Analysis on the Development Strategy of Data Industry in Hebei Coastal Areas

——Taking Qinhuangdao Economic and Technological Development Zone as an Example

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Abstract—**Data industry is one of the new industry supported and developed by nation during the 12th Five-Year Programme period. Hebei coastal areas took the lead in introducing data industry development planning, constructing the data bases in the country and occupying the initiative of development. Although Hebei coastal areas have the advantage of policy, location, environment and first mover of data industry, they also face serious challenges in the aspect of industrial upgrading, economic foundation, human resources and potential competition. Based on the comprehensive analysis on the advantages, disadvantages, opportunities and challenges of data industry in Hebei coastal areas, the paper provides some corresponding countermeasures and suggestions for the data industry.**

Keywords-Hebei coastal areas; data industry; Qinhuangdao development zone; SWOT analysis

I. INTRODUCTION

In November 2011, the State Council issued the "Development Planning for Hebei Coastal areas" and proposed to "Taking the existing development zones or industrial parks as carriers, construct the electronic information industry bases of Qinhuangdao and Tangshan[1]", clearly put forward to "construct the data industrial park of Qinhuangdao[1] ". As early as 2008, Qinhuangdao Economic and Technological Development Zone has put forward the development strategy to construct the "China Data Valley", lent full support to the development of data industry and has made important achievements. The publication and implementation of "Development Planning for Hebei Coastal areas" will effectively promote the development of data industry in Hebei coastal areas.

II. THE CONCEPT AND DOMESTIC AND INTERNATIONAL CURRENT DEVELOPMENT SITUATION OF DATA INDUSTRY

Generalized data industry is equivalent to the information industry. Its concept connotation covers four fields, including hardware processing of information processing equipment, software research and development of information processing equipment, software and hardware combination and information service . In the narrow sense, data industry refers to information processing and information service industry. It is a industry that makes the products of data information through the processing of information resources and performs information service by using the CD-ROM, disk, network and other medias. In general, the data industry refers to the narrow one[2].

As the global information industry coming into data industry, and the division of labor, transfer and development within the worldwide, data industry has become a necessary for the economic and social development in all countries and regions. In order to catch up with international standards and attain an ultra conventional development in a short term, the establishment of "Science Park" is the typical successful experience of international information industry[2]. The success of American "Silicon Valley", Japan "Tsukuba", Taiwan "Hsin-chu" and the Indian software industry has proved that this is a fruitful strategic decision .

From the beginning of first introducing and testing the service of the United States GRA database by Beijing document service in1975, China's first large-scale data factory -- Ideal Data Industry Limited Company was founded in 1994. Our data industry upholds the "two simultaneous" development principles, including developing self-built domestic and foreign database data simultaneously and developing the construction of domestic online database system and the establishment of international online retrieval terminal simultaneously. The development of data industry has experienced a process of from the initial simple introduction to the development of autonomy scale and industrial production.

Overall, the current development of the data industry in our country is still at the primary level. There is still a large gap with the international data industry in developed countries or regions. This is not commensurate with the international status of our great power which has a civilization history of 5000 years, rich resources of data and 70 billion publications for one year. This also reflects and reveals such a reality from different aspects -- It is extremely urgent and still has a long way to construct and develop China's data industry. Only by insisting "high starting point of planning, high standards of construction, high quality of management" can we build China into a powerful data industrial nation with Chinese characteristics and international advanced level.

III. THE DEVELOPMENT STATUS AND FUTURE PLANS OF DATA INDUSTRY IN HEBEI COASTAL AREAS

In October 2008, conforming to the requirements of regional economic development and strategic transformation, as a coastal area of Hebei province, Qinhuangdao Economic and Technological Development Zone took the lead in our

country to create the concept of China's "Data Valley", set up the first national data industry base, took the development of strategic emerging data industry as a breakthrough for the adjustment of industrial structure in development zone, gave priority to the development of data service industry, vigorously cultivated data industry, encouraged the research and development of data, software and hardware and manufacturing, strengthen the construction of industrial base data and committed to build the largest data industrial cluster which has obvious characteristics in the north of China[3]. Under the guidance of this strategic thinking, China's "Data Valley" is promoting steadily and showing a good momentum of development.

By July 2012, a plurality of strategic cooperation projects and more than 40 data of enterprises including IBM 3D Internet technology platform, Peking University (Qinhuangdao) Science and Technology Industrial Park, Qinhuangdao (CAS) data industry R&D base, MII electronic five Institute Qinhuangdao branch, Chinese Animation Group (Qinhuangdao) animation the game industry base and ZTE network "wisdom city" north base have been attracted to the data industry base with the total planning area of 8.07 square kilometers and the starting zone of 1.4 square kilometers[4]. In data industry base, the landmark "Data Valley" building as well as the 49 monomer villa type building "Xiangyuan Data Valley" will be put into use. A project of deep river landscape completed. The Chinese "Data Valley", a combination of office, creativity, and leisure is formed. In 2012 December, sponsored by the China Electronic Information Industry Development Research Institute, the "2012 China Economic Information Industry Annual Meeting" was held in Beijing. Qinhuangdao Economic and Technological Development Zone was named as the"2012 China Best Data Industry Base" and it is the only one to be so honored.

About the future construction of data industry base, Qinhuangdao Development Zone formulated the " The overall planning(2010 - 2020) to create innovation demonstration area of data industry ". The goal is to build a national data industry base and industrial park. By2020, it plans to introduce more than 20 fortune 500 companies, establish more than 50 regional or national data industry headquarters, cultivate at least 100 larger innovative enterprises,build new public service platforms with perfect functions and intelligent city management information platform, develop a new performance approach of digital city management and build it into a core center which has a large influence and can guide the development of the data industry in China.

IV. SWOT ANALYSIS ON THE DEVELOPMENT OF DATA INDUSTRY OF HEBEI COASTAL AREAS

A. The Advantages of Developing the Data Industry

First is the advantage of policy . "The Twelfth Five-Year Plan of Science and Technology Development Plan" puts forward to promote the development of the next generation on the Internet, a new generation of mobile communications, cloud computing, Internet of things, intelligent terminal, high performance computing, the implementation of the new show, national broadband network and cloud computing technology industrialization project. It focuses on the development of integrated circuit, wisdom city, wisdom industry, geographic information, software, information services and other related technologies and promote the informatization to drive industrialization. "Development Planning for Hebei Coastal areas" explicitly proposed to "build the data industrial park of Qinhuangdao". Development of industry of Hebei coastal areas is in line with the spirit of transformation of the mode of economic development and the national and regional economic development strategy.

Second is the advantage of location . Hebei coastal areas is located in the center zone of the Hebei coastal area of Bohai economic circle which has the most development potential .It is the joint part of Northeast and North China which are two major economic regions. It has convenient transportation, and communications. It also has developed network of air line, railway and highway amd perfect network system of communication and transportation. It has the export-oriented economic conditions for the construction, planning and development of data industrial and the industry transfer capacity. We should bring into full use of the advantage that Hebei coastal areas are near Beijing and Tianjin areas. It is necessary to strengthen the fusion with Beijing and Tianjin in the industrial development, infrastructure and construction of integrated market system and become the demonstration zone of industrial cooperation development in Beijing, Tianjin, and Hebei areas .

Third is the first-mover advantage. In Hebei coastal areas, Qinhuangdao economic and Technological Development Zone in the country first proposed the concept of data industry, and also the first to develop data industry base organization and data industry area. Qinhuangdao development zone makes the data industry as a new strategic industry to develop and pays attention to the data industry top design, scientific planning and reasonable layout data industry development. The "Outline Development Plan of data industry in Qinhuangdao economic and Technological Development Zone" and the "Data industry innovation demonstration area planning of Qinhuangdao economic and Technological Development Zone" are drawn up. By virtue of regional resource, natural endowment, industrial and environmental conditions, a number of large and strong enterprises are introduced, the industrial agglomeration effect has been formed ,the heights of the development has been seized and the development initiative has been controlled.

B. The Disadvantages of Developing the Data Industry

First is the weak economic foundation. According to statistics, the gross production in Qinhuangdao Economic and Technological Development Zone is 20.83 billion yuan in 2011. It is the sixty-second in the 131 national development zones, and it is 10.74 billion yuan less than the average. Although Qinhuangdao Development Zone has introduced a lot of cooperations which has a large number of

funds and powerful scientific research ability and the industrial agglomeration effect has formed, the basic data industry is still relatively weak and not sufficient to form scale and brand effect. In addition, data industry also has higher requirements for the region information exchange, circulation, consumption capacity, resource conditions and development space. Hebei coastal areas have the certain advantage, but also exist constraints such as weak regional economic foundation and low environmental load capacity.

Second is the lack of professionals. The restraining factors of speeding up the development in Hebei coastal areas is that there is an shortage of high-level personnel and the scientific and technological innovation capacity needs to be improved. Development of data industry needs to have a number of high-quality talents, especially high-level talents and innovation team. Taking Qinhuangdao Development Zone as an example, Qinhuangdao currently only has two key universities:Yanshan University and Northeastern University at Qinhuangdao.The development of data industry is extremely in the lack of human resources. Therefore, we must establish and perfect the system of talent introduction and supporting service as soon as possible, attract the students who are from Beijing-Tianjin regions and overseas to settle down in Hebei coastal areas data industrial park and reserve abundant human resources for the long-term development of data industry.

C. The Opportunities of Data industry in Hebei Coastal Areas

First is the broad demand of data in domestic market. China's population and economic scale determined that our country has the world's biggest data industry market, and objectively provide a good market opportunities for the development of data industry. In the past thirty years, China has experienced rapid industrialization, informatization, networking and will be implementing a datamation. Data industry is affecting all aspects of society, from the government, business and technology to medical treatment, education, economy, humanity and other fields of society. The demand of data market is broad. There is huge potential to grow and it has good prospects for development.

Second is that data technology has not yet formed technology monopoly. So far Data technology is mainly exploiting source. It has not yet formed the absolute monopoly of technology. Even IBM, Oracle and other industry giants, just integrate exploiting source technologies with the original product. Exploiting source technology is open to any country. China companies also can share the cake of open source. In the past few decades, China information industry has been lagging behind the foreign giants and is at the end of the industry chain for a longtime and earn lower profits. But in the emerging data processing area, Chinese and foreign companies almost stand on the same starting line. If only considering the processing technology of large data in the narrow sense, Chinese and foreign only has a 5-year gap. If we considering the digital asset scale and the use of technology, the gap mainly reflected on consciousness.

D. The Threat of Data Industry in Hebei Coastal Areas

First is the potential industry risk. As a new high-tech industry, the relevant laws and regulations, industry standards and regulations of data industry are not perfect. Good industrial ecological environment has not yet formed. Hebei coastal areas is the pathfinder of the development of data industry. There is no successful experience to follow in China. In order to maintain their own first-mover advantage in domestic data industry and ensure to always grasp the initiative in the development of domestic data industry, we must dare to try. We may face greater industrial risks in the process of development. Therefore, Hebei coastal areas should not put "all eggs" in a data industry "basket"and need to actively develop other dominant industries in developing data industry at the same time.

Second is the potential threat of competition. Though Hebei coastal areas occupied the initiative and advantage in the development of data industry, the area's comprehensive strength is weak. Beijing, Tianjin, Dalian, Shenyang, Qingdao, Yantai and other regions in Bohai economic circle may catch up from behind by developing advantage on the policy, capital, talent and other aspects. For example, Beijing Zhongguancun is grabbing the development opportunities of data industry, arranging the large data industry and have made large data industry into the "Zhongguancun strategic emerging industry cluster innovation leading project (2013 - 2015)". In 2012 December, Zhongguancun large data industry association was established. It set December 13th each year as the big data day in Zhongguancun and carried out the exchange activities with large data as the theme. If Hebei province does not enhance the sense of hardship and accelerate the development, the accumulated first-mover advantage may be replaced.

V. DEVELOPMENT STRATEGIES OF DATA INDUSTRY IN HEBEI COASTAL AREAS

A. Take the Opportunity that Hebei Coastal Development has been Upgraded to a National Strategy, Strive for More policy Support from the Country and Hebei Province

In 2011 the state issued the "Development Planning for Hebei Coastal areas" which made Hebei coastal areas gained wider development space and more powerful policy support. We should take the implementation of the plan as the starting point, actively strive for greater support from the country and Hebei province, make full use of the first-mover advantage, win the leadership of the development of industry standards and regulations, ensure their influence and power of discourse in national data industry, and constantly consolidate and expand the leading position of development zone in domestic data industry.

B. Increase Investment,Ccreate a "Data Valley" Brand and Enhance the Visibility of Hebei Coastal Industrial Database

Hold a series of investment promotion, show the perfect infrastructure and the good investment environment in Hebei

coastal areas. vigorously introduce the domestic and foreign well-known related enterprises and institutions of data industry and produce scale effect, then make the concept of "Qinhuangdao, China data Valley" like the United States Silicon Valley, Zhongguancun IT Industrial Park and sun valley rooted in the hearts of people.

C. Explore the Establishment of Collaborative Innovation Mechanism of Scientific Research Institutions, Enterprises and Universities and Accelerate the Integration Process

Taking Qinhuangdao Development Zone as an example, the development zone is surrounded by Yanshan University, Northeastern University at Qinhuangdao and other 13 colleges and universities and it has more than 100 national, provincial and municipal, private and other scientific research institutions of various types. Yanshan University has a National University Science Park, a" State Key Laboratory of meta stable materials science and technology," a "national technology transfer demonstration mechanism" and 24 provincial and ministerial key laboratories and engineering technology research centers. Northeastern University of Qinhuangdao has two "985 Project" laboratories, including direction-finding laboratory and the next generation network technology laboratory. Qinhuangdao development zone should make full use of the platform of scientific research institutions of higher learning and scientific research institutions and human resources to promote the integration.

D. Make full Use of the Position Advantage that Hebei Coastal Areas are near Beijing and Tianjin Areas to Attract High-level Talents

Hebei coastal areas are lack of high level talents that are related to data industry. only through the development of preferential policies can we attract the students in Beijing-Tianjin regions and overseas to the park and meet the much-needed demands of talents with high skills of data industry. It is available to speed up the implementation of talent innovation park construction in Hebei coastal areas, perfect service system and solve the worries of the talents.

E. Innovate in Financial Services, Provide Funding for the Development of the Enterprises in the Park

Hebei coastal areas must establish data industry development funds, focus on supporting the data enterprises with growth potential and provide financial support on research and development of key and major technology. At the same time, encourage private capital to venture capital to small and medium-sized data enterprises and expand the financing channels for small and medium-sized enterprises[5]. Focus on supporting backbone enterprises in the data industrial park. Provide diversified financial services such as Stock market risk investment and overseas financing. Provide effective fund security for basic research and technology innovation.

REFERENCES

[1] National Development and Reform Commission. The development planning of Hebei coastal area. Nov. 2011.

[2] LV Aig-uo, ZHAO Xiao-dong, QIE Shao-jian. Feasibility analysis of the data of industry of Hebei coastal areas[J]. Chinese Public Administration.2012(11):115-117

[3] REN Yi-yi. Promote the Qinhuangdao regional development with data industry[N]. Chinese Industry Magazine.19th,June, 2012

[4] WANG zhen, WANG bo. Qinhuangdao China Data Vally[N]. Computer World. 30th July,2012

[5] CHEN yan-fang,YANG yu-fan. Study on development strategy of Qinhuangdao economic and Technological Development Zone[J].Commodity and Quality. 2011 (8): 60-61