

Contrast Research on Management Mode of China's Independent Innovation Demonstration Zone: Based on Cases from Three Independent Innovation Demonstration Areas

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Abstract

National independent innovation demonstration areas, along with their scale expansion, involve more and more administrative regions in China. Accordingly, institutional barrier has increasingly become a major resistance in their development process. By employing case study method, this article analyzes and compares management models of Beijing Zhongguancun, Wuhan East Lake and Shanghai Zhangjiang Independent Innovation Demonstration zones, and finds out differences in their institution setting, management authority, and advantage resources. The author proposes that each independent innovation demonstration area should choose its right model according to its own characteristics. What's more, they should take institutional innovations to strengthen their communication with the central government, and enrich management tools, all of which finally enhance the ability of their endogenous innovation.

Keywords: National independent Innovation Demonstration Area; management model; case study; innovation

1. Introduction

China's National Independent Innovation Demonstration Zone ("NIIDZ") is the importance region which is based on high-tech zones for policy experimentation to promote the ability of independent innovation and develop high technology industries. With gradually rising of amount and scale, it becomes an important way for China's innovation and regional development. Until now, over ten high-tech zones are successively approved to settled up NIIDZ by the central government of China. The expansion and spread of NIIDZ is the development trend. The innovation gradually becomes the key driving force for social, economic development and global competitive advantage in China (Liu, 2012) After years of policy supports and environment construction, a large number of innovation resources gather into the NIIDZ, and effectively promote the upgrading of industrial structure and change of the pattern of economic development. But with increasing number, the original policy advantage of innovative demonstration zones will slowly fade out. At the same time, the internal expansion of some zones leads to a greatly increase of administrative areas involved, which makes more work of overall coordination by management and operation subjects become a need. The original management system of them can not completely meet the demand of technology innovation, and institutional barriers become the problem of further development in almost all innovation demonstration zones (Gu and Wang, 2011; Yang, 2011; Dang and Liu, 2013). Therefore, whether the management mode of NIIDZ adapts to the requirement of technological innovation is the most important aspect in influencing to stimulate endogenous innovation ability. This paper will focus on this core to explore and answer the following three questions: how is the management status quo of China's NIIDZ? What is the difference between each demonstration zones in management mode? How to build and optimize a management mode of the Innovation demonstration zone?

China's NIIDZ are set up on the basis of high-tech zones, and their management mode also come from them. So many scholars have studied it as the part of high-tech zones. The existing research mainly focused on three aspects: Firstly, according to the different anagement subjects, management mode of high-tech zone is divided into three types: the the government-dominated mode, the enterprise-dominant type, and the mixed type. And the government-dominated type is perceived as the main mode of China's high-tech zone in the early development (Dai, 2014). Secondly, the management system of high-tech zones has some problems such as road-dependent, institutional inertia and system incoherence (Hu and Cheng, 2009). At the latter stage of development, the departments in it are more difficult to coordinate, so some scholars suggest using the "combination of administrative region with high-tech zones" to improve the feasibility and effectiveness of management (Han et al., 2005; Cheng and Lv, 2013). Thirdly, in the context of the expansion of high-tech zones, the research focus are turning to the new phenomenon of a hi-tech zone with multiple parks in it (Li, 2014), and advocate the government to take the joint governance with all sectors of society (Cheng and Guo, 2014). These researches have laid a good foundation for the study on the management model of the NIIDZ, but they mainly discuss what the high-tech zone should be in theory, and the occasional case analysis only refers to the small zones or the sub-park in it (An, 2011; Zeng and Hu, 2011; Ding and Lin, 2013; Wang et al., 2011), which has not completely suitable for the present stage of NIIDZ. After the high-tech zone is builded as an innovation demonstration zone, the area and management

scope has greatly expanded, that makes NIIDZ more complex than high-tech zone. While innovation demonstration zones pay more attention to the capability of independent innovation than high-tech zone, which requires a higher efficiency and flexibility of management. Moreover, on account of a sudden increase in innovation demonstration zones, the new one needs to learn more from other mature zones. Based on the above-mentioned reasons, the author wants to analyze demonstration zones mode by case analysis and field investigation, and select Beijing Zhongguancun science park ("Z-Park"), Wuhan East Lake High-tech Development Zone ("WHEL"), and Shanghai zhangjiang innovation demonstration zone("SHIPs") to compare their management mode, including organization structure, the administrative authority and advantage resources etc., to provide useful experience for the new NIIDZ to choose their own appropriate management mode.

2. The typical NIIDZ management mode

By visiting the the management committee of Z-Park, WHEL and SHIPs, we obtained the first-hand information. Through the analysis it is found that because of the development background and regional conditions, these three zones have formed distinctive management modes. According to the different characteristics, they are respectively generalized the “political orientation” mode, the “administrative orientation” mode and the “service orientation” mode .

2.1 Z-Park management mode

Z-Park is the first national independent innovation demonstration zone in China with 16 sub-parks and 488 square kilometers planning area. In the whole zone, Z-Park adopts the management mode of management committee plus group company. Due to its unique political resources, we call it political orientation mode. The management structure is in figure 1.

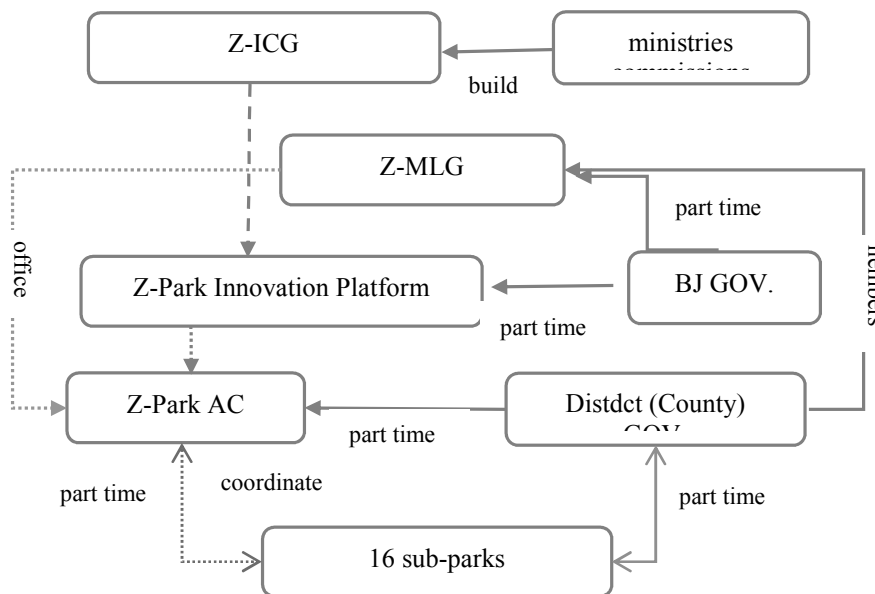


Figure 1. The Z-Park management structure and personnel relationship

At the national level, Zhongguancun Inter-ministerial Coordination Group (Z-ICG) founded by the national related ministries and commissions is the main leading mechanism of it, to make the major policies of the construction of the demonstration zone. At the municipal level, based on the original management system framework, the Beijing municipal government establishes the Municipal Leading Group of Z-Park (Z-MLG) to further strengthen the municipal coordination function, and sets up the Management Committee of Z-Park(Z-Park AC) to carry out the concrete work. There is a platform mechanism named Zhongguancun Science & Technology Innovation and Industrialization Promotion Center(Z-Park Innovation Platform) jointly established by national ministries and municipal government, to implement management matters across different levels and departments. Among them, the Z-Park AC is the direct management agency of Z-Park, and mainly plays three important roles: 1) as the agency of the municipal government, it has the responsibility of research, planning, coordination, supervision and service; 2) As the custody department of Zhongguancun Development group co., LTD, its responsible is state assets supervision and performance appraisal of management personnel ; 3) As the integrated office of the leading group and the innovation platform, assist the realization of their functions. The Z-Park AC has 17 offices and 3 affiliated institutions. All the management institutions of 16 sub-parks are the agencies of corresponding county government. In maintaining the original institution setting and leading position, etc., they have the actual management permissions in each park, and implement the leading system of dual leadership from

the Z-Park AC and the county government, and the latter is the main.

In information communication and resource acquisition, Z-Park mainly gets through the platformization means to provide a abundant institutional and information resources for its development. Mainly includes: 1) the Zhongguancun innovation platform. In addition to the meeting of Z-ICG, the Beijing municipal government jointly builds the innovation platform with Z-ICG, in order to strengthen the connection among the national and municipal as well as the Z-Park levels agencies. According to different functions and working modules, nine offices are set up in the innovation platform, and have the approval mode of special affairs, cross-department and cross-level to accelerate the policy implementation of demonstration zone. 2) Working together with the municipal government departments. Taking advantage of geographical proximity, Z-Park AC sets office jointly with the municipal government departments to reinforce the contact with them. Some municipal departments take the Z-Park as a special unit of their work indeed, such as the Beijing Municipal Bureau of Statistics (NBS). The NBS sets up a independent census and statistics agency, to help Z-Park to established its statistics system. All the data are unified released by Z-Park after the approval of the census and statistics agency. The direct inter-departmental work can improve the efficiency and close cooperation. 3) The effective participating mechanism of innovative actors. On the one hand, as unit members to participate in the Z-Park Leading Group, universities, research institutions, enterprises, and other social organizations can discuss and research the major construction problems and important pilot policy. On the other hand, the Z-Park Entrepreneur Advisory Committee(Z-EAC) is one of the important channels for enterprises to express their right, which have played an important role in the park development.

The coordination for Z-Park AC in 16 sub-parks mainly through the following ways: 1) The pluralism mechanism of director. To strengthen the connection among the district (county) government, the Z-Park AC and the sub-park management agencies, the relevant policy is issued to stipulate that the deputy district (county) chief must be the director of sub-park administrative committee, and also be the deputy director of Z-Park AC at the same time. And a written consent of Z-Park AC is necessary before the rite, in oder to ensure the consistency of the goal the three level institutions. 2) unified planning and performance appraisal. Exercise unified leadership includes the overall development planning, industry layout, enterprise access standard, and making general policies within Z-Park to effectively integrate each park resources; the performance appraisal of sub-parks is based on the evaluation from Z-Park AC and their performance in economic indication. 3) Economic regulation mechanism. Zhongguancun development funds and Zhongguancun development group co., LTD. are the two important tools to co-ordinate resources for Z-Park AC optimizing industrial distribution. Zhongguancun development group co., LTD. is builded on the resources from riginal ten parks, and has the responsibility for the investment and construction of infrastructure construction, project introduction, and achievement transformation platform.

2.2 WHEL management mode

Different from the Z-Park, the Wuhan East Lake High-tech Development Zone is similar to a traditional administrative region, which takes a closed-end integration management. As shown in figure 2, we can see: the leading institutions of the WHEL including the Inter-ministerial Coordination Group of WHEL(W-ICG), Hubei Province Leading Group (H-PLG), and Wuhan Municipal Leading Group(W-MLG) three levels. The Administration Committee of East Lake High-tech Development Zone(EL AC) is the direct management agency of the WHEL, having administrative power of Wuhan city level within the zone, and duty for all the economic and social affairs. The EL AC has 18 management departments to process the comprehensive administrative matters in demonstration zone. In the meantime, EL AC sets up eight sub-park offices with staffing of 15 to 20 and eight street agencies, as the local agencies of it, to manage economic and social affairs in the sub-parks. In addition, it also has five state-owned companies.

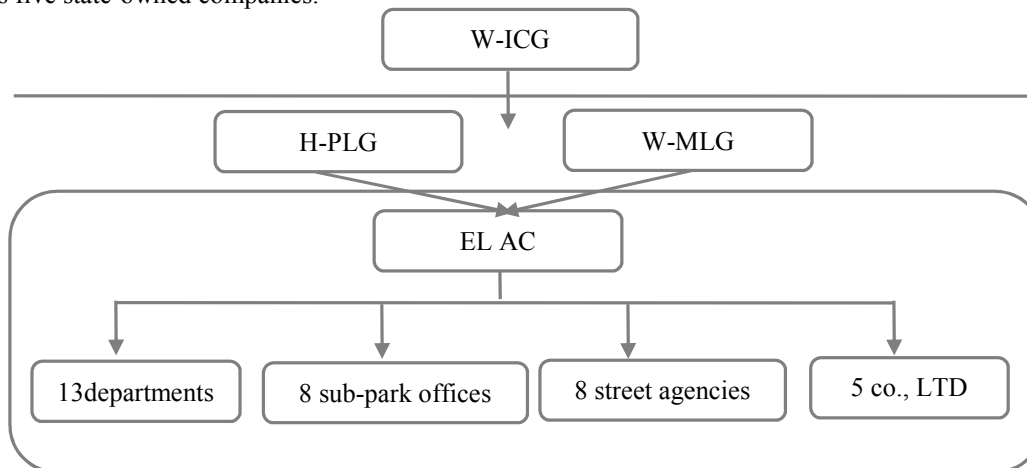


Figure 2. The WHEL management structure

East Lake Demonstration Zone has no platform or office directly with ministries. Its management agencies communicate with the national ministries mainly through Inter-ministerial Coordination Group. In the regular meeting of the W-ICG, East Lake can report the construction situation and major problems of WHEL, so as to strive for the relevant policy support. However, the time interval of inter-ministerial coordination group meeting is basically calculated annually, which will affect the timeliness of communication. So the development policy resources will be relatively insufficient. By contrast, in the communication of provincial government departments, Hubei provincial government and its functional departments put the "radical decentralization" to the WHEL and have an informal communication mechanism between them. That makes the WHEL have a maximum policy support in the provincial and municipal levels. At the same time, under the closed-end management mode, all related departments have a consistent external window. And through "Regulation of East lake national independent innovation demonstration zone", the WHEL obtains all administrative approval limits in the demonstration zone. The provincial and municipal government departments no longer set up new resident agencies in the demonstration zone. And agencies having been set up with the law should be under the coordination of EL AC, which further strengthens communication ability of administrative machinery in the zone.

The EL AC has a comprehensive leadership authority to its sub-parks. It directly sets up the management agencies in each park as its dispatched institutions, to serve enterprise and manage the economic affairs, and control them by the appointment of staff and performance appraisal. Then through the five state-owned companies mentioned to play different roles of economic construction and innovation development: 1) Hubei Science & Technology Investment Group co., LTD. plays the main financing platform role; 2) The responsibility of Wuhan optical Valley Construction Investment co., LTD is house dismantlement, acquisitions, and the park construction and development; 3) Wuhan High-tech State-owned Holding Group co., LTD. has the functions like park development and construction, industrial investment and state-owned enterprises restructuring; 4) Optical valley intelligent manufacturing industrial park with the orientation of a high-end industrial park, is a new node of industry support in east Wuhan; 5) Wuhan high-tech agriculture group co., LTD. mainly operates and exploits the high-tech agriculture industry and biological engineering technology. Because of the independent financial rights and municipal administrative authority, the WHEL can independently control the resources in it, and has the right and ability of making policies, which leads to a active mechanism of policy innovation in demonstration zone level.

2.3 SHIPs management mode

The management scope of Shanghai zhangjiang innovation demonstration zone includes 22 sub-parks. Similar to the Z-Park, it has formed management mode with the SHIPs Inter-ministerial Coordination Group (S-ICG), the municipal leading group of SHIPs (S-MLG) for guidance, the management committee of SHIPs (SHIPs AC) for coordination, and the county government and sub-park agencies for concrete implementation. Their relations are shown in figure 3. In the municipal level, the leading group of SHIPs is set up, with the mayor of Shanghai as a team leader, and 56 relevant units as members of it including the municipal government departments, each district and county people's governments, each park management agencies and others. Simultaneously, the SHIPs AC is set up as the agency of the Shanghai Municipal People's Government, with less than 30 staffing, and 5 offices, to coordinate the policies and interests of each sub-park and departments. The 22 sub-parks in SHIPs have their own independent subordinate management departments. The SHIPs AC just has overall coordination function for each park, rather than direct leadership role.

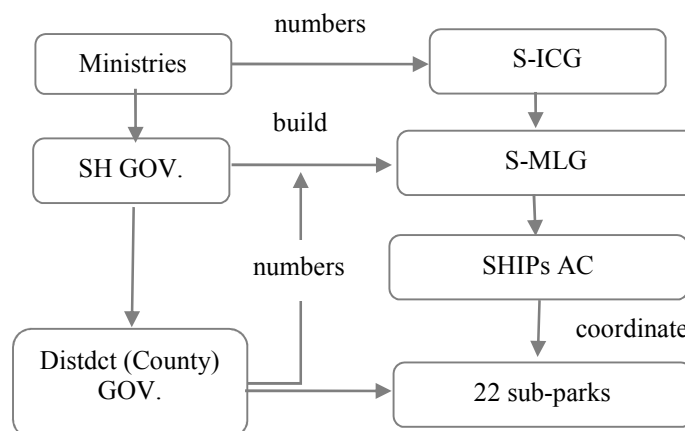


Figure 3. management structure of SHIPs

Like the Z-Park and WHEL, the S-ICG and the S-MLG are the main ways to communicate with the national ministries and the municipal government departments in the early stage of the construction, in the form of meeting, coordinating intermittently and temporarily for a specific problem and goal. But beyond that, the SHIPs has explored a unique communication mechanism, whose focus is imputting the innovation resources from

government departments at all levels and social to the zone. 1) build platform cooperation. The Administrative Committee of SHIPs has a direct cooperation mechanism with the Bureau of Exit and Entry Administration of the Ministry of Public Security; and sets up the Shanghai zhangjiang competition and antitrust research center with the Price Supervision and Inspection and Anti Monopoly Bureau of the National Development and Reform Commission. These cooperation mechanisms are the materialization of the inter-ministerial coordination group, which can largely narrow the distance between the national ministries and the zone, and make it more effective to make and carry out the policy. 2) assist approval authority delegated to the zone. In the process of delegating approval authority from the municipal government to the sub-parks, the Administrative Committee of SHIPs plays a role of coordination and supervision. Through the communication with sub-parks, SHIPs AC knows their requirements, assesses their ability for approval authority, and traces the problem after the decentralization. 3) with social organization intellectual support. The help of external forces is fully reflected in the establishment of the Development Strategy Research Institute of SHIPs. It is consisted with the well-known scholars from universities and research institutes as the intellectual support for the zone, to mainly assist the Administrative Committee of SHIPs for policy research and university-industry cooperation.

The coordination functions of the SHIPs AC in sub-Parks for are mainly concentrated in industrial development, park planning and system innovation, etc.. It does not intervene each sub-park internal concrete administrative and social affairs. In ensuring the diversified development in advance, main means of SHIPs to supervise each park include planning & assessment and SHIPs development funds. On the one hand, make the Planning Outline (2013-2020) of SHIPs Development to define the strategic orientation, and list 22 concrete, operational development indicators and the anticipated goals of the 2015 and 2020 in it, which simplifies the quantization of its performance. Then around the spirit of this planning, SHIPs gradually formulates some supporting policies of the development, and assists the sub-parks to compile their own development plans. At the same time, evaluate the performance of each park, with quantitative indicators for measurement of economy, innovation and so on, to ensure the quality of the development of the sub-parks in the zone. On the other hand, since the SHIPs AC has neither absolute financial control over the sub-parks nor the relevant asset management company. Therefore the Development Fund of SHIPs has become the most important lever for integration of resources and co-ordinating work. Through the guidance of Development Fund, the SHIPs can enhance its coordinated ability to the sub-parks, and strengthen supervision over the use of it to promote environment optimization and industrial development.

3 Comparative analysis of the management modes among three demonstration zones

3.1 Comparison of Organizational Structure and Administrative Authority

1) Organizational Structure. From the macro-organization framework, all three demonstration zones strengthen the leadership with the national ministries and provincial and municipal government departments on the basis of the original system, and set up an inter-ministerial coordination group and provincial or municipal leading group. Especially the inter-ministerial coordination group leadership mechanism, makes shorten the distance between them and the central government departments. But from the micro management organization, the management mode of these three zones has a certain difference: the Z-Park mode is the administration committee plus company; the WHEL mode belongs to the traditional administrative mode; the SHIPs only has administration committee. Different types of organization structure determines the big differences of management personnel arrangement in the zones, such as the the staffs of WHEL are nearly 400 but in SHIPs it is less than 30. 2) Administrative Authority. According to the strength of management authority of management committee in three zones, the order from high to low is: the WHEL, Z-Park and SHIPs. The EL AC with a strong executive power, has absolute discretion of the sub-parks and its companies; the role of the administrative committees in Z-Park and SHIPs are the same, which only have the coordination function that for sub-parks. But the different is that the management committee of Z-Park can do the investment and construction with the help of the Zhongguancun Development Group. The organizational structure is not only the expression of the administrative authority, but also determines the information communication, resource acquisition, and coordination mechanism.

3.2 Comparison of information communication and resource acquisition

In the process of development, each demonstration zone has builded communication mechanism according to their own conditions, and maximize resources from different channels for the construction of them. Located in the center of politics, Z-Park has a more close contact with the central ministries, and sets up the innovation platform of Z-Park as the bridge between national ministries, the municipal government departments and the demonstration zone. This mechanism can make the most rapid policy response of development, but is difficult to replicate for other demonstration zones. As an administrative region, the Administration Committee of WHEL amount to an independent government, with municipal administrative authority, and independent financial power. Through the administrative power, it can strengthen its ability to obtain innovation resources. In this way demonstration zone can get innovation resources more efficiently from provincial and municipal government in the early years of the

demonstration zone construction. The Administration Committee of SHIPs, with the same administrative attributes properties of Z-Park's, in addition to create opportunities to build platform mechanism, uses more social intelligence and contacts for access to resources.

3.3 Comparison of coordination mechanism and resource integration

Three innovation demonstration zones all supervise their sub-parks through the combination of administrative and economic measures, and the complementation of development planning and funds. The difference is that the management committee of WHEL has absolute authority in the administrative and five major state-owned groups in a supplement. While the management committee of Z-Park and SHIPs as the agency of the municipal people's government with lesser administrative authority, mainly rely on special funds and industry planning. Compared to the three management committees, Z-Park although have no direct leadership authority to sub-parks. But because of the staff recommendation and asset supervision to the Zhongguancun Development Group, the using of the administrative and economic adjustment measures are the most balanced.

4 Conclusion and Suggestion

From the above analysis, there are many differences among the three innovation demonstration zones on the management mode. But they also have some similar characteristics : continually expansive scale of the zone, industrial distribution with many sub-parks and the contradictions of multi-level government. These characteristics are also the most common problems faced by the vast majority of innovation demonstration zones at present and the key factors effecting choice of management way and the efficiency of management. The research on management mode of typical innovation demonstration zones not only has an important reference value for other zones, but also helps these zones the park to reflect and improve their own management mode. The management mode of NIIDZ should keep up with and adapt to the technological innovation (Gu et al., 2014), to provide an enabling environment for independent innovation and reduce institutional barriers at the most extent. Therefore, in order to fully adapt to the original goal of promoting independent innovation ability, some principles must be observed when choosing or adjusting the management mode. These principles include: 1) can gain and provide policy and platform for technology innovation to maximum extent; 2) can build and enhance the independent innovation environment at the most wide range; 3) can decrease the mechanism and process adversing to innovation and entrepreneurship in the deepest level.

Under these principles, the NIIDZs need to innovate management with their own advantage resources and lessons from the successful experience of others. Mainly do in the following aspects.

1) Innovative service concept and reduce the management level. On the one hand, break the constraints of administrative structure by innovating service concept. In the process of improving the management system, they should have a deep understanding of technological innovation and economic development, and fully realize the relationship between management behavior and regional development. On the other hand, delegating authority for examination and approval is the common experience of three demonstration zones to reduce the administrative resistance of technical innovation. The reduction of the administrative hierarchy mainly includes the compression of the organization hierarchy and the decentralization of the administrative examination and approval authority. The latter is easier to implement than the former, and becomes the general approach in NIIDZ.

2) Actively expand the channels of intergovernmental communication, and build innovation cooperation platform for getting the central government support. At present China's NIIDZ is in the initial stage, and its development is still inseparable from the active promotion of administrative power. Meanwhile the integration of various innovative resources needs strong ability of overall coordination for the management institution of NIIDZ. From three typical demonstration zones' experiences, this ability stems mainly from the following channels: First, set up cooperation platform for central Ministries & Agencies and the municipal government departments. Currently the marketization of NIIDZ is not sufficient. So the support of the government, especially the central government, is still an important promoter of technological innovation and development. Second, enhance the co-ordination between government departments at the same level through the pluralism of the directors.

3) Combine the economic means with administrative means to innovate coordination ways. On account of the most closely connection of economic subjects, political subjects and social subjects, a single administrative approach is difficult to meet the needs of all subjects in NIIDZ. In addition, due to the constraint of administrative preparation and functional position, the administrative committee also is urgent to innovate the management mechanism. Firstly, the economic means are he most effective way to guide the industrial development and optimize the industrial structure. All the three demonstration zones support the projects of technology innovation and achievements transformation which are policies to encourage and suitable for regional development by special funds, to achieve the goal of industrial optimization. Secondly, in the administrative means, through the personnel authority, performance appraisal, etc., enhance the influence on the sub-parks and district (county) government departments for effectively implementing policies. Thirdly, establish think-tank or intermediary organization to strengthen participation of its policy making and execution. With the integration of these management methods,

the management mechanism of the NIIDZ will be improved, and will enhance the ability of coordination. The purpose of this paper is to analyze foundation, performance and effect of the management mode in the three typical innovation demonstration zones by contrast. It provides a good reference experience to choose and improve the management mode for other zones, which has a great practical and theoretical value.

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