

## Strategic Thinking on Enhancing the International Competitiveness of State-owned Testing Organizations

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**Abstract:** A systematic reform strategy for the state-owned testing institutions is proposed based on the comparative analysis of competitive advantages and disadvantages between state-owned testing agencies and foreign testing organizations. First, the state-owned testing organizations are classified as non-profit and market-oriented. Then, the main function, funding, objectives and strategies are defined for the state-owned nonprofit testing organizations. Where the main function should be focused on basic research and public services on inspection and testing, or administrative acts supporting the government's quality supervision; the funding should be allocated entirely from the public financial agencies; the core objective should be set to strengthening its public service orientation, and main strategies are to improve its professions and authorities continuously. Finally, for the state-owned operational testing organizations, its main function is to provide quality signal to the market and government as the third-party, its core objective is to become bigger and stronger, its main strategy is to stick to the path of grouping, integration and internationalization, enhancing constantly its international competitiveness through fair, impartial, accurate and efficient testing service.

**Keywords:** Testing, Testing organizations, International competitiveness, Classification-based reform

### 1 Introduction

Testing and inspection is an emerging industry developed from the production service, which is a fairly important high-tech service. According to the "Instruction and Advice about Accelerating the Development of High-tech Service Industry" by General Office of the State Council, it is necessary for the state to support testing and inspection service. The recently issued "Service Industry: 'the 12<sup>th</sup> Five-year' Plan" further defines the testing and inspection industry as an emergent industry format. The "plan" also suggests expanding the construction of the testing and inspection infrastructure, to reinforce the construction of testing and inspection system, and to encourage the high-tech service industry including testing and inspection, to become an important input of the economic growth.

As regarding to their different functions, testing institutions in the nation can be primarily classified into six categories, including the testing institutions founded by quality supervision at all levels, the testing institutions authorized by industry supervision and operation department such as food safety testing institution, the industrial testing institutions sponsored by the relevant administrative department of the State Council, the testing institutions providing intermediary service to private companies and foreign testing institutions with respect to the Enterprise Law and the Corporation Law, as well as the testing institutions sponsored by scientific research institutions such as colleges and universities. This article focuses on analyzing the competitiveness of the national testing institutions (the market share of national testing institutions is closed to 60%). Meanwhile, the number of institutions, the market share, and quality system testing institutions become the key points.

### 2 The Development Orientation of National Testing Institution

Regards to the rapid expansion of testing and inspection service worldwide, and the huge capacity of the domestic market, national testing institutions confronts a vital turning point. The only way for them to enhance competitiveness is to optimize and deepen the structural reform, and to learn experience about globalization, marketization and scientific management from international testing institutions.

### **2.1 Functional orientation**

According to the reform scheme of national utilities, the future testing institutions should gradually separate into public and private. Administrative organs should take the administrative functions away from testing institutions.

In addition, government should remove the administrative subordination relationship with national testing institutions. Instead, the responsibility of government is supervising all testing institutions to ensure equity in the market. Public testing institutions should mainly focus on testing infrastructure research, providing public testing service, and serving the government supervision bodies. All the funds come from the administrative expenditure. Private testing institutions should be equitable, impartial, accurate and productive so that it can increase self-competitiveness.

### **2.2 Developing goal**

For the long term, the goal of public testing institution is to be professional and trust-worthy. Therefore, it is important to completely separate the responsibilities of government and the national testing institutions. Through establishing a series of state-level, public and professional testing technology institutes, and implementing the strategy of protecting intellectual property rights, the national testing institutions can eventually gain the formulation right and dominant right to support the development of testing industry. The other goal is to build advanced testing technology communication system and technology transfer platform, reforming the public testing service, and increasing the fame and influence of national public testing institutions in professional fields.

The goal of private testing institutions is to become bigger and stronger. The goal is to integrate all national testing institutions that have marketing properties, and to extend the testing industrial chain, raising the competitiveness and the influence of its brand until those institutions strong reach the national and state level. International competitiveness can be obtained by proper strategy and increasing operation efficiency.

## **3 The Development Strategy of National Private Institution**

The ultimate goal of national public testing institutions is to emphasize its approach as public and nonprofit. The strategic path of development is to insist being professional and authoritative.

### **3.1 Strategy to be public and nonprofit**

First of all, the establishment of every public testing institution should be strictly controlled. Government sponsored testing institutions can only be allowed in some specific areas, such as food and medicine, for the purpose of combating crimes and collecting data. In future, there should not be more government related testing institutions.

Secondly, it is necessary for the national testing institutions to improve the systems of human resource, income distributions, and employee's insurance. In order to distribute human resource evenly and flexibly, national testing institutions must establish clear, scientific, flexible, and powerful recruitment policy and post management.

Thirdly, it is necessary to accelerate the strategic restructure of the national asset system. The restructure should base on the fundamental rule of market economy, which is persisting in high service quality and strict control of national assets. National testing institutions should adjust their distributions in the industry according to diverse purpose and expertise.

### **3.2 Strategy to be authoritative**

The foundation for public testing institutions to be authoritative is profession and dedication. According to their target, public testing institutions can achieve authorization through integration, sharing, and innovation.

First, public testing institutions of our nation should learn experience from The National Institute of

Standards and Technology (NIST) of the United States, National Institute of Advanced Industrial Science and Technology (AIST) of Japan, KOREA Institute of Science and Technology (KIST) in diverse fields. The state can integrate public testing resource, restructure several national-level public testing and technology institutes, tracking the updated testing technology and trend, and eventually, planning the strategy and path of the development of the entire testing industry. It also helps to support industries that are crucial to national economy, especially some public testing technology and key technology of innovative industries.

Secondly, it is important to break the barriers between higher and lower levels or between different departments and regions. In other words, testing institutions should share information and optimize allocation according to fields and function. Meanwhile, testing institutions should explore various management structure of board of directors, amplifying strategy, operation and supervision systems.

Thirdly, the government should put great efforts to encourage innovation. It is important to encourage public testing institutions to get involved in setting international standards and rules for certain industry, area and products. Our government should also be familiar to the mainstream trend of developed countries. Testing institutions should voluntarily involve information and revision of international standards such as IEC and ICF. When the conditions are ripe, our testing institutions can make our own industrial testing standards, gradually switch roles from involver to leader. Eventually, the national testing standards can be internationalized; the international discourse rights can also be achieved. Those are the technical foundation and policy guarantee for our national testing institutions.

### **3.3 Leading strategy**

National-level public testing institutions can lead the entire industry become healthy in many fields, such as technology and management. Its leading function can be reflected in three areas.

First is to establish a platform for sharing national testing resource and information. It is important to fully utilize the modern technology such as information technology and internet to strengthen the public service sharing function, testing technological achievements trading function, training and introduction of talents function.

Secondly, the state should establish platforms that allow advanced testing technology to communicate and transfer. The physical measures include the basic function to strengthen the network and internationalization of public testing institutions, to establish the relationship between advanced testing institutions and intermediary organizations, and to achieve the updated testing technology innovation information. It also includes holding meetings regularly, and encouraging more global testing technology come to China to be industrialized.

Thirdly, the government should construct new system for public testing service. The state should demonstrate the function of government, induce market competition system, and construct diversified structure of property right and social fund raising system. The government should also change from “doing” to “guiding”, which is to lead the public institution follow the path of socialization and marketization.

## **4 The Developing Strategy of National Private Institution**

### **4.1 Strategy to be collectivize**

First, the government should establish regional testing groups at provincial level. In a province scale, the government should utilize its administrative power to encourage the establishment of testing groups, the connection and marketization of regional testing groups. It can effectively forbid the government at the basic level to randomly generate testing institutions. It also helps integrating those small testing institutions through inner operation policy reform and adjustment, and eventually forming professional ability in different fields, eliminating and closing some institutions which do not reach the standards.

Second, the government should form national-level testing groups. It should focus on the testing institutions related to central ministries. The government should first establish groups in the scale of

ministries, then in a larger scale.

Thirdly, when the conditions become ripe, the government should allow merger and recombination among national-level, province-level testing groups in all service. At first, quality supervision system can initiate numerous province-level quality testing institutes in different provinces. Then, it can allow the institutes to integrate resources, merger and recombine across industries. The regional testing industries and related industries can develop rapidly through the input of foreign capital.

#### **4.2 Comprehensive strategy**

One strategy to expand the scope of service is to move along the industry chain. In other words, it is to strengthen the basic capacity-building, such as sufficiently utilizing the existing resources, reinforcing the testing manners. It also includes developing service such as design and exploitation, manufacturing, and after-sale service. In addition to those, it is important to reinforce and integrate testing system in strategic emerging industry and agriculture. The government should encourage testing institutes to provide comprehensive service instead of a single certification test.

The second strategy is to quickly merger other institutes, and acquires complementary strategic resources. The strategic resources include influence of brand, key technical staff and managers, qualification of testing and accreditation, testing and R&D ability, number of intellectual properties, international testing network, and marketing management. To the private testing institutions, these core strategic resources are hard to achieve by themselves in a short term; the only way to acquire them is through merger.

The third strategy to expand marketing is through integrated marketing communications. Targeting at the government authorities as well as the industry associations, the testing institutions should know the functions. They also share the responsibilities to make proper communication plans, establishing trust and cooperation system, and encouraging relationship marketing. For the companies and individuals, testing institutions should build relationship, grasp the demand, and implement service marketing through differentiated, individualized testing service based on the concept "Let the costumers succeed". For the other testing institutions in the nation, it is important to build alliance, as well as developing franchise, sharing equipment, and deepening cooperation. For the public, it is important for the institutes to shape the consciousness of brand, to increase brand publicity, to strengthen the image-building, to increase social influence, and to practice social marketing.

#### **4.3 Strategy to internationalize**

First, national institutes should learn from those international well-known testing institutions to increase their international operating ability. The experience includes establishing the structure of operational legal person; strengthen the consciousness of brands in the management, and establishing the brand developing path. The service should be based on sincerity; the quality control system should be high-standard to ensure a perfect working system.

Second, it is important to implement the "Going out" strategy, realizing the international testing market distributions in stages. Testing institutes can expand its international market by merger overseas, joint operation, or settle branch offices. Some qualified testing institutions can fit into the China-U.S. cooperation forum and Chine-Europe Cooperation forum to encourage the settlement of cooperation, protection and development treaty between governments for the purpose of protecting investment gains overseas.

The third strategy is to attract international talents, technology and investment, continuously expand international marketing space. Considering the complicity of the testing service market, variety of the products, the different tastes and needs of customers, national private testing institutions should sufficiently utilize international testing resources, which includes attracting high-level experts and technical talents, merger high-tech patent and manner, financing international testing venture Capital Institution to explore the potential force within the resources, and to lower the costs and risks of R&D.

## **5 Conclusion**

The emerging trend of reformation is to speed the classification of national testing institutions, and establish international testing and certification groups. On one hand, the reformation should not rely on government affiliating. Procrastination of the reform would lead to a low adaption to the market. On the other hand, the reform itself would stimulate the development of testing market. As the opening, integrating, merger and recombination of the testing market become fierce; it is possible that several world-class testing institutions would emerge. All of these are opportunities as well as challenges to the national testing institutions; in fact, rather challenges than opportunities. Therefore, no matter public or private testing institutions should always undergo the process to become professional, powerful, large and comprehensive. Only the testing institutions remain invincible can it develop sustainably.

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