Study on Innovation Background and Mechanism of Israel and Its Enlightenment on China

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ABSTRACT

This paper analyzes the innovation background and mechanism of Israel and the successful experiences, reaches a conclusion that Israel has emphasized the importance on the tradition and education lead to innovation and technology advancement. Besides, the smart top-level design on mechanism helps to propel the construction of innovative eco-system and facilitates the research achievements landing and cross-border integration. This would be a beneficial inspiration to China to solve the present situation of three weakness and one poor environment, i.e. to strengthen the studies on the policy investigation and developing trend of industrial technological innovation at home and abroad in order to formulate new policies facilitating innovation and to create an atmosphere for start-ups and entrepreneurship to address the “last mile problem”.

INTRODUCTION

It is said that there are two Israeli literary masterpieces, one is the Bible, and the other is START-UP NATION - The Story of Israel’s Economic Miracle, written by Dan Senor and Saul Singer, which is regarded as the Bible for entrepreneurs. It answers a question worthy of hundred-million-dollars: "How is it that Israel - a country of 8.5 million people, only 70 years old, surrounded by enemies, in a constant state of war since its founding, with no natural resources—produces more start-up companies than large, peaceful, and stable nations like Japan, China, India, Korea, Canada, and the United Kingdom?" And offers a vibrant look at what Israel got right in moving from a socialist economy to a high-tech tiger-despite hostile

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neighbors. With the patent per capita, start-up per capita and R&D investment share of GDP ranking first in the world, the number of NASDAQ-listed company only second to the U.S., and GDP per capita over 30 thousand dollars, Israel is honored as the Global Innovation Center and the Silicon Valley in the Middle East. The key recipe for its success is INNOVATION.

On the other side of the same continent, lies another country of long history and brilliant culture named China, where the Four Great Inventions of papermaking, printing, the compass and gunpowder has opened the new chapter of science and technology development. Thousands of years has passed and this ancient country is still facing a New Norm of Economy, experiencing a transition from growth driven by input and investment to one driven by innovation. In 2015’s Report on the Work of the Government, Premier Li Keqiang proposed the Mass Entrepreneurship and Innovation. In this setting, Israel should be a good reference for us to learn about how to pursue innovation-driven development.

INNOVATION BACKGROUND

One of the essences for successful promotion of the mass innovation in Israel is the innovative spirit rooted deeply in Israeli descendants. Saul Singer describes it as a kind of “unbridled innovation”, whereas Israel is the only country in the world, that each powerful people has a nickname even the ordinary citizen can call them by it. It encourages the independent thinking, which derives from the unique religious culture that encourages people to raise questions and find solutions for them.

The innovative spirit is related to the race, religion and history. Before the State of Israel established in 1948, the Jewish people were expelled from their homeland and strolling around for over two thousand years. They dare to challenge everything. After the founding of the country, the military mechanism determines that all the citizen should perform military service which on the other hand trains their ability to make decisions independently. Then these flexible habits of mind would be gradually extended to other aspects of their life and business.

The innovative spirit is related to the global vision and the family tradition. Scattered around the world, the Jewish people are becoming assimilated with the local society and being connected with the Jewish community as their national gene coding is to chase the knowledge and always be ready for the challenges. They will teach their children that the sufferings people are facing will finally become the fortunes people will have. It will be considered as the wisdom for survival. For the Chinese people, we are in possession of the land for over 5,000 years; therefore the investment of real estate would be the preference for us. On the contrary, the Jewish people were expelled by many countries and forced to abandon everything they owned. The chronic lack of fresh water, land, security and resources urged them to attach more importance to the mind, thus be equipped with advanced technologies while education and creativity become their most important wealth.
INNOVATION MECHANISMS

Innovation today is not only limited to the technological innovation, but also the innovation of system and mechanism, management and model. The significant potential of innovative development actually lies within the institutional reform. From this respective, Israel has done a lot in setting up a hierarchical scientific and technological system which include three key parties under the parliament - the Science and Technology Committee, the Ministry of Science and Space and the Office of Chief Scientists (OCS). They work and coordinate with each other to create the first-mover advantages and the competitive edge to fill in the gaps caused by inborn comparative disadvantages through the formulation of precise policies and regulations for innovation and the centralized guidance for local companies.

As to the macro policies and regulations, it can be reflected in three aspects: First, establish an innovative policy system on the basis of supporting research and development. For example, OCS, consisted by specialists from different academic fields, is the most characteristic organizational system in the Israeli Innovation System, which is directly under the administration of 13 ministries. It is responsible for the management and allocation of governmental R&D fund, supporting the companies and the society to launch business and industrial research and development. For start-ups, 50% - 80% of their financial support will be provided by OCS through silent participation and interference management in order to reduce potential risks during the process from innovation achievements to product industrialization. Second, improve the system of laws and regulations that will boost innovation. The Israeli Government successively promulgates Law for the Encouragement of Industrial Research and Development, Law for the Industrial Innovation and Promotion, the Tax Reform Act, Angel Law, Patent Law and Property Law to encourage the R&D investment and improve the tax structural reform and intellectual property, in order to promote industrial technology innovation and create a favorable ecosystem and atmosphere. Third, form the seamless connection of scientific research and industry in innovation mechanism and business model through the implementation of various annual programs under the framework of OCS, including the R&D Funding Program, the Magnet Program, the Incubator Program, the Accelerator Program, Heznek Program, Tnufa Program, NOFAR Program and the establishment of International Cooperation Funding, etc.

From the medium level, the prosperity of incubators and venture investment is working as an engine to drive the industrial innovation. On one hand, venture investment will accelerate the technological innovation and achievement transformation. There are about 70 active venture capital fund including 14 international ones, which covers the links of pre-seed development, seed stage development, competitive development, generic technology development and collaborative development etc. and phases from earlier seed round to late Pre-IPO and IPO. It allows the private investor to buyout the government’s equity in the fund for 5 years with a preferential price. On the other hand, the incubators of “Israeli
Style” will boost the industry to be bigger and stronger. They are professional and segmented accurately with the fields. The Israeli government strictly regulates the number and operation mode, set up the entry and exit barriers, thus the success rate of incubation reaches up to 50% and the nation has become the “Supermarket for Technology Purchase” for industrial innovation and its rapid development. It is worth mentioning that the incubation mode employs a mechanism of “bearing the risk but not sharing the benefits” to integrate the entrepreneur projects, governmental funds and incubation services perfectly to realize the maximized growth of the incubated companies.

From the micro-level, the talent cultivation and company innovation complements each other. The companies and R&D institutes form an effective collaborative innovation to penetrate through the magnet path of technology industrialization from basic research to applied research. And the government will also facilitate the cooperative operation mechanism of “reasonable work division, proper incentives, clear responsibilities and mutual benefits” of universities, research personnel and technology transfer companies to ensure and balance the economic returns of the research achievements while avoiding effect of the excessive “market-orientation” on the source of original technology.

CONCLUSIONS AND ENLIGHTENMENT

The analysis of the root and mechanism of Israel shed lights on a conclusion that Israel has emphasized two aspects. First, the Israeli people stress importance on the tradition and education, which generates their wisdom in innovation and technology advancement. Second, the Israeli government has a smart top-level design on mechanism to propel the construction of innovative eco-system from the macro to micro aspects and to facilitate the landing of the research achievements and cross-border integration.

As to China, the Chinese Government has determined the Strategy of Innovation-driven Transformation and Upgrading of Industry from the 13th Five-year Plan. With the three weaknesses in industrial technology innovative capacity, research achievements transformation capacity, collaborative innovation capacity and the poor innovative environment, the experiences of “Innovative Nation” can be borrowed as an enlightenment to promote the industrial innovation in China from the dimensions of mechanism, incubator and venture investment, company innovation and talent cultivation. Thus there are two suggestions. On one side, to strengthen the studies on the policy investigation and developing trend of industrial technological innovation at home and abroad in order to formulate new policies facilitating innovation. On the other side, to create an atmosphere for start-ups and entrepreneurs to address the “last mile problem” of infrastructure, intellectual property, research and development, taxation law and environment monitoring policy implementation.
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