

Tactics to Develop the Strategic Emerging Industry Based on the Third Industrial Revolution in Hubei

Zhihong Li^{1,*}

¹Business School, Jiangnan University, Wuhan, Hubei 430056, China

*Corresponding author. Email: linanwudingbang@163.com

ABSTRACT

The third industrial revolution is approaching. It will bring both opportunities and threats either to the traditional industry or to the strategic emerging industry like electronic information, new energy and new material, etc. How to develop the strategic emerging industry is the key for the industry to be melted into the third industrial revolution in Hubei. Therefore, the paper first expounds connotation, features and trend of the third industrial revolution, then analyzes the relative issues faced in this new conditions during the further development of the strategic emerging industry. Finally, the paper puts forward some tactics to develop the strategic emerging industry under the third industrial revolution.

Keywords: tactics, strategic emerging industry, the third industrial revolution

I. INTRODUCTION

Having been developed for seventy years, the industry in Hubei has formed a relatively intact system. The coming of the third industrial revolution is making a remarkable influence on the existent system. To join in the third industrial revolution actively and become a participant of the top section in the global industrial chain is longed for by all the industries. Facing this rival, the industry in Hubei should take advantage of the third industrial revolution, improve its existent industrial system and develop the strategic emerging industry so as to be a main force in the global industrial chain.

II. CONNOTATION, FEATURES AND TREND OF THE THIRD INDUSTRIAL REVOLUTION

A. Connotation

The digital evolution of the manufacturing industry is the mark of the third industrial revolution[1]. Its foundation is the integration of the internet technology and the recyclable energy[2]. Its main components are the transformation of the recyclable energy, distributive production & storage, distribution by the energy internet and transportation of zero discharge. The third industrial revolution is bringing a tremendous change to the human being either in the production or in the life[3].

B. Features

First, digital technological feature. The mass customization based on the digital evolution is the basic characteristics. It means a vast increasing product

varieties, consumer's individual demands able to be satisfied, user's wide participation in the outcome innovation. Its realization needs a series of technological progress in synergy and industrialization so as to cater for the consumer's changing demand quickly with a low cost. These technologies usually include rapid prototyping like 3D printing[4], new materials like carbon fiber material, industrial robots and the service based on the network just like social manufacturing[5].

Second, downsizing organizational structure. The organizational model of the third industrial revolution has been downsized. It consists of millions of medium small enterprises from the whole nations or the whole world. They play their roles in the production, process and business with the international commercial giant. Among this downsizing structure, people can make their novel ideas and share them with the others by the social network and produce the recyclable energy and share it by the energy network[6]. All these owe to the application of the cloud wisdom, an outcome integrating the software manufacturing, internet and cloud computation.

C. Trend

One is the customization on a large scale. With the new-type equipment able to support the digital manufacturing industry, it is possible for the end product to be customized. For the enterprise, it is essential to hold the advanced new manufacturing technology and the productive competency that can flexibly produce the products with high added value and low costs.

Then, highly integration between the manufacturing industry and the service sector is blurring the second industry and the third sector. Since the outcome is done with the highly effective and intelligent machinery in the third industrial revolution, the main business activity for the enterprise is changed from the traditional production to the R&D, IT, logistics and marketing, etc. To react to the marketing demand quickly, the manufacturing industry and the service sector must be mixed up. Also, the need to the worker with low skills is being dropping while the professional service personnel with high skills are much wanted. Therefore, a deep effect is being left on the education, training and employment of different nations.

Next, the global economic layout is being changed. The advanced nations or regions with technology, capital or market, etc may become the main supplier of the new equipment or resources. They will dominate the top end of the industrial chain with high added value. Their advantage in the top end service sector can be further strengthened and the core of the manufacturing industry once flowed out to the less developed nations or regions may be returned to meet with the need of integration. It is possible for these nations or regions to get the benefits due to the adjustment of the industrial structure[7].

III. ISSUES CONCERNING DEVELOPING THE STRATEGIC EMERGING INDUSTRY IN HUBEI IN THE THIRD INDUSTRIAL REVOLUTION

Having been developed for decades of years, a relatively complete industrial system has been formed. Based on it, some strategic emerging industries like electronic information, biologic engineering, new energy and new material, etc are being setting up. Encouraged by the concerned industrial policy and mechanism, Hubei has achieved much progress in developing the strategic emerging industry. Take it for example, ongoing fast growth of the high tech industry, further consolidation of the self-independent innovation ability, continuously going-forward industrial cluster, etc. But, with the approaching of the third industrial revolution, some new issues appear and need to be dealt with.

A. Industrial market mechanism is to be formed and the demand of the initial high tech product is to be fostered

The evolution of the strategic emerging industry needs the government to give a guide around the market. At the start to develop the strategic emerging industry, the high tech outcome may face some hardships and lack competitive forces because of a higher cost and less recognition than the common product. At this time, the government should deploy its guiding function in

technological choice and business style innovation based on the market.

B. Insufficient use of the hi-tech in serving the other industry because of the lack of the encouragement effect of the skilled personnel

Basically, the rival of the strategic emerging industry is that of the innovative skilled personnel[8]. The innovative outcome decides how the core technology is held. Currently, the development of the hi-tech skilled personnel has been well pushed, but the application of the technological outcome is to be further improved and the concerned policy is to be focused on supporting the R&D of the front end product able to serve the other industries besides the hi-tech, for example, the 3551 plan in Wuhan has achieved a lot in introducing the excellent skilled personnel in electronic information, biology, new energy and environmental protection, etc. But how to make the innovative outcomes of these people industrialized to better serve the other fields is to be strengthened as soon as possible. Only in this way can these skilled personnel be greatly encouraged to realize their value with their creation and retained..

C. Scientific & technological finance is to be further consolidated

At present, the scientific & technological finance lags behind the industrial development demand. The integration between the science & technology and the finance is not sufficient[9]. This leads to some results like insufficient financial cohesion and radiation, the monotonous financial service and the financial support to the enterprise to be raised, etc. The financial resources are scarce and flowing. They play an important role in the regional economic development, because funds are much wanted in the industrialization of the scientific & technological outcomes from the strategic emerging industry.

IV. TACTICS IN DEVELOPING THE STRATEGIC EMERGING INDUSTRY IN HUBEI IN THE THIRD INDUSTRIAL REVOLUTION

A. Implementing the significant application project as an example and perfect the industrial system around the market demand

The development of the strategic emerging industry needs to be pulled by the effective market demand. However, the insufficiency of the maturity of the relative outcomes leads to the hardship of the market expansion, such as the charge and maintenance system to be solved for the electrical car, unstable cloud computation, and too high costs of the power generation of the wind electricity and solar energy and so on. Besides, the proper infrastructure and service

system is to be further improved. To stimulate the market consumption effectively, it is a good way to start a major project as demonstration in the region with a better industrial base so as to find out a reasonable industrial evolution model and business model. Then, further perfect the industrial system by way of setting up the industrial technological norms and the market access institutions[10].

B. Breaking through the key technology and construct an intact technological system based on the industrial chain

The strategic emerging industry is a mix deeply integrating the new technology and emerging industry. To build a technological and industrial system with global competitiveness, it needs not only to break through the core technology, but also to surmount series of auxiliary technique in the proper infrastructure construction and test, etc to meet with the need of the industrial chain. Concretely, in the fields of information, recyclable energy and biology, we should first systematically expound their industrial chain, value chain and division of labor in the globe. Then, aimed at the industrial chain with international competition, do the joint trans-fields, trans-discipline solution of the key technological problem around the significant science & technological innovation project to develop the strategic emerging industry. In this way, the innovative elements may be led to serve the enterprise and the technological innovative competency can be strengthened.

C. Diversifying the investment and gradually improve the financial system to serve the science & technology

At the start of the strategic emerging industry, the main outcome is to be formed and this may give the investor both opportunity and risk. It needs the government to encourage the investors like enterprises, venture capital and insurance companies, etc. to join in by risk sharing mechanisms. The government should increase the input into the innovative activity in the front line technological development and application and in the multiple technological routes. This diversified, multiple-level risk sharing mechanism is helpful to guide the social resources to flow to the industrial technological front line and to further perfect the financial system in the science and technology.

V. CONCLUSION

The third industrial revolution will deeply affect the development of the industry. To make the industry adaptive to the new conditions, the traditional industry should be reformed in the aspect of technology and business models. The strategic emerging industry is the foundation to transformation and upgrade of the industry. So, the construction and application of the

strategic emerging industry must be consolidated in various ways like hi-tech, inputs and market orientation.

Acknowledgment

The paper is funded by the Discipline Group of the Integrative Management Between Economy and Industry in the City Circle, by the Wuhan Studies Institute, Hubei, China (IWHS20172001), and by Research Center on the Development of the Manufacturing Industry of the Wuhan City Circle, China (wz201607).

References

- [1] Paul Markillie. The Third Industrial Revolution, The Economist, June, 2012
- [2] Zheng Xu. The Third Industrial Revolution and Chance Comes to China, Business Review, www.china-nengyuan.com/news/38250.html
- [3] Jeremy Rifkin. The Third Industrial Revolution: How the New Economic Model Changes the World(translated by Tiwei Zhang, Yuning Sun). Zhong Xin Press, June 2012
- [4] Zhaohui Li. 3D Printing Guides the Third Industrial Revolution, Trade Remedy. 2012(11), p8
- [5] <http://bbs.pinggu.org/forum.php?mod=viewthread&tid=2248924&page=1>
- [6] Huaiqiao Ying. Outlook to the Times of the Cloud Intelligence: From the Software Making the Apparatus to the Software Making All Things, Oversea Electronic Measuring Technology, 2013(1)
- [7] <http://bbs.pinggu.org/forum.php?mod=viewthread&tid=2248924&page=1>
- [8] Ying Wang, Jianguo Xia. The Third Industrial Revolution and Training of the Innovative Technological People, China Higher Education. 2013(1),pp24-26
- [9] Qinbo Tang,Xiaoyan Zeng.Evaluation of the Actual Evolution Level of the Scientific & Technological Finance in Hubei, Modern Business Trade Industry, 2019(15), pp3-4
- [10] Feng Liu, Zhe Li, Zhi Chen. Issues and Suggestions to Develop the Strategic Emerging Industry in China. China Science Journal. <http://ccn.mofcom.gov.cn/spbg/show.php?id=13577>