Determination of Basic Guiding Principle for Enterprise Management in an Over-speed Changing Environment

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Abstract. In the over-speed changing environment, the fundamental problem of the enterprises to solve is to find out what management thought and principles to be followed to realize the rapid development and to ensure the lasting success of the enterprise. Therein, the changing of the external environment and life shortening of the enterprises are the two basic environmental characteristics of the environment where the enterprise exists. Find out the guiding theories and principles during the process of management, and use these theories and principles to guide the enterprises to cope with these varied elements in a dynamic environment so as to gradually simplify the overall management of the enterprises, which is the basic characteristic of enterprise management today. The enterprise management is such systemized and acclimatized that the system theory and contingency theory become the two optimal basic principles for guidance of enterprise management.

Introduction

The dynamics and complexity of the external environment today bring uncertainty to the development of enterprises, as well as opportunities. The influence of the new technical revolution represented by information network, intelligent manufacturing, new energy and new material on the global economy becomes greater day by day. Therein, the information technology, particularly the development and application of internet technology, speeds up and promotes the profound transformation of production mode and development pattern with unprecedented width and depth. With the accelerating development of economic informatization and increasing presentation of new business model, the internet-enabling of manufacturing industry is becoming a general trend. In the over-speed changing environment, the fundamental problem of the enterprises to solve is to find out what management thought and basic principles to be followed to realize the rapid development and to ensure the lasting success of the enterprise.

Basic Environmental Characteristics for Enterprise Existence Today

Currently, the economic development and situation over the world has two main characteristics, which are concerned by the enterprises.

A. The External Environment of Enterprises is Changeable. The first characteristic is the change of the external environment of enterprises. Especially since 1990s, due to the
increasing fierce competition, the trend of world change obviously presents the following features:

- **Rapid change.** Some scholar said, the current world is developed at a speed ten times that of change. Definitely, the results of change in the last twenty years are nearly equal to that of change happened in the last two hundred years, which is mainly resulted from the rapid development of communication and information technology based on computer [1]. The internet economy and thumb economy develop at high speed and low cost, greatly promoting and speeding up the progress of other industries. In addition, the rapid transfer, collection, processing and application of information greatly improves the symmetry degree of information in transaction and the operation efficiency of global market, which is the main reason for such rapid change of the external environment of enterprises [2].

- **Great change.** The change is so rapid that the economic environment of the enterprises is changed historically. The new things that are hard for people to think or even not predicted several years ago spring up like mushrooms. Reorganization, mergers and acquisitions (M&A) continuously happened over the world. The imbalance between the local and the regional economy makes the change more obvious. The people’s consumption concept and the operation mode of the enterprises are differentiated in an astonishing degree.

- **Mutual promotion between the change and competition.** The change today is rather rapid in speed, great in amplitude, and multi-dimensional due to the diversity and super-intensity of competition so that the unpredictable external environment of the enterprises become more complicated and confusing. The market demand is increasingly diverse, and the unit for the life cycle of the products is changed from “year” to “month”. The technical progress leads to the frequent change of the production and service system of the enterprises, which has become a continuous event [3]. Andy Grove, the Intel president, vividly summarized the current change with a sentence that “the only thing that does not change today is change”. However, all these changes intensify the complexity of competition.

- **Great influence.** These changes not only lie in the wide influence based on the background of economic globalization and network-enabling. What is more important is generally their far-reaching significance. For example, the influence of the “global financial crisis” in 2008 on the economy of the countries over the world can only be declined with a considerable time.

To sum up, the change today is “fast in speed, large in scale, hard to predict, serious in vibration, and profound in influence”.

**B. The Life of the Enterprises is Shortened in Common.** The second characteristic is that the life of the enterprises is shortened in common with a great death rate. As counted by Nancy Susan, the student of Peter Senge, even in the best period in 1997 when the American economy grows continuously for 100 months, over 83000 enterprises went bankrupt all the year around. Besides, less than 10% enterprises can survive over 5 years in the New and High Technology Industries. This situation not only appears in America, but also in Japan. According to the data on the failed enterprises in Japan in 2008 released by The Tokyo Chamber of Commerce and Industry – a Japanese enterprise-credit investigation institution, in 2008, totally 15646 enterprises are closed down in Japan, increased by 11.0% compared with that in last year.
The latest report of Creditreform, one of the three largest Credit Consulting Companies in Germany issued on January 2, 2009, 29800 enterprises applied for bankrupt in German in 2008, increased by 2.2% year on year, with an average of over 2500 enterprises closed down in each month. The research report jointly released by the French research agency Deloitte and Altares said that in 2008, totally 54820 enterprises declared bankrupt, which was a new record in the last 17 years. The short service life of the enterprises is directly related to the external environment. However, the serious defects commonly existed in enterprise management are exposed in the conditions of intense competition and over-speed change [4].

**Basic Characteristics of Enterprise Management Today**

The Book of Changes is particular about unchanged element, changing element and simplified element [5]. Therein, unchanged element refers to that never changes with the change of conditions. It can also be understood as law, which is the basic principle guiding us for action. The changing element refers to that change with the change of conditions. However, the simplified element refers to the basic laws we master, that is, to simplify the operation of things in the condition of mastering the dynamic elements. The invention and development of computers is a good example. Therein, the relevant software is continuously upgraded, updated and developed according to the basic principles so as to finally simplify the working and living of the human beings.

It is the same to the management of enterprises, wherein, we must find the basic guiding theory and principle for management, and use these basic principles to guide us to cope with the changing elements in the dynamic environment so that the overall management of enterprises can be continuously simplified. The simplification is not only reflected in the standardization, sequencing and normalization of operation, greatly presenting as a relative demand in the situation of the great reduction of social cost and complication of the overall society.

Based on these basic thoughts, our basic task is to clean the actual characteristic of enterprise management today, and to determine the basic guiding laws for enterprise management in the ultra-intense competition and over-speed change condition in the “Management Jungle”.

In the view of internal need of enterprise development, the enterprise management is a systemized engineering. From the long-term and overall perspective, emphasis is only played on the function of certain management, and innovation only in certain aspect of management, which will not obtain sustainable return, just as described in cask theory, which says that no matter how much one plate is longer than the others, it will make no contribution on the water capacity of the cask. Contrarily, the shortest plate can limit the overall capability of the whole cask. In order to establish a sustainable long-standing enterprise and keep long-term success, the enterprise manager shall be able to think systematically, focusing on the establishment of systematical management system so as to deal with the changes with the unchanged.

In the aspect of the external environment pressure, the enterprise is developed in dynamic environment. Especially today, the changing element of the survival environment of enterprises becomes more complicated, the unchanged element is not the enterprise itself, but the basic law used to guide the enterprise management. The enterprise can only guarantee the advancement and flexibility of the development target by continuously adjusting its location with the change of environment, even before the change of environment. The change is constant, but the
unchanged is relative. The innovation of enterprise is developmental change, which is the fundamental of innovation many management practitioners and theorists emphasized.

**Determination of Basic Guidance Principles**

The above analysis indicates that the systemization and adaptation of enterprise management (actually, the more is the initiative change) is not only the basic requirements, but also the basic trend. Therefore, it is no doubted that the system and contingency theory are optimally the two basic guiding principles.

A. **Main Thought and Characteristics of System Theory**

The system theory is firstly put forward by the Austrian-American biologist Bertalanffy in 1940s, which forms a subject by further development of many scientists, including the general system theory proposed by Bertalanffy, the control theory by Norbert Wiener, the information theory by Shenergy, the theory of dissipative structure by Ilya Prigogine, the synergetic theory by Haken and the catastrophe theory by Thome.

However, we mainly highlight the guidance role of the system theory in management science and the application and practice of the specific principles with the guidance of the thought.

The system is an organic unity composed of several interactive and mutual dependent parts [6]. From nature to human beings, everything exists in the form of system, wherein, anything can be regard as a system or a part of another system. For example, the enterprise, as a system, can be as shown in Fig. 1.

![Figure 1. System structure diagram.](image)

The general system has the following main features:

First, overall collectivity. It means that the system is an organic unity comprising at least one subsystem. For example, an overall enterprise system is composed of the subsystems such as labor, strategy, supply, production, marketing, finance and technology. The great system consisted of various subsystems is not simply of the relationship 1+1=2. However, it may produce an effect of 1+1>2, even greater than 3. Vice versa, it can also result in the effect of
1+1<2, even less than 0, which is true to internal consumption of many enterprises. It is described with an organic unity, just for the purpose of highlighting the reasonable coordination and natural harmony of the overall system.

Second, correlation. The subsystems are related to each other more or less, and they move just due to the mutual effect based on the correlation, so that the subsystems are mutual dependent and restrained like the gears in a set and the whole system is in dynamic balance. Meanwhile, the subsystems and the parent system are mutual dependent and developed. That is, the subsystem exists in the precondition of the parent system. There is no individual subsystem without any mutual dependence with other subsystems in the parent system. In an enterprise, if there is any such department or a similar department, the said department shall be simplified. The correlation provides us the guiding principle for how to deal with the relationship between the different departments of an enterprise, how to conduct effective communication and how to promote cooperation.

Third, hierarchy and orderliness. The hierarchy and orderliness means the parent system is established with subsystems in certain form in one hand, and in the other hand, the subsystems of the parent system move according to certain rules and laws, which are determined by the characteristics of the parent system and the corresponding subsystem. Hierarchy and orderliness is also the concentrated reflection of system logic. In order to ensure an enterprise can operate efficiently, the reasonability of the organization structure shall not be omitted. Additionally, the organization relation and duty shall be defined according to the logic relationship of the enterprise system. Certainly, the duty covers the basic special responsibility, joint responsibility, and the responsibility of innovation and expansion.

Besides the characteristics on general, as an enterprise system, it has the following characteristics reflected through the nature of itself:

- The enterprise system has a clear purpose. Although the Kos, et al. studied the significance of enterprises in transaction cost and other aspects of economy, it is reasonable to say the significance of the enterprise in the actual economic environment covers its purpose. So, it is an effective method to realize the resource allocation in macroscopic level and to maximize the efficiency of resource operation in microscopic level. Therefore, the operation process of enterprise system in the two aspects is to realize the purpose of its existence. So, it is obviously different from the natural system and simplified impersonal system.

- The enterprise system is more complicated than the general system. For enterprise is an artificial open system, as well as a subject for displaying of the actual economy and life, it is intensely interactive with the external environment. Additionally, the various internal contradictions and the diversity of the enterprise itself make it of the specific complexity [7]. However, its complexity never means that the enterprise is unrecognizable and unclear. Actually, the enterprise is a contradiction set with several contradictions mixed and combined, and the tasks of the management theorists and practitioners are to recognize and solve the enterprise contradictions so as to ensure the enterprise is always in a dynamic balance. Many people simply emphasize management simplification. However, in the complicated enterprise system, the management often cannot be simplified, but the corresponding action shall be to clarify the complicated system so as to realize the ultimate simplification of management. Certainly, all these are based on the mastering to the logics of the enterprise system.
• The enterprise system has a unique environmental adaptation and reformation. As a whole, the development of enterprise represents the process of environment transformation. Since the ancient times, the forms of artificial environment transformation and combination are presented as similar enterprises or enterprises. For a single enterprise, it is more presented as the environmental adaptation. The enterprises capable of initatively realizing that the enterprise is the subject to change and create an environment can gain lasting success in competition. Liu Chuanzhi from Lenovo leads the Lenovo Company and the competition of the industry with the concept of changing the small environment without changing the large.

• The enterprise system is uniquely characterized by innovation. Innovation is a permanent subject for enterprise management, but the subject can only be astonishing in the enterprises. Various organizations existed in the society such as government, associations and troops do not tightly connect to the most direct and basic requirements of the human beings. Only the enterprise can closely make the various demands of human beings become valuable, and presents advancing, prompt, rapid and diverse innovation capability during the process [8]. It is just the lasting innovation of the enterprises strongly support the curved development of the overall society.

It is thought that the enterprise system is composed of labor, property and subjects. Later, the new intangible element, information, is added. Actually, the other two virtual elements shall be included: management and time. Although they are virtual (they are defined with “intangible” and not certain, so we use the word “virtual” instead), the function and strength can be said to be decisive.

Generally, the enterprise system can be divided into two subsystems, including the “actual” subsystem comprising labor, property, substance and information, and the “virtual” subsystem consisted of management and time. The application of system management concept and method in enterprise management is developed with the grow-up of system science. Both of the “scientific management” put forward by Taylor, the flourished development of system engineering, and the wide application of ERP management system based on computers and network consciously or unconsciously use the system theory for guidance. Blindly striving for innovation is a potential psychological feature of the managements and people. In this situation, a lot of managements often neglect the basic management theory – initial application and development of system theory. Actually, the birth of any leading theory and great practice undertaking cannot lack the support of basic theory which is the basic law to be followed for human existence and development.

B. Main Thought and Characteristics of Contingency Theory. Contingency theory is the management theory based on the empirical theory in 1970s. In 1974, Fred E. Fiedler, the famous American Psychologist and management specialist nowadays, put forward “Contingency Leadership Theory” in Fiedler Contingency Model – New Direction of Leadership Effectiveness, which established a new stage of western leadership theory. When many researchers are still discussing which leadership style is more effective, Fiedler proposed the Contingency Model for effective leadership based on a great of study. He thought that any leadership style is possible effective, with the effectiveness completely determined by the environment where it is located.

Firstly, Fiedler put forward the following three environmental factors influencing the effectiveness of leadership style:
• Relationship between the leaders and the members. Definitely, whether the leaders are popular, respected and reliant among the lower-level staff, and whether they are attractive to lower-level staff and the lower-level staff are willing to follow them.
• Position power. That is, if the leader is provided with adequate definite power and authority at the position, strongly supported by the upper-level leader and the whole organization, and has a great effect on the hiring, firing, discipline, promotion and wage increase of the staff.
• Task structure. It refers to whether the task to be completed by the team is clear, any ambiguity exists and what is the situation of normalization and sequencing.

Fiedler considers that the effectiveness of leaders can be actually enhanced in two ways: the first one is to replace the leaders to adapt the environment, and the second is to change the situations to adapt the leaders.

Fiedler model emphasizes taking leadership behavior according to the requirements of effective leadership, but not what action shall be taken according to the quality of the leaders, which opens a new direction for the research of leadership theory. As the Fiedler model shows, no absolute good leadership style exists, and the enterprise leaders must have adaptability, capable of adapting the changing environment. Meanwhile, it also reminds the managements to appoint suitable leaders according to the actual situations.

The generalized Fiedler Contingency Leadership Theory is to deal with the changes according to the development of the environment and the internal conditions of the enterprise or organization for management. No general optimum management theory and method exists. Contingency management is to determine the most effective management mode according to the function between the independent variable of environment and the dependent variable of the management concept and technology [9]. Definitely, as it is well known, specifically analyze case by case, and deal with accordingly. The basic opinions on generalized contingency management are mainly as following:

First, in the thought structure of contingency management, certain function relationship is considered between the management and environment, but it may not the causal relationship [10]. The called function relationship is that the management concept and method as dependent variable varies with the independent variable of environment. The function relationship can be interpreted as the relationship of “if”. That is, if certain environmental situation exists or occurs, certain management concept and method shall be taken.

Second, the opinion of organization management of contingency theory insists on that an organization is an interactive “open system” affected by and reacting upon the external environment [11]. Therein, the organization management must be consistent with the organizational task, target, the requirements of organization members and the external environment, seeking for cooperation but never following the same pattern.

Third, the contingency theory also inherits and cites the “Approximate Solution of Bounded Rationality and Sub-optimization” Theory proposed by Simon, emphasizing that the adaptive capacity and adaptability to changes are the basis of development and innovation, paying attention to the management cost and the reality of management, never blindly striving for “optimization”.

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Conclusions
In the over-speed changing environment, the systemization and acclimatization of enterprise management are very important to keep the vitality of enterprises. Although the system theory and contingency theory are not a new management theory, they can provide the basic guiding principle for the enterprises in the current complicated and changeable external environment, playing an important role on the guidance to the management practice. Therefore, they are the basic principles for enterprise management that the managements should follow and master. In long-term run, if an enterprise is expected to take precautions, to rapidly cope with the changes, to make preparations for the potential bottlenecks, to be located at the leading in competition in such an adverse external environment for a middle and long term, and to establish a “one-hundred-year enterprise”, it shall use the system theory and contingency management theory for guidance to better and rapidly manage the staff in all aspects, to rapidly enhance the management strategy of the overall team and to establish a completely-systemized management system of enterprise.

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References