

Allocation of Innovative Human Resources: A Case Study of Suzhou in Jiangsu Province

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Abstract

The transformation, upgrading, and sustainable development of local economies have all created the intrinsic need to increase regional indigenous innovation. Furthermore, the capacity of local self-dependent innovation should be determined based on efficient innovative resource aggregation and allocation. To those with a developmental tendency, the competition of mechanism and paths of innovative resource allocation has become a new target for regional competition in the new era. Many developed regions in China not only have considered efficient innovative resource allocation as one of the goals of their government function, but they also have established diversified path systems of innovative human resource aggregation allocation in their practice.

Keywords: Innovative abilities; Resource allocation; Agglomeration allocation; Diversified paths

Introduction

The endogenous need of economic transformation is more urgent in developed regions than developing regions due to the unbalanced development of economy in China. Objectively, many developed areas in China have reached the advanced stages of local economic development; therefore, these regions are under high demand and pressure in upgrading, transformation, and sustainable development when compared to traditional regions. Innovative and entrepreneurial talented people (hereafter refer as talents) have their intrinsic characteristics of mobility and agglomeration. Hence, the developed regions focused on the aggregation of innovative human resources and explored diversified paths of innovative human resource aggregation allocation and efficient allocation. From the viewpoint of developmental tendency, the competition of mechanism and pathways of innovative resource allocation have become the new target and task in current era of regional competition in developed regions. Moreover, the formation of regional competitive advantages of innovative resource agglomeration allocation and efficient allocation orientate new strategies of advantage competitiveness in the developed regions.

Correlation Studies

Studies on the concepts, current situation, problems and causation of innovative resource allocation

Jian Chen and Guoxiang He proposed the concept of regional innovative resource allocation [1]. Albert Guangzhou Hu pointed out that the agglomeration of China's high-technology firms in technology parks does not fit into an industrial endogenous growth model [2]. Fengchao Liu et al. analyzed the distribution properties and differences of global innovative resources based on OECD national data [3]. The causations of low efficiency innovative resource allocation are that the infrastructure for science and technology is not brought into government's project for scientific and technological development, and that the managing system of the research and development is fragmented and segmented and so on [4]. The theory of human capital threshold concludes that a host country needs to exceed a minimum human capital threshold level to reach foreign R&D spillovers [5]. There exists great subjectivity and blindness for the allocation of innovative resources solely derived from state planning, which results in low efficiency of allocation of limited innovative resources [6]. Bottazzi and Peri proposed that the stock of knowledge has a very significant impact on innovation in the study of OECD member countries [7]. The size of domestic market demands is of great importance for the

innovation and development of machine tool builders [8]. The science and technology innovative resource allocation during the transitional period in China shows coexisting "government-led" and "market-led" performance which leads to the dilemma that both government and market lose their efficacy in the national innovative resource system [9].

Studies on the paths and patterns of regional innovative resource agglomeration

Romer's study showed that the more R&D invested, the higher probability of innovation will be achieved [10]. Alliances and cooperation are the basic capacities for biotechnology industrial development [11]. Furman et al. proposed that the national innovative capacity also includes the factors of innovative infrastructures, industrial innovative environment and the connection quality between scientific departments and industrial departments and so on [12]. The optimal allocation and effective utilization of science and technology innovative resources using science and technology programs have become important strategies to support science and technology innovation in many countries or local governments [13]. Fuhua Li concluded 5 modes of local innovative resource integration: public science and technology innovative platform establishment; scientific parks; establishment of research and development institutes by enterprises; joint establishment of laboratories or engineering technology centers; achievement transformation and cooperative research and so on [14]. Aitken and Harrison studied Venezuela and found that domestic firms with more foreign ownership are significantly less productive in R&D than those with a smaller foreign presence [15]. Reddy showed that globalization of R&D is highly relevant with its corresponding environmental quality of innovation [16]. Government-venture capital investors, as stand-alone investors, have no impact on invention and innovation. However, government-venture capital investors boost the impact of independent-venture capital investors. Government-

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venture capital investors are an ineffective substitute, but an effective complement of independent-venture capital investors [17]. Multiplex mechanisms are important for the increase of innovative capabilities of enterprises. Recruitment from universities, research institutions and higher education institutions has increased the capacity of firms to generate technical inventions [18].

Diversified Paths of Efficient Allocation of Innovative Human Resources

Path of government promotion

The formation of top-level design is one of the most important strategies in government promotions for innovative human resource regional agglomeration in developed cities. Suzhou strengthens the top-level design of "City Revitalization Relied on Talents" strategy by establishing an interactive mechanism by combining "City Revitalization Relied on Talents", "Innovative Cities", and transformation and upgrading of economic development strategies. The well-established top-level design of Suzhou guarantees its rising prosperity of innovative human resource agglomeration. The main features of the top-level design contain several aspects, of which the first is to take the lead in establishing and carrying out. "The Strategy of Human Capital Accumulation First" in local development. Suzhou emphasizes "The Strategy of Human Capital Accumulation First" and focuses on promoting the transformation of supporting elements from "material resources first" to "human resources first". <The outline of medium & long-term program for talent development in Suzhou (2010-2020)> points out that the implementation focus is to carry out "the recruitment program of global experts" ("1010 Talent Project"), namely in key and emerging industries, from 2010 to 2020, Suzhou will annually introduce one research and development group with the international advanced level, introduce and train 10 national talents from the "The Thousand Talents Plan" and 100 high-level leading talents of innovation and enterprising, and introduce 1000 high-level overseas talents; Second, Suzhou established the talent work leading group office and the talent work joint meeting which take charge of the selection and management of professional and technical talents and the management of special fund for human resource development and so on. Third, Suzhou implemented the transformation from supportive "talent policy" to "major projects for talent development". The goal of the national "Thousand Talents Plan" is to support a group of strategic scientists and leading talents who are capable of breaking through key techniques, developing high-tech industries and promoting the development of other new subjects to come back to China for innovation and enterprising. The scale of the talents who are selected by the national the "The Thousand Talents Plan" in which Suzhou declared independently has been on a continuously rising trend. There was one talent selected in Suzhou in 2008, 11 in 2009, 18 in 2010, 24 in 2011, 51 in 2012, 20 in 2013, 15 entrepreneurial talents in 2014. At present, the total number of selected talents is 140 (34% of the whole province) including 95 entrepreneurial talents. This number, for the first time, outcompeted Beijing and ranked highest comparing with all other cities in China. The fourth aspect is the formation of effective management means. In 2011, Suzhou financially invested more than 4 billion Yuan in science and technology and reduced taxes of 3.78 billion Yuan for enterprises to promote science and technology innovation, because of which, the effective management levered more than 26 billion Yuan investment into research and development from the whole society. The research and development fund of Suzhou was close to 30 billion Yuan in the year of 2012 (2.6% of the Gross Regional

Product (GRP) of Suzhou). The amount of patent authorization in Suzhou was 98,276,000 (27.2% year on year), which ranked first in China in two consecutive years. In 2010, Suzhou municipal party committee and government published <Implementation opinions of assessment of objective responsibility for talent science and technology work of the party and government leading bodies and leading cadres at county level> by which 6 assessment systems that talent work takes priority over science and technology work were established for the party and government leading bodies and leading cadres at county level in evaluating talent investment, talent policy, bank work and environmental optimization.

Path of enterprises

The establishment and improvement of agglomeration mechanisms and institutional arrangements of high-level innovative and entrepreneurial talents that take an enterprise as the main body are fundamentally guaranteed to establish market-oriented agglomeration allocation mechanisms of innovative and entrepreneurial human resources. Developed cities support and lead the agglomeration of high-level innovative and entrepreneurial talents towards the aggregation of enterprises through corresponding policies, plans and institutional arrangements; which highlight the principal statue of enterprises in agglomeration allocation of innovative and entrepreneurial human resources. It was a successful attempt for Suzhou to cultivate enterprise carriers of innovative talent agglomeration allocation that enterprises have grown into the most important micro subjects for innovative human resource agglomeration allocation.

Advantage establishment of enterprise agglomeration of doctoral talents: Suzhou insists on aggregating talents by considering enterprises as the main body of agglomeration. Suzhou also profoundly implements "Doctor of Enterprise Allocation Plan" and leads talents moving towards the frontier of production and research work of enterprises. On the grants list of the "Doctor of Enterprise Allocation Plan" of Suzhou in 2013, 75 innovative and entrepreneurial talents in Suzhou (Tao Yuan from Suzhou Hongchuang High-frequency Induction Heating Equipment Co., Ltd and others) were listed. At present, in 296 individuals in Suzhou have been selected, this number reaches close to 1/5 of the total amount in Jiangsu province and ranks first in the whole province. There are currently 240 enterprise postdoctoral research stations in Suzhou, ranking number one amongst prefecture-level cities in China. Since 2013, Suzhou introduced 90 post-doctorates (400 post-doctorates in cumulative number including 195 post-doctorates at the station). In 2013, there were 6 national innovative (pilot) enterprises, 300 provincial innovative enterprises, 133 Suzhou innovative pioneer enterprises, 209 science and technology listed enterprises, 2502 high technology enterprises, 131 National Torch Plan high technology key enterprises, 153 advanced technology service enterprises, and 7700 private science and technology enterprises in Suzhou. This is now the most energetic enterprise carrier for the regional agglomeration of doctoral high-level innovative and entrepreneurial human resources. In addition, Suzhou provides an efficient platform for the agglomeration of high-level science and technology innovative and entrepreneurial talents by establishing Suzhou the "The Thousand Talents Plan" specialist association and Suzhou leading-talent club.

Advantageous establishment of enterprising agglomeration of entrepreneurial talents: Entrepreneurial human resource allocation has become the focal point of innovative resource allocation in developed regions and the important preference of regional innovative resource allocation. Objectively, the focus and the goal of the regional innovative

resource agglomeration allocation are very dissimilar with that in national key cities. This is because the aim of the regional innovative resource agglomeration allocation is to adapt to the upgrading and transformation of local development, thus the local innovative resource agglomeration allocation must focus on application. The establishment of advantages of enterprise agglomeration allocation of entrepreneurial talents meets such endogenous need. The Organization Department of the Central Committee of the CPC has published the 10th version of "The Thousand Talents Plan" in which there are 15 talents selected in Suzhou accounting for 16% of the total number in China and 52% of Jiangsu province.

Implementation of the oriented policy in which innovative resources, particularly innovative human resources, are focused towards enterprises: Suzhou, on the one hand, guides and motivates enterprises to accumulate independent innovative capabilities through policies, which enlarges the needs of enterprise innovative and entrepreneurial human resource agglomeration allocation. On the other hand, it shapes the structure that innovative talents, funds, programs and techniques and so on. Innovative resources are aggregated towards enterprises, especially towards science and technology enterprises by the implementation of the oriented policy in which innovative resources; especially innovative human resources are aggregated towards enterprises and the preferential policies in which innovative human resources are guided towards enterprise agglomeration allocation. According to the corresponding policies of Suzhou, the innovative and entrepreneurial doctors who have been selected via the "Doctor of Enterprising Agglomeration Plan" will be funded no less than 200,000 Yuan individually (free of income tax) including 150,000 Yuan from provincial finance and no less than 50,000 Yuan from local finance. Until now, there have been 125 talents in total who have applied and obtained the high-level overseas talent residential permits accounting for 1/4 of the provincial amount. Suzhou fostered science and technology innovation-led enterprises and small and micro-growing enterprises as important bodies via a serial of policy stimuli. Suzhou implemented the most supportive policies for science and technology innovation-led enterprises when compared with any other similar policy in China. Suzhou also applied preferential policies to support innovative pioneer enterprises and innovative pioneer cultivation enterprises. Innovative pioneer enterprises, since the first year, will be rewarded via the policy of refund for collection of added-value tax, business tax and corporate income tax (annual new tax of the remaining local portion). (100% refund in the first two years, 50% refund in the following three years (maximum 5 million Yuan per year)) The incentive policy for Innovative pioneer enterprises that Suzhou applies is the supportive policy when compared with any other similar policy in China.

Path of carriers

The establishment of carrier platforms of different kinds of innovative and entrepreneurial talents has provided a platform system for regional agglomeration allocation. The platform system offers a reciprocal competition and cooperation environment for the agglomeration allocation of innovative and entrepreneurial talents.

Carriers of universities: Jaffe proposed the geographic coincidence index and explored the spillovers from university research on commercial innovation [19]. Thus, the advantages of universities on the establishment of paths of efficient allocation of innovative and entrepreneurial human resources and the spillovers of universities on the development of local economy should not be underestimated.

Besides, Suzhou focused on the establishment of talent foster carriers with an accumulative investment of 26 billion Yuan by planning and setting up Suzhou Dushu Lake Science and Education Innovation District and Suzhou International Education Park. University of Liverpool, University of Science and Technology of China, Nanjing University, Renmin University of China, Fudan University, Xi'an Jiaotong University, Xi'an Jiaotong-Liverpool University and so on. have settled down in the higher education district in succession; Wenzheng College of Soochow university, Suzhou Vocational University, Suzhou Art and Design Technology Institute and so on. Thirteen institutes have been introduced to the education park in succession. The innovation district and the education park have introduced and fostered accumulative 22,000 industry talents (including 8500 masters, 40% obtained employment in Suzhou), which increases the capability of talented person transports. Soochow University applied the systems of "One Person One Discussion", "Wage contracts", and "Annual Salary", for outstanding high-level talents. The "Settling-in Allowance" and "Scientific research Foundation" for high-level talents were set individually, and gave competitive payment compared with other universities in China. The aggregation of talents drives significant development of discipline constructions of Soochow University. Chemistry, material science, clinical medicine, physics, engineering, biology, and chemical biology at Soochow University were ranked in the top 1% of the Essential Science Indicators (ESI) globally and amongst the best nationally. In May 2013, the Collaborative Innovation Center of Suzhou Nano Science and Technology which is under the auspices of Soochow University was selected in the "2011 Plan" as one of the first 14 cooperative innovation centers [20]. Soochow University obtained 301 projects from The Natural Science Foundation of China in 2013 with total funds of 17,068,970,000 Yuan. The project number was ranked 18th among all universities in China and ranked in second place within Jiangsu province after Nanjing University.

Carriers of national research institutes: While Suzhou focused on national research institute carriers such as Suzhou Institute of Nano-Tech and Nano-Bionics (SINANO), Chinese Academy of Sciences and Nano-Vacuum Interconnected Scientific Station and so on., it also set up public rental housing and central enterprise service centers for high-level talents to provide a full ranges of services covering settling down, payments, relatives, schooling for offspring and entry and exit control for high-level talents [21]. The institute of SINANO, Chinese Academy of Sciences insists on the concept of "human resources as the first resources" and has become one of the most dynamic institutes for the agglomeration allocation of global high-level talents in Suzhou. There were five talents selected in the "The Thousand Talents Plan", and 7 talents selected in the "The Thousand Youth Talents Plan". There were nine researchers entitled "Gusu Leading Talents", and 15 entitled "Science and Education Leading Talents", "High-level Oversees Leading Talents" and "Science and Technology Leading Talents" in the fourth "Jinji Lake Double Hundred Talents" with adding up to 71 leading talents (Table 1).

Carriers of leading-talent-based innovative groups: The leading-talent-based aggregation of innovative talent groups is the basic form of aggregation allocation and efficient allocation of innovative and entrepreneurial talents. In the past 5 years, Suzhou introduced 1339 leading talents total and attracted more than 3000 innovative groups. The accomplishment rate of talent's goals, and talent group projects' goals, ranks highest in Jiangsu province. Suzhou earlier implemented promotion plans and policies of agglomeration of innovative talent groups based on leading talents. Since 2006, Suzhou carried out the

	Suzhou
National research institutes	2 (Suzhou Institute of Nano-Tech and Nano-Bionics (SINANO), Chinese Academy of Sciences; Suzhou Institute of Biomedical Engineering and Technology, Chinese Academy of Science)
Provincial research institutes	11 (Suzhou Nuclear Power Research Institute (SNPI), Suzhou Electromachining Machine Tool Research Institute(SEMTI), China National Building Waterproof Material Company Suzhou Research and Design Institute companies, Sunan Industrial Technology Research Institute, National Biomedicine Incubator Research Platform, China Electronic Product Reliability and Environmental Testing Research Institute (CEPREI, east China), Suzhou Technology Research Institute of Physics CAS, National Software and Integrated Circuit Public Service Platform (CSIP), Jiangsu sub-center, The 22 nd Research Institute of China Electronic Technology Company, The 214 th Research Institute of China North Industries Group, China Data Technology Development Center)
City and county research institutes	37
Provincial foreign invested R&D centers	243
Enterprise academician stations	41
National key laboratories	3 (Soochow University National Engineering Laboratory for Modern Silk, Jiangsu Key Laboratory for Stem Cell and Biomedical Material, Jiangsu Key Laboratory for Nano-devices)
Provincial key laboratories	15
National public service platforms	25
Provincial public service platforms	39
National engineering technology research centers	2 (National Engineering Technology Research Center For Non-metal Minerals Deep Processing, National Engineering Technology Research Center For Nuclear Power Plant Safety & Reliability)
Provincial engineering technology research center	335

Data source: From the website of Suzhou Science and Technology Bureau and Nantong Science and Technology Bureau.

<http://www.szkj.gov.cn/cxzt/20100414/c4c1c8d3-009e-4e45-ae00-a86d36d3b2d5.htm>

Table 1: Agglomeration situation of national and provincial science and technology innovative and enterprising platforms in Suzhou.

introduction project for limited high-level talents and the innovative and entrepreneurial leading talents plan. In 2007, Suzhou initiated “The Gusu Talents Plan” in which Suzhou annually selected a batch of leading talents of science and technology from applicants who met the requirements of industrial development. According to policies, the settling-in allowance for innovative and entrepreneurial talents in Suzhou reaches to the highest 2.5 million Yuan. Besides all corresponding “Talents Introduction” policies of county-level cities’ and districts’, the talents also benefit from the policies as below: The ones who are selected in the “The Gusu Leading Talents of Innovation and Enterprising Plan” will get 0.5 to 2.5 million Yuan settling-in allowance, 1 to 4 million Yuan scientific research funds, no less than 100 square meters workplace with free rent for 3 years and no less than 10% of the total amount of the initial investment of venture capital funds. According to the annual investigation of data of above-city-level enterprises of leading talents in Suzhou from Suzhou Science and Technology Bureau, the enterprises of leading talents acquired sales revenues of 11.43 billion Yuan in the year of 2013 (20% year-on-year growth), scientific research funds of 1.65 billion Yuan (16.6% year-on-year growth), 6291 patent applications (including 4034 invention patents) and 2303 authorizations of patents (including 762 authorizations of invention patents). Besides, Suzhou encouraged and supported leading talents to expand their enterprises to be stronger. Suzhou provided an extra 1 million Yuan in scientific research funds and a maximum of 10 million Yuan secured financing loans for enterprises of leading talents, which had gotten projects, supported and had achieved sales revenues of more than 50 million Yuan within 3 years. Suzhou preferentially supported enterprises that implemented policies with additional deduction for research funding and governmental purchases of products of independent innovation [22]. As a result, the policies applied by Suzhou promoted the growth of a series of enterprises InnoLight Technology Corporation, Suzhou Silikron Semiconductor Technology Co. Ltd., Suzhou Robot Corporation and so on.

Carriers of science and technology business incubators: In 2013, four enterprises from Suzhou were added to the list of national science

and technology business incubators; they were the ones that ranked highest in Jiangsu province. The establishment of science and technology business incubators in Suzhou has been transformed from a single carrier establishment to the incubation chain establishment of local science and development incubators of innovation and enterprising. This transformation created favorable conditions for the fast growth of small and medium-sized science and technology enterprises and provided efficient platforms for the agglomeration of high-level innovative and entrepreneurial talents. According to the statistics of the implementation of policies of innovative pioneer enterprises, 68 enterprises in Suzhou matched the criteria of reward policy of innovative pioneer enterprises and received total funds of 0.12 billion Yuan accordingly. Suzhou preferentially provided multiple policies supporting science and technology finance supermarket platforms for recorded and confirmed enterprises, financing services for small and medium-sized science and technology enterprises to integrate science and technology resources, and especially, technological innovative activities for the enterprises. Suzhou “Science and Technology Loans” has offered loans of 8.09 million Yuan in total for small and medium-sized science and technology enterprises [23].

Path of development zones

The developmental zone carriers, especially the national development zone carriers are not only the most important growth poles for local economic development, but they are also the most important platforms for the aggregation allocation of innovative and entrepreneurial human resources. Suzhou had successful trials of development zones. Based on the fact that the areas of the development zone of Suzhou have reached 90% and the reality that the constraints on resource space have been fully uncovered, Suzhou industrial park proposed the transformation-oriented strategy in which Suzhou was supposed to transform into the new stage of “Development of new industries, construction of a new city, aggregation of new talents” and the “Composite business parks” would replace the manufacturing functions of traditional industrial parks by “Innovation drive” and “Business entities”. The percentage of financial allocations of science

and technology for Suzhou high technology districts exceeded 10% of the general budget expenditures and the research investment of the society exceeded 3% of the gross regional domestic product. The output value of high technological industries and the output value of strategic new-developing industries accounted for more than 50% of the total industrial output value, this ranked highly in technology districts in China. Since 2012, Suzhou industrial park has been increasingly abundant in innovative resources: more than 3 million square meters science and technology carries, more than 20 public technology service platforms, 20 national innovative bases and the International Science and Technology Park, the Creative Industry Park, the China-Singapore Suzhou Industrial Park, the Nanolis Suzhou, a batch of innovative groups, have been established. In Suzhou industrial park, the energy consumption per 10 thousand GDP and the chemical oxygen demand (COD) and the emission of SO₂ have been decreasing continuously and are currently only in proportion of 1/2, 1/15 and 1/26, respectively, of the average level of Jiangsu province. The high-end industries, high-end commercial industries and the high-level talents are accelerating in accumulation, the output value of high technology industries and the output value of emerging strategic industries account for 63.6% and 55.7% of the total industrial output value separately [24]. According to the statistical data from the Torch Center of Ministry of Science and Technology, the number of independent brand enterprises increased from 800 in 2006 to more than 3000 in 2011. In the year of 2013, the total number of the innovative talents in Suzhou industrial park who were selected in the "The Thousand Talents Plan" (produced by the Organization Department of the Central Committee of the CPC) and added up to a total number of 48, which, for the first time, surpassed Shanghai and Beijing. In addition, by the year 2013, a cumulative 23 post doctoral research stations were licensed in Suzhou high technology district, the number of talents who were selected in the "The Thousand Talents Plan" reached up to 32, and the number of high-level talents exceeded to 12,000. The proportion of talents who have obtained college degrees or higher to the employed population and the total number of introduced leading talents of innovation and enterprising both ranked top among high technology districts in China.

Conclusions

Maximizing the efficiency of regional innovative resource allocation, particularly innovative and entrepreneurial human resource allocation

The creation of advantages in various conditions to improve the agglomeration capacity of local innovative resources, particularly the agglomeration capacity of innovative and entrepreneurial human resources, and to increase the efficiency of the allocation of scarce innovative resources in China is not only the endogenous need for the establishment of a sustainable development mechanism of independent innovative capabilities, but also is an important prerequisite to further release other innovative resources. Essentially, only the establishment of the mechanisms and the systems of efficient allocation of innovative resources can eventually enhance the competitive advantages of the agglomeration of innovative resources and consequently, can create local and national competitive advantages for talents. Regarding the boost of the establishment of the mechanisms and systems of efficient allocation of innovative resources as core strategies with the design and the support of diversified paths is not only an effective way to implement the strategy of the allocation competition of innovative human resources, but also an endogenous need to improve the allocation efficiency of innovative human resources. Therefore,

developed regions should explore the mechanism and the system of the efficient allocation of innovative resources by the help of the design and the practice of diversified paths, to provide institutional arrangements for the diversified paths. However, we must also be aware of that the allocation efficiency of innovative resources in China is not ideal due to various reasons. Because of the "Local state corporatism" that resulted from the fiscal reform of China, there exists a great gap between the promotion work of the agglomeration allocation of talents led by the local government and the final goal of the efficient allocation of innovative resources [25]. Thus, the negative effects of low efficient allocation of innovative resources on the practical work of the agglomeration allocation of innovative resources in different regions must be fully assessed. Although many regions begin to realize that innovative resources are the most important competitive resources in local development and competition, the establishment of the mechanism and the system of the efficient allocation of innovative resources is a long term process and a complicated social system task; it not only needs policy guidance and innovative promotion and supports from local governments, but also requires comprehensive reform and deepening reform of economic system, technology system, education system, talent system and social security system as well as practical support from diversified channels and so on. The efficient allocation of innovative resources, particularly innovative and entrepreneurial human resources depends not only on the scale of the agglomeration of innovative resources but also on the quality of the agglomeration of innovative resources (in this respect, it is a process of quantitative changes to qualitative changes), and also on the intrinsic fusion degrees between the allocation of innovative resources and the mode of the regional economy development. Taking the lead in establishing diversified paths of innovative resources will provide valuable practical exploration for the establishment of the mechanism and the system of the efficient allocation of innovative resources, which is a core strategy to master first chance of regional development and regional competition in the new era. This requires overall planning governance and discretionary approach on the cultivation of demands, the improvement of supply capacities and the equilibrium management of supplies and demands of innovative resources, particularly innovative and entrepreneurial human resources.

Establish a new integration system that introduces, cultivates and utilizes innovative resources, particularly innovative and entrepreneurial talents based resources, to improve the organization and level of support for talent introduction and for cultivation of local governments to foster "Permanent" and "Localized" innovative and entrepreneurial talents

Introduction, cultivation and utilization are the main objectives of the efficient allocation of innovative resources, particularly the growth of the innovative and entrepreneurial talents. It was proposed in the <Key points of Suzhou talent work in 2012> that Suzhou needs to put emphasis on the regularity of study of the introduction and cultivation of talents and pinpoint the conspicuous contradiction and bottleneck of the constraints on talent development, especially the constraints on the agglomeration of key industrial talents. On the one hand, we need to develop mechanisms, carriers and paths for the introduction, cultivation and utilization of talents to promote the accumulation and utilization levels of innovative resources, particularly innovative and entrepreneurial human capital; On the other hand, we need to promote the localization of innovative and entrepreneurial talents. It is necessary to set up good living, working and enterprising environment, to establish clear paths for the integration of introduction, cultivation

and utilization of innovative resources and to improve the abilities of the integration of introduction, cultivation and utilization of innovative and entrepreneurial talents relying on key disciplines and key majors in colleges and research institutes, on college science and technology parks and innovation-enabled enterprises and on key research laboratories and industry-university-research alliances. The establishment of the collaborative innovation and confident relationships in the industry-university-research alliances facilitates the deep cooperation of social capital [26]. Finally, with the help of science and technology parks and diverse incubator platforms, it is necessary to provide a favorable environment and advantageous conditions for the commercialization and industrialization of innovative achievements and for the enterprising development of entrepreneurial talents. It is believed that, with the support of a "nutrient-rich soil", they will take root and blossom, and yield rich fruits.

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