

## Research on the Strategies to Promote the Development of Wuhan East Lake National Independent Innovative Demonstration Area\*

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**Abstract** The development status and existing problems of Wuhan East Lake national independent innovative demonstration area was first introduced. In conjunction with the actual development of the area, the corresponding countermeasures and advices were put forward. The strategies are as follows: 1) focus on the innovation of system and mechanism, carry out the system transition from governmental government to diversified government, and establish the management operation mechanism with small institutions and great services; 2) deal with correctly the relationship among the three main bodies, and stress the powerful thrust and promotion role of the government; 3) innovate the management system, establish the management operation mechanism with the features of following the special policies under special circumstances and dealing with special things in special ways, which is suitable for the special administrative region; 4) accelerate the technology innovation, combine the independent research and development with the technology introduction; 5) enact the policy system and innovation culture to guide and encourage the formation of industrial cluster, accelerate the cluster of college research personnel and science and technology enterprises. The above countermeasures will facilitate the rapid development of demonstration area.

**Key words** Countermeasure; Self-innovative; Diversified government; Industrial cluster

### 1 Introduction

Wuhan East-lake new and high technology zone is the second national self-innovative demonstration area, following Beijing Zhongguancun new and high technology zone. The East-lake new and high-tech zone, founded in 1988, was approved as the first batch of state-level development zone by the State Council in 1991. The national new and high-tech zone refers to the national-level hi-tech industrial development zone. Nowadays, a surprisingly large amount of innovations, that is frequently not the case, have sprouted up over 80 square kilometers surrounding Wuhan East-lake new and high-tech zone. The three network standards of IP, proposed by Fiberhome technology, have been approved by International Telecommunication Union, which has never approved any standard advanced by Chinese before then. Huagong technology has also developed a plasma cutting machine with high precision and a high-performance laser cutting machine, which is in the level of world class and has entered Australia, the United States and other markets. After 20 years of development, Wuhan East-lake new and high-tech zone, known as "the Optic Valley of China", has become the largest industrial base of optical fiber and cable, photoelectric device and optical communication, and spread out three industries including mobile communication, consumer electronics, and software outsourcing services. Additionally, the four-step jumping pattern of technological achievement transformation was explored. Meanwhile, the development zone has implemented the first incentive pilot for the shareholding of central enterprises, taken the lead in developing pollutant discharging exchange, and started the industry union of laser, semi-conductor lighting, Geo-Spatial information, and so on. On the basis of this, a number of service platforms for technology innovation were constructed.

Under the great pressure of technological progress, international competition, and resource environment, it's necessary to grasp the direction of development and the initiative to resolve the problems, and the key is to promote the construction of national self-innovative demonstration area. In order to make the new and high-tech zone one of the core bases for the construction of national innovation system, it is important to implement the scientific concept of development, and facilitate the independent innovation<sup>[1]</sup>.

In the view of dialectics, the author investigated the problems in the development of the East-lake new and high-tech zone. The problems are described as follows: 1) the system and mechanism cannot

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satisfy the need of development; 2) the innovation environment is relatively simple; 3) the innovation of management and operating mechanism not quite outstanding; 4) the style of technological innovation still remains a work in progress; 5) the policy system of industrial cluster needs to be innovated.

## **2 Countermeasures and Advices**

Aiming at the problems existing in the development of East-lake new and high-tech zone and the historical mission requirement, the following countermeasures and advices were proposed, combining with the domestic and international development experience and the requirements of social economy and the scientific development concept.

### **2.1 Innovation of the system and mechanism**

In the view of present-day economics, the system and mechanism is the critical element of regional competitiveness, and has great impact on economic growth. The development of new and high-tech zone at home and abroad has proved that both the system and mechanism are superior to technology. The research shows that the new and high-tech zone at abroad generally takes the unitary management system at the stage of establishment, and the polynary one will be employed once the zone reaches to the mature stage with a large scale. Additionally, the theory of ternary participation argues that the three institutions of government, university and research institution constitute the principal part of new and high-tech zone, and determine the formation and development of the zone<sup>[2]</sup>. By taking the new and high-tech zone as platform, the three institutions pursue the common development of high and new technology industries based on the mutual interests, which usually promotes the development of regional economy. In our country, the application of polynary management system in the new and high-tech zone functions as the tripartite leadership system, internal operation system, organization setup, management authority, management methods, laws and regulations, and the interacting relationship between them.

The management operation mechanism was established with small institutions and great services<sup>[3]</sup>. According to the innovative system and mechanism, the lean management institution with specific responsibilities should be set up. In service, lots of social service organizations or companies like social intermediary services and labor organizations have sprouted up. This kind of system and mechanism can not only promote the development of the tertiary industry including social service, but also greatly reduce the management pressure and financial burden of management institution. The practices indicate that the management operation mechanism is suitable for the development laws of Wuhan East Lake national self-innovative demonstration area, and the need of the opening up of demonstration area to international community.

### **2.2 Appropriate handling of the relationship of government, university and research institution**

In order to realize the polynary management system, it's necessary to deal with correctly the relationship between the three main bodies of government, university and research institution. The problem on "which" is the principal one has a direct impact on the management system, choice of management patterns, and operation efficiency. The polynary management system, constituted by the three main bodies, calls for mutual coordination and promotion within the consortia. However, the domestic and international development practices have proved that the government support is always the important force affecting the development of new and high-tech zone, and promotes the cooperation of technology enterprises and research institutions.

A review of the management system, mechanism and pattern of the new and high-tech zone over the world has revealed that it's impossible for the government to intervene in the high and new technology industries comprehensively, although the government intervention exists in different countries at different time. In addition to this, the comprehensive interventions of government usually make it easier for the high and new technology industries to set the goals aiming at the near-term profits, which significantly affect the formation of the industries' independent personality. As a result, the industries are more dependent on the government, and the vitality and innovation ability will be impaired accordingly<sup>[4]</sup>. Therefore, the participation of the enterprises and research institutions in management and the harmonious development of three main bodies are the operation foundations and necessary conditions.

### **2.3 Innovation of the centralized management system**

The innovation of the management system, specifically is to do the following: 1) simplify the procedures and improve the service efficiency; 2) in economic management, specify the scope of income collection and management, rationalize the system of fiscal revenue, and establish the sound management

system of finance and treasury; apart from this, allow the technology enterprises from outside areas to register and apply for tax registration, which is directly collected by the bureau of country tax and land tax of the zone and used for infrastructure construction and running after turning in to the provincial and central governments; finally, unify the collection, management, and utilization of local fees in the zone;3) in the aspect of talent management, speed up the construction of the soft and hard environment, formulate the reasonable preferential policy to encourage talents to converge and start an undertaking;4) in the construction of infrastructure, implement the inclining policy, increase the investment of scientific and technological funds in the construction of new and high-tech zone;5) in terms of investment and financing, establish the multiplex financing form and investment mechanism for the high technology, and improve the risk investment system for the high and new technology industries; encourage the companies and communities to establish the insurance companies for the industries, invest venture capital in the high and new technology industries; increase the proportion of science and technology loan in the credit plan, enlarge the loan scale of commerce, science and technology. As a result, the new and high-tech demonstration zone exhibits the feature of the special economic zone with special management and operation mechanism.

#### **2.4 Innovation of the science and technology**

In order to accelerate the technology innovation, Wuhan East-lake national self-innovative demonstration area should make full use of the resource of numerous universities and research institution, and seize the opportunity of establishing the "two-type society".

The development of society economy shows that there are mainly two ways to realize the progress of science and technology and technological innovation. The ways can be described as follows: 1) acquire the needed technology and knowledge through the activities of research and development, including basic research, applied research and technology development; 2) gain the useful technology and knowledge through the introduction of technology.

The technology introduction is one of the procedures of technological progress, and the purpose is to undertake the technology innovation by the way of introduction, digestion and absorption<sup>[5]</sup>.

It is suggested that Wuhan East-lake new and high-tech zone should fully tap and make the best use of its technology resources, arouse the enthusiasm of scientific research personnel, and realize the self innovation. However, it also should be recognized that the development cycle of new and high-tech products is longer, while the service life is shorter. Since a large sum of funds are needed to develop the new and high technology products, it's necessary to introduce the advanced technologies with careful considerations, and try to digest and innovate them. Besides of this, the new and high-tech zone should also exploit the learning effect and follow-up effect, establish the self-innovation capability and possess the intellectual property, enhance the development and innovation of new and high-tech products, and promote the rapid development of the high and new technology industries of the demonstration area.

#### **2.5 Formulation of the incentive policy system and innovation culture**

When propping up the new and high-tech zone, the government should formulate the reasonable preferential policy tilting to the technology and industry from the original regional incline. In the meantime, the corresponding policies should be formulated based on the general idea of industry clusters, and the purpose is to attract the projects with the relating industry effect, which can usually promote the industrial development, to enter the new and high-tech zone. In the introduction and training of personnel, a set of policies should be formulated to introduce and cultivate the innovative talents, and promote the formation of cluster. Additionally, it's of significance to encourage the technology personnel and entrepreneur to start a business, foster the affiliated enterprises and establish the interdependent industry chain<sup>[6]</sup>. Since the formation of innovative policy system calls for cultivating regional innovation culture, it's necessary to foster the cultural atmosphere orientated from innovative spirit in the new and high-tech zone. It's suggested that the innovating and team spirit should be advocated.

### **3 Conclusion**

According to the discussion mentioned above, the following conclusions were drawn:

- (1) Increase the investment in the professional infrastructure of college and research institution, and make great efforts to cultivate the high-grade specialized talents and create high-level research achievements;
- (2) Intensify the power to introduce and cultivate the talents and accelerate the form of talent and industry clustering;

(3) Greatly develop and standardize various consultation and intermediary service agency, and strengthen the construction and hatching ability of innovation service center;

(4) Promote the construction and rapid development of new and high-tech demonstration area with the innovative policy system and innovation culture.

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