Chapter 1
Model Analysis and Development Strategy on Building an Industrial Research and Development (R&D) Centre: Shanghai's Practice and Inspiration

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ABSTRACT

The globalization of the market, production and technology, research and development (R&D) will be the inevitable path of economic growth (Du Debin, 2005). A city as an important pole of regional economic development has a concentration and radiation on its surrounding areas. Its effect mainly depends on the size of the city's competitiveness. Generally speaking, production is relatively limited in urban competitiveness; service-oriented urban competitiveness is slightly stronger, while innovative cities will have the strongest competitive edge, the region's core cities.

Therefore, innovativeness becomes one of the strategic development directions of cities and regions. The globalization of multinational corporation research and investment, the continuous development of local R&D institutions, along with the industrial R&D center cluster allow the enhancement of innovative capabilities and competitiveness. International Industrial R&D center is an R&D institution in a city or region, which gathers global and regional Multinational Corporation. It is becoming the world's newest product especially in technology innovation and orientation locations, such as the U.S. Silicon Valley, Singapore, Bangalore in India, Hsinchu and Shanghai in China.

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This chapter defines the concept of industrial R&D center in order to explore the industrial R&D impact upon the host country. On this basis, R&D center on the concept of the international industry is defined; interviews with experts as well as empirical studies on the development of industrial R&D centers are classified. Based on the above definition, this chapter will focus on building for the Shanghai R&D centers of global industry and practice related initiatives described and provide reference and guidance based on the proposed Shanghai foster industry related countermeasures R&D center for other cities by emphasizing on industrial R&D institutions.

INTRODUCTION: FOREIGN DIRECT INVESTMENT (FDI) AND INTERNATIONAL R&D INVESTMENT

Foreign Direct Investment (FDI) is one of the more popular issues in international economics. It means to control the business part of the property investors to directly participate in management for profit capital exporting activity. According to the World Investment Report 2007, direct investment outflows from developed countries increased by 56% over the previous year, amounting to 169.2 billion U.S. dollars. Despite the international financial crisis since 2008, and the global slowing down this new feature has manifested itself. FDI in developing countries in Asia reached a more robust foreign investment momentum. The output from developing countries rose 3% than the previous year (UNCTAD, 2008). It can be seen in the field of FDI, both developed and developing countries are actively expanding their market space.

In the traditional international investment field, scholars' researches mainly focus on production within the field of property investment. In recent years, more and more industrial R&D investments have continuously come into the researchers' perspective; along with the related research is the increasing concern for the community. In the current view, industrial R&D is no longer a novelty. With the development of economic globalization and the economy, there is a gradual increase in the dependence of the knowledge economy, industrial development, especially multinational corporations in the industry. The huge R&D investment has become an important driving force for socio-economic development. Development strategy from the perspective of transnational corporations, with increasingly fierce market competition, shows that the field of competition has been extended from traditional product sales to product research and development phase (Wang Chunfa, 2003). Therefore, it can be said that industrial R&D investment is the development of FDI in the advanced stage. Its purpose is to better utilize all types of R&D resources of the enterprise's core competitiveness.

At present, enterprises of transnational R&D investment can be divided into two types: one for the applied R&D center also known as Development Center, whose main task is the core technology in some countries and regions, thereby developing products to suit local needs. Second, is the research centre based on research and studies. Its main task is to engage in basic technical and theoretical research, and the long-term development for the company's strategic technology reserve resources.

In fact, from a time perspective, the industry R&D capabilities are constantly undergoing evolution. Industrial R&D functions such as multinational corporations shift their trajectory from the initial transfer of technology - for local product development - developing products for the global market - for the enterprises engaged in basic research (Li Rui, 2004). Currently, the main function of industrial research has become the global market product development, technical support, and implementation of basic research.