

# Study on the Governance Mechanism of Technology Enterprise Based on the Improvement of Independent Innovation Ability

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**Abstract:** The core of building innovative country is the improvement of independent innovation ability. Current researches on the independent innovation ability focus on mainly the influence of macro-environment and the role of the corporate governance mechanism. However, there is short of study on the relationship among the three of them. This paper takes technology enterprise as an example, analyzes the relationship of management environment, governance mechanism and independent innovation ability, and then acquires the model describing the effect among the three of them. At last, we propose that it is reasonable for technology enterprise based on the improvement of independent innovation ability to design the governance mechanism compatible with management environment, focus on incentives for human capital and create innovation culture inside the enterprise.

**Key words:** Technology enterprise; Management environment; Governance mechanism; Independent innovation ability

## 1. INTRODUCTION

Technology enterprise mainly engages in researching, developing and producing high-tech products and relevant serving by technician and takes innovation as development power (WANG, QIN, 2007). It holds more and more important status in the national economy of many countries, and exerts remarkable economic and social benefits. Owing to its own characteristics, there are some differences in corporate governance between technology enterprise and common enterprises. In the traditional management theory, business operators are regarded as a self-interested agent, who controls enterprise resources, and knows the business operation and benefits. Such information asymmetry is detrimental to the interests of the principal. When goals of the principal and the agent conflict, and information asymmetry exist, the so-called "agency problems" appears (LI, 2004). The cost due to client suspecting whether the representative operates according to the interest of shareholders and the supervision and restraint expenses that is used to prevent the above behaviour compose the agency cost. The corporate management mechanism is to reduce agency cost and solve agency problems. As one of the most prominent characteristics for technology enterprise, the importance of human capital to the enterprise survival and development causes that how to provide incentive to human capital substituting for reducing the agency cost between shareholders and the manager

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has been the technology enterprise governance focus. To the capital owner unilateral governance mechanism that the power is based on non-manpower capital and pursues shareholders benefit maximization, it will not achieve (HUANG, LI, 2005). This paper aims at how to design the management mechanism on the basis of its own characteristics for the technology enterprise based on the improvement of independent innovation ability.

## **2. MANAGEMENT ENVIRONMENT AND GOVERNANCE MECHANISM**

The corporate governance mechanism includes the internal governance mechanism and the exterior governance mechanism. The former embraces the board of director, executive compensation and equity structure; and the latter that primarily restricts behavior of the internal controlling shareholders and senior executives by way of external competition, generally includes the market for corporate control, manager market and product competitive market.

The effectiveness of governance mechanisms is inherent in management environment. If the governance mechanism and management environment don't coincide, the validity of governance mechanism would be impossible to discuss. There are two ways to perfect governance mechanism effectively: one is to accommodate the the governance mechanism to management environment; the other is improving factors of governance environment that influence the role of governance mechanism. If formulating all sorts of governance mechanism isolately, perfect certain mechanism merely, or blindly conducting "system transplantation", it is difficult to play governance mechanism effectiveness.

The selection of corporate management modes is the result of rational choice that people make in established constraint conditions ,namely certain social system environment. Social system environment includes political system, economic system, legal system, cultural features and historical factors. The change of social system environment will cause the relevant change of corporate management modes.

### **2.1 Political system**

In the process of system transition, the state's influence on the economy is remarkable, this is the characteristic that should be noticed among management environment. The effectiveness of the board of directors and the control market relates to the equity structure which depends on the economy, government intervention, and other factors. Competitive manager market requires the government not to intervene the human capital market. The competition of product market is independent relatively, although the product market less subject to other institutions, the premise of its validity is also the government's less intervention. All in all, the political system is the most fundamental environmental factor that influences the effectiveness of corporate management mechanism (YU, 2007).

### **2.2 Legal system**

The legal protection for investors and ownership centralism are key factors to judge a corporate governance structure (VISHNY, 1997). First, to establish and perfect the system for IPR (i.e. intellectual property rights) management and protection makes operators follow in the business operations relevant IPR; Second, strengthen the IPR management and protection in the flow of scientific and technical personnel, and avoid leakage incident caused by undertake transfer of personnel; Third, implement intellectual property protection strategy and give play to IPR especially patent strategy in the market competition.

### **2.3 Cultural tradition**

As informal institutional arrangement, cultural tradition controls people's behavior, directly affects the expectation of system gamer and the selection of corporate governance modes, the influence of economic system and historical factors on corporate governance mode is obvious.

To sum up, corporate governance mechanism is the function of management environment. It should be noted that the multiple factors above are interacting and cross-cutting and determining the corporate governance modes together (PENG, 2003).

## **3. GOVERNANCE MECHANISM AND INDEPENDENT INNOVATION ABILITY**

Corporate governance mechanism has a profound influence on enterprise independent innovation. Jensen (1993) proved that enterprise internal control mechanism produces an impact on the allocative efficiency of the R&D resources through data (JENSEN, 1993). Hitt etc, analyzed the relationship between the enterprise control market and the innovation, and found that the difference of enterprise internal control mechanism lead to different innovation choice (HITT, HOSSKISSON, JOHNSON, MOESEL, 1996). Osullivan (2000) concluded that the corporate governance structure supporting innovation should provide system guaranty from the three aspects that are the financial support, organization conformity and insider control through reviewing characteristics of the enterprise technology innovation (Osullivan, 2000).

Simply possessing enterprise resources such as financial capital, human capital and social capital does not guarantee enterprise succeeded in carrying out independent innovation, effective enterprise resources management is the warranty to be creative in the dynamic quickly environment, and is in favor of improving enterprise independent innovation capacity.

(1)Different corporate governance modes determines different innovation motive. In Anglo-American mode focusing on the exterior governance, the management has greater self-determination and power over the input of innovation, for their own interests and enterprise long-term development; For Japan and Germany mode primarily the internal management, the management has limited jurisdiction, it lacks of impetus to innovate, and the approval procedure for innovation project is relatively complicated.

(2)Different corporate governance mechanisms influence the supply of human resource. Anglo-American model mainly hires talents from the manager market, most of them have formal training and can generate innovation inspiration; at the same time, Japan and Germany mode select talents from the internal generally, the selected people are familiar with enterprise business and have stronger cultural identity, however it is unfavorable to the enterprise innovation because of limitation to enterprise inherent thinking.

In addition, different corporate governance modes also affect the enterprise fund-raising means and the enterprise's R&D investment.

As stated previously, the governance mechanism plays a key role in enhancing enterprises independent innovation ability(GUO, LI, 2006).

## **4. MANAGEMENT ENVIRONMENT AND INDEPENDENT INNOVATION ABILITY**

Management environment impacts the formation and enhancement of enterprises independent innovation ability. Jia Wenchang (2006) thought external environment factors is the main problem of restricting China enterprises independent innovation ability insufficiently, and as he shows the legal environment and market environment aren't suitable to the need of independent innovation(JIA, 2006); Zhao Jianying and Liang Jiahua (2006) argued that the external environments provides merely an opportunity and pressure for enterprises independent innovation, the internal factors are the precondition(ZHAO, LIANG, 2006);

beyond that, other scholars analyzed the relations between management environment and the independent innovation capability from both theoretical and empirical view.

The independent innovation ability of China science and technology enterprise is weak, that is influenced not only by the external environment factors including mainly the market environment, national innovation system and intellectual property protection but also the internal containing principally the R&D investment, human capital and enterprise system.

From the external environment, although China gradually formulates and implements a number of policies relevant independent innovation, it is not perfect. First, lack fair market competition environment. Enterprises adopt different economic systems because of the difference of their ownership or geographical position. At a certain stage, this policy helps fuel economic growth, but its negative effect is increasing. In addition, serious monopoly existing in some industries or technical fields causes competition insufficient. Such innovation environmental issues have become the major factor affecting the inherent motivation of enterprise independent innovation. Second, the new independent innovation system in which enterprises play the leading role and enterprise-college-research integrate, has not been established. And third, for some relevant regulations and laws, the inspirit function for independent innovation is not fully brought into play, or it doesn't adapt to the demand of independent innovation. Taking Government Procurement Law as an example, it doesn't embody the stimulative effect of government purchase to independent innovation.

From the internal, low spending on research and development and the human capital stimulation inadequacy pcis self-directed innovation capability is not suitable to improve the capability of independent innovation.

## 5. RELATIONSHIP BETWEEN MANAGEMENT ENVIRONMENT GOVERNANCE MECHANISM AND INDEPENDENT INNOVATION ABILITY

While many scholars have contributed to study the relationship between management environment and independent innovation ability and the relationship between management environment and corporate governance mechanism, the study on the relation and the interaction theory mechanism among the three is still in a vague condition, but plays an increasingly important part in raising independent innovation ability for Chinese enterprises under transition.

According to the above analysis, it is not difficult to draw the conclusion that: management environment is the foundation of governance mechanism; governance mechanism determines the enterprise independent innovation ability; management environment impacts the formation and enhancement of independent innovation ability in several ways. The relationship among them is shown in Figure 1.

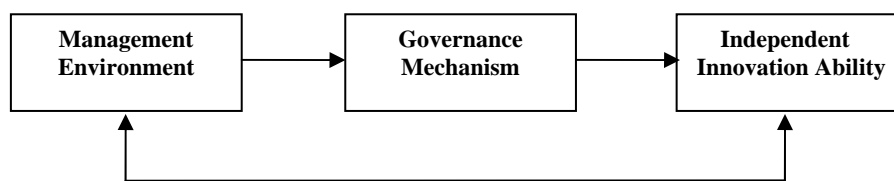


Figure 1 The relational model of management environment governance mechanism and independent innovation ability

The correlation among management environment, governance mechanism and independent innovation ability laid the theoretical foundations for the study of corporate governance problem of science and technology enterprise. The relationship shows that corporate governance mechanism will play its validity and promote the improvement of independent innovation ability if it is coordinated with the management environment, at the same time, regulating and improving the external management environment also plays a very important role in improving self-directed innovation capability. Only depending on improving the environment or blindly applying a certain kind of governance mechanism to improve the ability of

independent innovation will fail to solve enterprises issues. Only to set out from the fundamental and start from the basics, can make the enterprise independent innovation ability get cogent strengthen.

## **6. COUNTERMEASURES FOR THE CONSTRUCTION OF THE GOVERNANCE MECHANISM OF SCIENCE AND TECHNOLOGY ENTERPRISES**

The enterprise independent innovation ability is the foundation of the state. The key to enhance enterprises independent innovation ability lies in the enterprise governance mechanism that must adapt to management environment where the enterprise locates. It is necessary and significant to balance the relationship among the three. Only the governance mechanism designed on the basis of its management environment can make the enterprise independent innovation ability constantly improve. Meanwhile, don't ignore continuing to create management environment in favor of independent innovation.

### **6.1 Establish adaptable corporation governance mechanism**

As with other system changes, the formation and changes of the corporate governance mechanism model has the characteristics of path dependence and is affected by specific political system, legal system, economic system, cultural tradition and historical factors, etc. High-tech industries governance mechanism must pay more attention to stimulating the management and the core technology personnel and guarantee the negotiation ability and discourse power of the human capital owner.

In the micro level, the enterprise locates in different inside and outside environment in different growth stages, and so the corporate governance modes is not the same. At the start-up period of science and technology enterprises, small size generally and not high to the requirement of funds, technology and management ability, the enterprise owner can achieve corporate governance by way of cooperating with other minority. As the enterprise grows up, on the one hand, the enterprise needs more capital and technology to meet its self-development; on the other hand, the management ability of the owner gradually cannot satisfy the need of the enterprise development. It requires that new corporate governance mode replaces the old, professionals enter board and deal with strategic decision-making, more capable management are hired to manage the enterprise. Meanwhile, in the distribution of residual income, it should extend to the entire employees instead of shareholders and the senior management. Combined with the practical condition of the company, adopt incentive schemes such as employee stock ownership and stock option, at the same time, attract and retain outstanding innovative talents.

In a word, the risk of high-tech enterprise is greater and the environment plays an important part in the growth and development of the business entity. Technology enterprises develop and implement strategies corresponding to environment change highly.

### **6.2 Improve the corporation management environment**

To improve the independent innovation ability of the technology enterprise, on the one hand, the enterprise should establish the system guaranty in favor of independent innovation. For this purpose, the state should make the economic policy and the technology policy coordinate, build social cultural environment, legal environment and market environment favorable to the self-directed innovation, add support for enterprise innovation activities, and constantly promote the enterprise-orientation manufacture-learning-research. To build social cultural environment means nurturing innovative consciousness and spirit in the whole society, emphasizing the innovation concept of entrepreneurs and scientific research personnel, enhancing the public quality in science and technology, respecting innovation and tolerating failure. In order to build the legal environment, it is necessary to establish and perfect law and regulation that encourages innovation and protects intellectual property, intensify law enforcement and punishment, raise the infringement cost, and stimulate the technology to diffuse reasonably and payably as protecting the interests and enthusiasm of innovators. To build market environment is to promote to form the fair competitive market order, break the

monopoly, ease market access and gradually form a complete technological innovation market. Meanwhile, accelerate reform of system of science and technology and perfect the manufacture-learning-research mechanism. The enterprise should declare, set up and organize the technical research project with extensive application, that will make the enterprise requirements become the decision-making basis of major state projects. The qualified enterprise ought to establish the national engineering technology center and industrialization base, attract and induct the technology talents. Universities and research institutes can provide some flow posts to enterprises and make enterprises participate in the R&D project.

On the other hand, enterprises should increase R&D input, strengthen the incentive mechanism of innovation, and cultivate innovation culture. Foster innovative atmosphere in the internal, build a learning organization structure, establish the value of enterprises independent innovation, raise human capital investment, and increase the input of staff training and re-education. Supply learning opportunities for scientific and technological personnel, such as go abroad for training, attend professional meeting, take part in company-provided training and so on. The innovative quality and ability will be improved continuously.

## 7. CONCLUSIONS

Management environment is the foundation of governance mechanism; governance mechanism determines the enterprise independent innovation ability; management environment impacts the formation and enhancement of independent innovation ability in several ways. Therefore, the technology enterprise based on the improvement of self-directed innovation capability should design rational governance mechanism that is adaptive to management environment, pay attention to the incentive human capital, and create innovative atmosphere in the internal. In terms of nations, build social cultural environment, legal environment and market environment favorable to the self-directed innovation, and add support for enterprise innovation activities. From the enterprise aspect, it should design effective governance mechanism that can improve the independent innovation ability according to the internal and external environment where it locates, adjust the institution and management based on the surrounding environment change, cultivate innovation culture, and strengthen the construction of their own innovation ability.

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