

Study of Innovation Models and Policies in Estonia: Insights and Implications for Shanghai

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Abstract. In order to improve the level of scientific and technological innovation in Shanghai, this subject mainly draws lessons from Estonian scientific and technological innovation policies and systems to make policies and systems for scientific and technological innovation in Shanghai based on some improvement from those in Estonia. This topic will first analyze Estonian policy on technological innovation. Based on the evaluation index system of technological innovation capability in Estonia, the paper concludes the points which according to the situation of Shanghai. With the formulation Shanghai's sciand feasibility of improvement which contains both analysis of the need to improve aspects and related specific operations. Furthermore, this project also anticipates the improvement effect and the actual economic and social benefits to Shanghai. At the same time, this topic also distinguishes the difficulty and the predicament from the policy and the economy aspects between two countries. In addition, the feasibility plan can be drawence and technology innovation policy, and scientific research innovation is formed. In order to promote the implementation, this topic is mainly from the necessity. Thus, the research of this subject can be applied to Shanghai Scientific and technological innovation, which has important theoretical significance and reality meaning.

Keywords: Technology; innovation; policy; Shanghai; Estonia.

1. Introduction

This research will optimize and improve Estonian science and technology innovation policy to introduce into Shanghai and promote and develop local science and technology innovation in Shanghai. This study based on a series of theoretical models, such as: Estonia's scientific and technological innovation ability evaluation index system; basis on research of the connection and relationship among universities, enterprises and government, Estonia's science and technology innovation system are analyzed, and then applied to Shanghai. Moreover, a series of improvement and optimization proposals are put forward to promote the development of Shanghai's local innovation. The advanced aspects of Estonian science and technology innovation policy can be understood through this study, and Shanghai's science and technology innovation policy can be formulated in combination with Shanghai's situation to promote its implementation; It can promote the exchanges and cooperation between Shanghai and Estonia, deeply discuss the advantages and disadvantages of the science and technology policies between Shanghai and Estonia, and absorb the advantages and eliminate the disadvantages of each other, which is of practical significance for strengthening the future science and technology innovation and development exchanges between Shanghai and Estonia. Meanwhile, the theoretical way of Shanghai's evaluation of scientific and technological innovation ability can be created through the study, and the model and theory measurement of scientific and technological innovation ability through the study of Estonian scientific and technological innovation system can be updated as well, which will help Shanghai's science and technology innovation policy and make it develop more quickly and stably which enables Shanghai to enter the ranks of "science and technology innovation city".

2. Research Method

2.1 Case Study

Taxify is Estonian newest company, which already changed its name to Bolt in March, implying a more diversified business. Bolt founded in 2013, raised \$175 million last year from investors like Daimler and Didi, boosting its valuation to \$1 billion. It now operates in more than 30 countries in Europe and Africa, has more than 25 million passengers and 600,000 drivers, and it is the main European competitor of Uber. Bolt's success is no accident. Its rise reflects Estonia's well-established science and innovation ecosystem. Markus Villig who is the company's founder and CEO, started the platform when he was 19 and in high school. Like his peers, he knows programming well, since it is compulsory in Estonia from primary school. Markus's initial idea was to integrate Tallin's taxi resources with those of Riga, which is the capital of neighboring Latvia. He borrowed 3,000 euros from his parents to start the APP. By the time he entered computer course in university, he had ten employees. Then, Markus's product ideas and business model developed and matured during his college years, thanks in part to the Estonian education system's support for student entrepreneurs. The OECD education statistics overview "Education at a Glance: OECD Indicators" presented yesterday, reveals that 9% of entrants to higher education institutions start learning ICT which is the highest rate among OECD countries.

2.2 Interview

According to an interview with the Chinese ambassador to Estonia, Estonian government has also made entrepreneurship easier by digitizing public services. "Why can Estonia stand the high position of scientific innovation even though it is a small country?" "Estonia has the most digitized government in Europe, with 99% of public affairs handled online (excluding marriage registrations and property transfers). Estonians are born with electronic IDs, which record everything. By plugging their ID card into a reader and connecting it to a computer, they can access thousands of electronic services, from public affairs such as paying taxes and health care to starting businesses and signing contracts. The Estonian government admits personal data which are recorded and digitally signed when applying for an electronic ID (Identity Card), and electronic signature authorization can be used only through a password, without the need to repeatedly submit forms to prove personal information. This is both a saving of manpower, resources of the government and time and foundation of scientific and technological innovation."

3. Findings

China and Estonia established diplomatic relations on September 11, 1991. In February 1993, our country accredited an ambassador to Estonia. and Estonian side sent its first ambassador to China in April 2002. Bilateral relations have been developing smoothly since the establishment of diplomatic ties. There have been frequent high-level visits. The relations developed steadily in 2005, with more exchanges in various fields and further strengthening of friendly cooperation. The two countries have maintained high-level contact and enhanced political mutual trust. President Hu Jintao spoke highly of the current situation of relations and put forward a four-point proposal on developing bilateral relations. Both sides should strengthen economic and trade cooperation and continuously raise the level of mutually beneficial cooperation. To strengthen exchanges and cooperation in culture, education, science and technology, tourism and other fields and promote personnel exchanges between the two sides; Strengthen coordination and cooperation in international affairs. Estonia, a former Soviet republic, became independent in 1999 after the collapse of the Soviet Union and joined the European Union in 2004 and the euro zone in 2011. Since then, the country has gone on to develop a digital and knowledge-based society, earning it the nickname "e-Estonia." Estonian technological innovation is particularly prominent in the following three aspects: (1) electronic identity card system; (2) online election system; (3) data interaction channel. As the city with the highest GDP in China, Shanghai has the most high-quality domestic

and foreign resources. In the era of rapid development, western developed countries are vigorously implementing the construction of "technology-oriented cities". At the same time, the scientific and technological innovation of Shanghai is not rich enough, in terms of absorbing foreign innovative ideas, has not yet had their own innovation spirit, enterprises have not their own ability to promote scientific and technological innovation. A large number of high-quality talents can not directly from the enterprise to get their desired remuneration and go abroad while the investment in scientific research in Shanghai is increasing every year, but the amount of funds invested in scientific research institutions is very small, which leads to the lack of links between scientific research institutions and enterprises. As a result, the scientific research market in Shanghai is still not fully market-oriented and the technology trading market system is not complete. At the same time, the knowledge of scientific and technological innovation in Shanghai has not been sufficiently publicized, which leads to a phenomenon that the number of high-quality labor force is negatively correlated with the level of scientific and technological innovation.

And Shanghai is the highest possibility city in China which can cooperate and learn the scientific and technological area from Estonia because of its high quality and sprit of improving. Shanghai is a mega city that full of people which need large number of time to do the demographic census, while Estonia owns a complete system of X-Ray which can do the same job in a better way. According to the Chinese ambassador, X-Ray is not only a cheap way but also a high effective way to gather all Estonian peoples' information in the government system. This kind of technology can also be applied in Shanghai for experiment to do the population census because it is a win-win strategy for both the jobs of the government and the convenience of citizens to apply in all walks of life.

4. Literature References

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Innovation, as the establishment of a new production function, is the recombination of production factors [2]. The most important contribution of work from Schumpet is to be found in discussion of democracy, which is to realize the will of the people and in his own preference for a definition of democracy as competition among political leaders for the votes of the citizens [3]. In 1987, when exploring the reasons for Japan's rapid economic development, the British economist freeman summarized the national innovation system. Freeman believed that it was the national innovation system that promoted Japan's economic development and explored the importance of systematic innovation and state intervention from the perspective of system and industrial structure [1]. Later, Michael Porter combined the national innovation system at the micro level with the macro factors such as the state and the enterprise, and proposed that the competitive advantage of the state was based on the enterprise's scientific and technological innovation. For enterprises, the external environment of the state as an enterprise could also affect the competitiveness of the enterprise [4]. However, freeman's national innovation system emphasizes that the country is the core subject with preferential privileges, thus ignoring the role of other elements in the process of scientific and technological innovation. Therefore, the concept of freeman's national innovation system has certain limitations.

Triple Helix theory is about university-industry-government relationship by exploring the potential innovation and economic development in knowledge society, encompassing both creative destruction and creative renewal [5] [7]. In the triple helix model, universities play the role of science and technology chain and enterprises are the production chain, the government is the administrative chain [6]. Universities are the front-line creators of scientific and technological

innovation, exploring new areas through open research and application, and conceiving new models of economic growth. Universities can provide research results to businesses and governments, which can turn theories into practical products to create value. At the same time, universities can obtain market information and patent fees from enterprises and obtain policy and financial support from the government to support the continuous and effective development of research. The enterprise has its own mature market resources and industrial network, with the strength of industry and specialization.

5. Summary

Through the continuous improvement on One Road One Belt, the cooperation between China and Estonia can also improve by doing business and learning from each other. According to Chinese ambassador, combing the whole personal information into the government is not so easy to realize in China, but the technological system of demographic census is truly a useful function which can be applies and experiment in China to use and which can also lead to a higher efficient life for Chinese people by standing out of their home with only their ID card. Estonia has serious concerns about a brain drain because its proximity to large, economically stable countries in Europe. In order to better promote the development of China-Estonia relations, the Chinese government should also combine the advantages of the two countries' economic development and actively encourage the development of bilateral trade, so as to achieve the goal of steady progress.

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