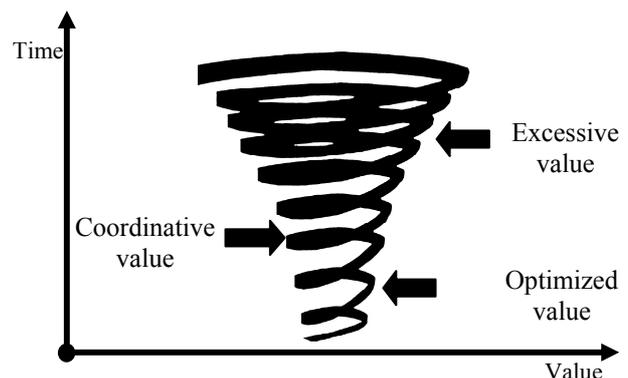
(2) Increasing the amount of customers and creating market opportunity through improving customer center. Customer center is the main organization that takes the responsibility for the company's large scale extending campaign, for enlarging company's and medium's brand through it's work to attract more customer.

*C Value Spiral*

Bowman and Ambrosini introduce and differentiate two types of value at the organizational level of analysis: use value and exchange value [8].

When we talk about value creation, usually we refer to three aspects: (1) what value creation is; (2) the process by which value is created, and (3) the mechanisms that allow the creator of value to capture the value. The creation of value is realized through a series of value activities which form the value chain. Michael Porter divides the activity into two kinds: basic and supplementary.

The value spiral is showed as in the following figure:



**Fig.3 corporation Value Spiral**

Value spiral is realized by optimized value, coordinative value and excessive value.

The value gained by optimizing the links of value activity is called optimized value. For example, in JIT production, through eliminating resource waste from the procession of product design to product selling, the company will effectively create profit by using limited resources and realize "zero deposition" and "zero defective quality".

Coordinative value is acquired through coordinating each value activity in value chain. The value activities contact and affect mutually, and certain value activity's condition always affects the next value activity and even the entire value chain. It is similar as the principle of wooden barrel in which the water containment of wooden barrel is decided not by the longest wooden strip, but the shortest one. Because corporation's profit is affected not only by certain one or several value activities, but also the coordination between these activities, it is important to coordinate the connection between value activities.

When company shifts the focus of value production according to the change of environment, it will get excessive value. As for knowledge-based enterprise, excessive value is produced mostly by the value activities of high value added and knowledge concentrated. But this does not mean that enterprise should centralize its focus of value production on those high value parts at the beginning. It should decide according to the external environment and the condition of the enterprise itself.

Beijing Future Advertising Corporation Company increases its value mainly in the there following aspects:

First, optimizing the link of value and getting optimization value. The value chain of Beijing Future Advertising Corporation Company can be simplified as:

Medium and customer analyses → Medium purchase → Plan of product sale → sales and service

The above four links contact mutually and are the core of value added activity. The company increases profit and the value of company through optimizing each link in the value chain. For instance, it has carried out many measures in medium and customer analysis, and so greatly raised the preciseness of analysis; adopted INFOSYS software to perfect medium analysis; and made the analysis of customer more accurate through coordinately preparing the customer center's mail, fax and business data.

Second, coordinating the connection of every link and reducing the friction between them. Good communication mechanism can reduce the friction of each link and to save cost. Through corporation reports, casual communication and telephone communication, information is insured to transmit unblocked.

According to the change of market environment and the different requirement of the period, Beijing Future Advertising Corporation Company shifts the focus of value creation to the links which can create the most excessive value. At its initial stage, the company reinforced the link which can produce the most value at that time, that is to say, advertising promotion. With the

development of the company, the company makes its market net and service technology perfect and offers more excellent service to attract customer.

#### IV. THE GENERAL MODEL OF MULTI-DIMENSION SPIRAL

The multi-dimension spiral model of Beijing Future Advertising Corporation Company in some way explains the mode of enterprise in knowledge-based economy, especially of knowledge-based enterprise in knowledge-based economy.

Technologies diffuse throughout industry faster than ever before, making it harder to sustain technological leadership. Product life cycles are compressing, the product creation process is shorter than ever before, and the consumer now expects that new products will be available nearly every time he or she shops.

Arie De Geus points out that we are experiencing a social transformation from capital society to knowledge society. All the corporations living long have the same characteristics, they are good at learning, can react fast to the environment, can think creatively, modify their plans and increase their competition [9].

Compared with traditional enterprise, knowledge-based enterprise has its own characteristic. Generally speaking, the value of product in traditional manufacture enterprises is easily estimated, with big shifted value and with relatively small innovative value added. Different from traditional enterprise, emergence and development of knowledge-based enterprise are fast. According to its characteristic, this article puts forward the multi-dimension spiral model of knowledge-based enterprise, that is to say, with the procession of time, the enterprise shows a spiral and accelerating development trend.

According to the characteristics of knowledge-based corporation, multi-dimension spiral model is forwarded. In this theory, knowledge-based corporation will accelerate up or down with the passing of time.

There are several theoretical views about corporation core competency from different points. For example, the resource theoretical view considers corporation core competency is the combination of corporation's different abilities. While the human resource theoretical view thinks corporation should train its employee to develop its core competency. The cultural theoretical view stresses that idea, thinking mode should be creative to build a different corporate culture. At last the technological theoretical view describes the corporation core competency as the share of patents and explicit technology.

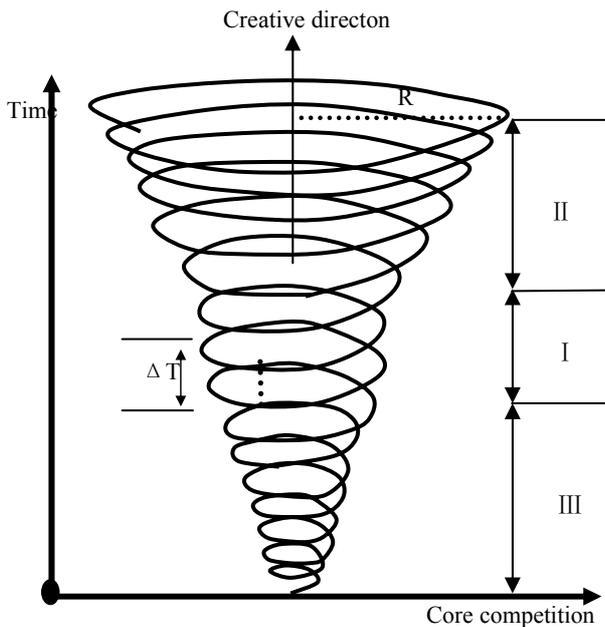
Researchers Gary Hamel and C. K. Prahalad have made a contribution to helping managers with these challenges by articulating the concept of "core competencies." [10]Essentially, core competencies define the identity of the organization; "who we are" and "what we are good at." In sum, core competencies:

- provide access to a wide range of markets (through sometimes diverse products),
- form the basis for new businesses (successful new businesses are based on core competencies),

- make contributions to the key bases of competition in the market-place,
- should be difficult to imitate because they embody harmonization of technologies and other important skills.

The corporation core competency of traditional manufacture industry manifests in the competition of products, that is to say, the final products which the corporation does its best to be the leader in the market. Generally speaking, the traditional products in manufacturing industry are low value-added. Therefore traditional industry develops slowly. Different from traditional industry, the corporation core competency of knowledge-based corporation manifests not only in product market, but also more in knowledge which it create, use and product. The value of knowledge-based corporation accelerates faster than the traditional industry. Also faster are the speed of knowledge-based corporation's establishment and development. For example, the value of some corporations in IT industry far exceeds lots of some big traditional manufacture corporations.

The multi-dimension spiral model of knowledge-based corporation is in the following figure:



**Fig.4 multi-dimension spiral model of knowledge-based corporation**

In the chart above, transverse axis represents core competency and vertical axis shows time.  $\Delta T$  represents the change of time and  $R$  is the core competency.

The multi-dimension spiral model goes through three stages:

The first stage is the unchanged spiral period in which the enterprise's core competency keeps steady. Because the development of knowledge-based enterprise is in a course of ailing against the current, not move forward, then backward, the unchanged stage will not last longer. The development will develop fast, or shrink rapidly. According to an American newspaper, from January to

march in 2000, there were 176 enterprises entering into stock market on Nasdaq, but at the same period there were 173 enterprise be kicked out. The development of enterprise is in a rapid change.

Two stages are formed by going upward and downward from the first stage. They are spiral accelerating and decreasing stage. On these two stages, with the passing of time, the enterprise's core competency is accelerating and decreasing continuously.

The characteristic of knowledge-based enterprise decides that Matthew effect will exert its effect. The "Matthew effect" refers that once advantage or disadvantage appears, the condition will prick up. The leader will go ahead further and the straggler will lag even behind. Winner-take-all situation will emerge.

What strengthened "Matthew effect" is the incompatibility law of technology market compared with traditional product market. In the traditional industry, certain traditional product can satisfy the different level demand of consumer by using expensive new technology, general industrial technology of different levels, or even handworks. As for knowledge product, once a kind of new high technology appears, this technology will replace the original technology. For instance, Microsoft succeeded in producing MS-DOS operation system in 1981. Soon it replaced other software and nearly rewrite the development history of entire information estate. When Windows 95, Windows 98, Windows 2000 came out in succession, windows series rapidly replaced MS-DOS, since windows have broken through the defections of DOS, such as MS-DOS only running a program at the same moment and the EMS memory restriction of only 640Ks. The incompatibility law of technology market decides the leading enterprise will become the leader in the enterprise ecosystem. Its product will become standard product and other enterprises develop supplemental products on its foundation. Then the enterprise leader speeds up, but its competitor will more or less be weakened, even perished.

The result of "Matthew effect" reflected in the multi-dimension spiral model is that spiral accelerating and decreasing stages will spin in increased speed. Assume the change number of the core competency is  $R - 2 - R - 1$ , noted as  $\Delta R$ , then in the spiral accelerating stage the value of  $\Delta R / \Delta t$  will move upward and in the spiral decreasing stage the value of  $\Delta R / \Delta t$  downward, both of them with accelerated speed. It can be induced that the development of knowledge-based enterprise presents an accelerating development.

The multi-dimension spiral model of knowledge-based enterprise is directed by creativity which is the important to set up, improve and apply the core competition. Creativity is the sole of a nation's development and is important to a country's flourish.

V. REFLECTIONS OF THE MODEL ON KNOWLEDGE-BASED CORPORATIONS IN OUR COUNTRY

*A Carrying out knowledge management*

The coming of knowledge-based economy makes the value creation in corporation rely more and more on knowledge developing, using and creating through which corporation can gain the high value in the value chain. Most corporations have to manage knowledge.

Davenport points out that the two most important aspects include two classes, that is to say, knowledge creation and knowledge use. A corporation without knowledge creating just likes a river without its origin and will face challenges [11].

Usually knowledge creation stems from individual. Corsini points out that there are five aspects which may influence individual's study and creativity.

These five aspects include:(1)Knowledge expressed which is possessed by the individual; (2)Personal intellectual skill which can help to apply conception and rule to reality; (3)Skills to recognize which include recognize, code, recall and think; (4)Manners which influence a person's selection; (5) Skills to operate which can smooth the whole business process [12].

The knowledge created by individual should be shared by the whole corporation. Therefore Nonaka puts out the conception 'Bar' which means to create an environment and the knowledge will come naturally. 'Bar' is the environment to share, create and use knowledge. According to the difference of classes of knowledge transformation, 'Bar' can be classified by four classes: initiative bar, dialogue bar, system bar and practicing bar. [13].

Many corporations have realized this point and do some research. For example, in order to improve the share of knowledge among employee, Motorola has taken the following measures: (1) Persons who go out to learn should make a report to share the skill and knowledge with others through meetings; (2) Engineers after a trip should report to others about what they learned through the trip; (3) Apart from arranging lecturers to share knowledge with the employees, Motorola also let employee to set up knowledge sharing institutions.

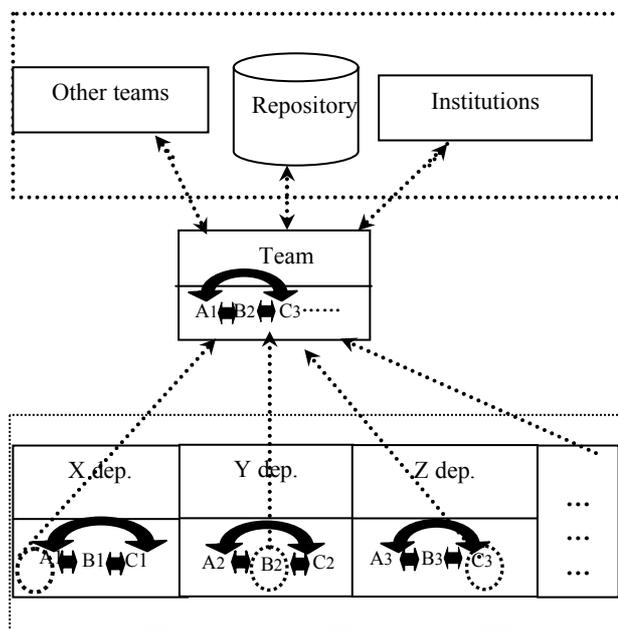
Project team, as a place for cooperation of knowledge workers, are more and more adopted by large corporations. 235 teams were successively established when Boeing Company developed 777-Airliner. Some large corporations, such as IBM, GE, AT&T have over one hundred teams.

Not only can these teams provide chances for their members' mutual learning, but also can make tacit knowledge gained by members in teams explicit so that it can be mutually shared by its staff and executives. Peter M. Senge ever pointed out that team learning is extremely important, where exists the relationship just like a Chinese proverb: with the skin gone, what can the hair adhere to, that is, without team learning, there is no organization learning [14].

Based on interactive relations of members, we construct the whole framework of knowledge management of team project.

This model includes three levels: the member level, the team level and the enterprise level. The three levels

connect with each other. The model is as the following figure:



**Fig.5 Outline of knowledge management**

At the member level above, A1, B2, C3... are picked out from functional departments of X, Y, Z... to form a project team. The communications and cooperation produced by affinity at the individual level mainly including A1, B2, C3... as their communications with other members from their own departments.

At the team level, within the whole team, team's learning comes from its member's learning and communications, while the project team provides a favorable environment for share and creation of tacit knowledge.

At the enterprise level, various forms of documents and files of the team are transferred to its repository. When team's members communicate with other members of the whole enterprise, with other teams or knowledge management departments, team knowledge is transformed to the enterprise knowledge.

(1)Support by information management. Knowledge management should be supported by information technology. It can be manifested in two manners. The first is to acquire knowledge from data base, expert system, business intelligence and so on. The second is to assure knowledge sharing through the technology of internet, intranet, extranet and technology of CSCW.

(2)Support by human resource management. Peter Durcker thought that knowledge workers must be regarded as partners, not as employees. This kind of fellowship is also mutual benefits for both sides. This relationship must get its foundations on the approval of the value of knowledge workers by superiors of knowledge teams. Management of team members not only depends on each system of human resources management formulated by enterprises, but also involves in human resources management within the team.

(3)Support by organization. Organizational structure is important to promote knowledge management. The roles

of organizational structure include: to provide chains for communications, to establish knowledge management departments, to appoint knowledge manager, and to support common practical communities. The organizational forms within a team to promote knowledge management include: project team meetings, organizational laws and institutions of project team, communicative tactics of project team.

### *B Sizing the market opportunities and developing Creative Industries*

The wave of knowledge-based economy makes knowledge become the important factor to create fortune. Toffler has predicted that China will be the ally leader in the third knowledge-based economy. The financial crisis in 2008 challenged the Chinese manufacture industry. Opportunity burns from crisis. This opportunity maybe brings out the spurt of knowledge industry or creative Industry. John Howkins points out that the creative Industry in the world creates about 22 billion dollars a day and increases by 5%. In some country, the speed is even faster, with America by 14% and England 12% [15].

The conception of creative industry is first used officially by Department of Culture, Media and Sports in England in its research report 'Mapping the Creative Industries'. Creative industry in England is classified into the following: 1. Advertising, 2. Architectural designs; 3. Art ware and ancient artistic market; 4. Manual art ware; 5. Design ; 6. Dress design ; 7. Movies ; 8. Interactive entertainment software art; 9. Music; 10. Television and broadcast; 11. Performed arts; 12. Publishing industries; 13. Software industry.

But the creative industry conception has not officially been accepted at present by different countries. For example, US has not officially accepted the creative industry. In US, creative industry generally refers more to a new economy than to the cultural industry.

Harvard University economist Richard Caves makes a definition of creative industry as, creative industry is these which provides commodity and service relating to cultural, artistic and entertainment. According to the Richard Caves' classification, the creative industry includes: Books and magazine publication; Visual art (drawing and sculpture); Performing arts (play and drama, music and dance); Acoustic art product; Movie and television art; Clothing, toy and game and so on. This definition basically limits creative industry to cultural industry [16].

Compared to the definition of Richard Caves, John Howkins gives a more widely definition in "The Creative Economy: How People make Money from Ideas" in which Howkins considers creative industry include four big kinds actually: copyrights, patents, trademarks and design. John Howkins's definition surpasses the cultural industry conception, and should be the definition of new economy (innovation economy), containing nearly all innovation activity [17].

Creativity industry has the characteristics of technology compressed, high value added, few environmental pollution and low resource energy consumption. It is the strategic choice of industrial

structure promotion and transformation of economical growth way. Creation is the life line of creative or enterprise industry. A good creation may increase the product' added value, make traditional industries and the traditional product glowing with new vitality. Creation's benefit is significant. The most typical illustration is the IBM's patent management. Through its patent permit, IBM got profit from this service from 30 million US dollars in 1990 to 1 billion US dollars.

Taking Beijing as example, the cultural creative industry is the main goal of the 11th Five Plan in Beijing. On December 10, 2006, the first session of "International cultural creative industry exposition in Beijing, China" took "creation, technology and culture" as the subject in the Great Hall of the People. The rich resources of technology, culture, talented person and information and so on provide powerful support for the Beijing cultural creative industry. At present, some cultural creative industry area construction also wins initial success, Beijing Numeral Entertainment Demonstration Base, Zhongguan Village Creativity Industry Forerunner Base, Beijing DRC Industrial design Creative Industry Base and so on.

### *C Realizing the corporation value added*

Michael Port believed that enterprise's competition advantage exists through a series of activities, that is to say, the process which the value forms. Therefore, Port proposed the value chain theory as a strategic tool to analysis cost to discover the advantage of company in value production process [18].

According to Port's value chain theory, the value chain is not an independent active set, but is an active constitution system which depends on each other mutually. The value activities are connected by the value chain internally. The value chain theory considers that the enterprise obtains profit continually from the unique superiority in some specific strategic link on the value chain. If these key strategic links are controlled, then entire value chain can be controlled.

Nike has production bases in all over the world, but it has not its own factory. Through using competitive advantages in the links of design and sell by itself, Nike integrates the resources, reduces the production cost, and completes internationalization layout of its production.

In the information industry domain, Dell Corporation also is so. Dell invests limitedly in the computer hardware and software, but develops mostly in customized assembly and marketing ability, therefore becomes the globally well-known computer brand.

The domestic enterprise in China is located mainly in the low end of the value chain. At present, the center of global industry value chain has moved to the two sides of value chain. One side is the research and development, the design, and the other side is the sale, the service. These two sides which can get the profit rate at about as high as 20%-25%, usually are monopolized by the multinational corporations. But the middle sides which are committed to production can get the profit margin of only 5%. Most of Chinese corporations are engaged in the middle produces processing sides [19].

In 2008, the global economic crisis causes our traditional manufacture industry into a difficult situation. To deal with the great depression of manufacturing industry, Liang Xianping states that the Chinese manufacture industry should use the model of “6+1”. He believes that the industrial competition chain includes links of “6+1”. The so-called “6” include product design, raw material purchase, warehousing transportation, order form processing, wholesale management as well as terminal retail sales. These six bulks can create the value of 90%, while the manufacture one can create value of only 10%. In international division of labor, most of China's enterprises are in the production link which is low in value, resources wasted and work exploited. In the medium and long-term, the Chinese government and the enterprises should jointly do their best to let the enterprise shift from “1”link to the high value added “6” links [20].

The value added theory is suitable to traditional manufacture enterprises, especially to the knowledge-based enterprises. After experiencing the network gold rush and network froth being disillusioned, the people realize that only some attractive concept is merely insufficient, the enterprises must have ability to create value.

In 2008, the whole world financial crisis spread all over the world, especially in the US. US financial crisis will make people to ponder the high tech enterprises' value and their future development direction. People usually thought that technical industry has immunity to the financial crisis, but this time this industry is suffering multiple extrusions actually.

Firstly, the matured company is weary in catering to the demand which reduces unceasingly. Secondly, the venture capital worries that economy will glide down for a long time, therefore they request the emerging company to reduce the expenditure. Last, the venture capital largely decreases support to this industry.

It was reported according to the overseas media, the risk investors in Silicon Valley declared that the financial crisis already spread to the technical domain. The risk investor's confidence has already dropped to the lowest level since 2004 since this university started its investigation. (Tang Feng, 2008) Take Shenzhen as the example, the increase rate of high-tech product exportation fell from as high as 40% in 2007 to 20% in November, 2008 [21].

The technical industry by no means has no luminescent spot. IBM Corporation issued its financial report recently saying that its financial situation is better than anticipated. Also did it say that it was self-confident for the whole year. Oracle also issued its financial report recently saying that its quarterly profit has realized 28%. These enterprises are precisely those which can truly multiply their value for the investors.

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