

# Optimized Analysis in Innovation Ecosystem of High-end Equipment Manufacturing Industry

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## Abstract

*High-end equipment manufacturing industry is the modern high-end part of the equipment manufacturing industry, which has irreplaceable important position and role in the developing progress. There are a variety of bottlenecks in the development of high-end equipment manufacturing industry of our country, which put forward higher requirements. The industrial innovation ecosystem of High-end equipment manufacturing industry contains four main bodies which are Industrial policy, Industrial chain system, Human capital and the market environment. This paper illustrates the contents of each body, optimizing each element of innovation ecosystem and keeping a better balance of the whole high-end equipment manufacturing industrial ecosystem.*

**Keywords:** Innovation ecosystem; High-end equipment manufacturing industry; Industrial policy

## Introduction

In recent years, more and more attentions are paid on the high-end equipment manufacturing industry ecosystem research. The "twelfth five-year" development planning points out that fostering and developing high-end equipment manufacturing industry is the necessary request to enhance the core competitiveness of our industry.<sup>[1]</sup> A good ecological environment is the basic condition to promote the development of high-end equipment manufacturing industry rapidly. In order to blaze new trails for the development of the high-end equipment manufacturing industry ecosystem, we need to carry out the analysis and optimization of the high-end equipment manufacturing industry innovation ecosystem elements.

### 1. The High-End Equipment Manufacturing Industry Innovation Ecosystem Components

The Customer-oriented "Innovation ecosystem", with general ecological characteristics of natural systems, is a system formed by symbiotic co-existence and co-evolution of High-end Equipment Manufacturing Industry in the global context, which is linked by many aspects.

#### 1.1 Industrial policies

On the one hand, the government's policy can provide support for the industry development, on the other hand may also affect industrial development decision-making. It may result in industrial transformation or change industry development trend. Deborah Dougherty and Danielle d. Dunne (2011) argues that the government policy can guarantee good development atmosphere, promote the development of the industry. Such as providing the necessary infrastructure, the technology support, etc.<sup>[2]</sup> Gao Changchun and Cao Guigong in 2010, the author puts forward the concept of creative industries horizontal chain, emphasize the harmonious coexistence of the external environment between different industries and think the government is powerful driving force in the development of industry<sup>[3]</sup>.

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[1] High-end equipment manufacturing industry "twelfth five-year" development planning [R]. Beijing: ministry of industry and information technology, 2012

## 1.2 The Industrial Chain System

On the industrial chain, to be selected according to the overall development strategy and internal and external resources, emphasis on the interaction between master and develop core technologies and high-end equipment manufacturing industry chain. Industrial system is the core of the industrial innovation ecosystem. One of the core enterprise is the key of industrial ecosystem formation. The construction of a complete industrial chain is missing in our country. High-end equipment manufacturing industry competition secretly, in fact, is the industry chain of the competition.

## 1.3 Human Capital

Talents shortage and the unreasonable structure of high-end equipment manufacturing industry become a big problem in our country. The high level of proportion in the total number of high-end talent is not high. In some areas, even appear blank, high-end talent in urgent need of high-end talent to revive high-end industry vigorously. This requires from the grasp of all aspects of personnel to ensure the consistency of human resources and mission critical.

## 1.4 Market Environment

Product market share is low. The equipment manufacturing industry in our country is also committed to seek more, expanding production capacity, and paid little attention to improve the quality of the companies. With core technology is not developed, a enterprise response ability is too slow to rapid change of the market. The product development cycle is relatively long, which unable to cope with rapidly changing customer and market lead to meet market rate low.<sup>[4]</sup> Meanwhile, a serious lack of major technical equipment and high-tech production capacity, resulting in an influx of foreign high-end products in the domestic market. High-end must pay attention to market cultivation, stepping up efforts to demonstrate the application.

## 2. Status of High-End Equipment Manufacturing Environment Analysis

In recent years, high-end equipment manufacturing industry developed rapidly in China. A large number of important independent innovation achievements achieved a historic breakthrough.

At the policy level, the national makes major strategic decisions to speed up cultivating high-end equipment manufacturing industry. What's more, high-end equipment manufacturing development, earlier stage is a process of high input, a new technology from research and development to the industrialization of each step need capital support, capital support and demand also increases exponentially. A lot of enterprise capital source channel is very narrow; most have to rely on the strength of the government and the ontology of its own funds. For this must pay big money link, I will need the support of strong and systematic investment and financing policy.

There is no perfect legal system of intellectual property rights protection. We should just bring awareness to intellectual property rights protection issues around the world. Weak awareness of intellectual property in our country, make used stealing intellectual property, for high-end equipment manufacturing, generally despise intellectual property protection technology research and development make intellectual property lose self-protection barrier.

Top talents of high-end equipment manufacturing are needed to develop the high-end technology. It is difficult to achieve breakthrough innovation pace Because the lack of high level development personnel research and professional knowledge and technical level of senior technical and management personnel, also lacks the reasonable and effective use of talents.

## 3. Analysis in Innovation Ecosystem of High-end Equipment Manufacturing Industry

### 3.1 Policies to Promote Industrial Transformation, Increase Investment in Independent Innovation

Increase the intensity of investment in innovation and independent research and development and gain the initiative in research and development to produce high-end equipment with independent intellectual property rights in our country which can improve the ability of equipment and defense ability, drive the most high-end equipment products to realize industrialization and localization

Build a sound and various service systems and improve service ability and level. Intellectual property management, auditing and tax services, management and information consulting services and so on all play a vitally important role to the development of industry.

### **3.2 To Perfect the System of Such Services in the Development of High-End Equipment Manufacturing Industry Creates a Good Environment for Industry Development**

Developing the high-end equipment manufacturing industry must pay attention to market cultivation and step up efforts to demonstrate the application.

The development of high-end equipment manufacturing and research and development production of major technical equipment must implement "yituo project". Because of the complexity and innovation of high technology, the high-end equipment manufacturing industry centered with high-end production and sales traditionally cooperate with each other. As for interest entities, the member enterprise of innovation ecosystem should be governed effectively for synergy effect.

### **3.3 Improve the System of Related Personnel and Service Measures**

A country whether can attract talented people in the world depends on the ability of providing a good ecological environment for all kinds of talent for growth and career development.

The necessary various services such as education and health care for children, families of employment and so on should be provided after the introduction of talent .

At the same time, improve the supporting facilities to meet the demand of high-end talent to regional character.

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