Electronic Commerce Platform, Logistics and Local Economic Development: A Case Study of Global Innovation Center in Qingdao City

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By

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Abstract

The current Chinese electronic-commerce industry has developed into a highly specialized stage, and logistics is the most significant link of the e-commerce supply chain. Therefore a modern industrial aggregate of electronic-commerce and logistics enterprises can utilize the cluster competitive advantage to meet the service demand of enterprises. This thesis uses a case of Global Innovation Center in Qingdao, a medium size city in eastern China, to argue that emerging Chinese electronic-commerce and logistics industrial cluster plays an important role in terms of fostering small/medium-sized enterprises and promoting regional economic growth. The hypothesis is that the interaction of modern logistics and electronic-commerce platform will facilitate the industrial upgrading of regional specialized industries and ultimately reflected in the growth of local economics.

Key Words: Electronic Commerce; Logistics; Economic Development; Industrial Aggregate
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Introduction

The Qingdao Global Innovation Center has been an answer to Dalian's High-Tech Cluster or High-tech Industries Development Zone in Xi’an. The foreign manufacturing investors who are seeking to establish their own brands in China, Shandong Province and Qingdao City view it as a marketing/sales platform. The center is a large logistics hub to meet the increasing demand for the movement of international cargo in Qingdao Port. The center differentiates itself in Eastern China by providing additional services that are technologically advanced, innovative and value added. One of the biggest bright spots is that the Center, as a base of regional logistics hub, provides a broad mechanism for Electronic Commerce Industry. The interaction of modern logistics and electronic commerce will be ultimately reflected in the growth of local economics. (Hu, 2012) The purpose of this paper is to evaluate the Global Innovation Center's impact on modern logistics and how Qingdao Global Innovation Center facilitates the emerging industry---Electronic Commerce Platform--- to improve local economic development, and also to examine the impact of this type of clusters on local economy. No one has conducted a systematic evaluation of Global Innovation Center's impact so far, so it is important to assess the strengths and limitations of the complex, thus making recommendations for future similar clusters. I also want to explore an industrial development mode that combines logistics and electronic commerce to promote local specialized economies.

The purpose of the thesis is to assess advantage of Chinese Electronic-Commerce and Logistics platform by conducting a case study of Qingdao Global Innovation Center and to analyze how come Electronic-Commerce and Logistics platform promotes local economic development. Meanwhile, providing suggestions for future projects as reference.
The Importance of the Electronic-Commerce Platform and Logistics Clusters

After decades of development, many second-tier (medium sized cities) Chinese cities’ industrial clusters have transformed to capital/technological-intensive industries and high-tech research-based auxiliary sectors from original low value-added labor-intensive industries. The added value becomes increasingly high. They changed qualitatively from factory clusters that sell labor force to laboratory clusters that sell intelligence in a large scale. (Gao et al, 2010)

The Electronic Commerce Platform clusters thus serve as mechanisms that help small and medium-sized enterprises starting business and promote existing specialized local industry upgrading. For example, the Electronic-Commercial Platform cluster in Northeastern old industrial belt in Shenyang City, Liaoning Province, promoting the transition of highly polluted heavy industrial base by E-commerce; The E-commerce cluster in Changshu City, Jiangsu Province mainly served the local garment manufacturing industry; The E-Commerce cluster in Cixi City, Zhejiang Province targets itself in helping the local highly developed household appliance manufacturing industry. The local governments promote the industrial upgrading of existing specialized industrial base with the support of Electronic Commerce Platform cluster. (Yang and Yang, 2010) E-Commerce platform somehow is served as a public service mechanism, utilized by local government and enterprises.

Qingdao Global Innovation Center is a representative example of a similar type of industrial cluster in second-tier city. It not only becomes a mechanism for small and medium sized enterprises starting their business via Electronic Commerce platform, but also is utilized to be the regional logistics hub with its natural advantages of geographical location and regional finest infrastructure. Qingdao city is one of the terminal destinations of national high-way network and high-speed railroad network, also is the fourth largest Chinese coastal cities,
(2014) a major import/export port in northern China and a natural deep non-frozen harbor in Northeast Asia, and Qingdao Port’s throughput capacity ranks the seventh in the world in 2013. (The corporate profile of Qingdao Port, 2014) The new under-constructing international airport hub will be the gateway airport to Japan and South Korea. Therefore Qingdao has an excellent location advantage.

The nature of Electronic Commerce platform suggests that it is the best choice for small-medium size enterprises to start up their business. According to a recent news article, the Chinese E-commerce giant Alibaba provides an opportunity for the Korean small and medium-sized enterprises to start their business in China without physical presence (Liang, 2014). Therefore it is one of the most efficient trading mechanisms. The technology ensures the quality and efficiency of their business service. Under the framework of Electronic Commerce platform, with the support of technological supplier, distance is no longer a problem. American, Japanese or Korean firms can utilize Electronic Commerce Platform like Alibaba to trade in China regardless of the physical distance. (Liang, 2014) Therefore, the foreign small enterprises are able to reduce production costs by saving large amount of labor costs in logistics service. The unique commercial model reduces trade barriers, facilitates international trade and financial mobility. The transaction volume under Electronic Commerce platform is much larger than the traditional trade model, and therefore it is beneficial to both the growth of small and medium-sized enterprises and the
countries that highly evolved in the global trade. (Yuan, 2014)

As mentioned above, the Electronic-Commerce platform is also being promoted in South Korea. The Korean President Park Geun-hyu assesses the Daegu Innovation Economic Center “The E-commerce innovation cluster will establish new economic development model, and the growth of small and medium sized enterprise will lead to a healthier national economy” (Liang, 2014). Therefore, it is important to conduct research based on Qingdao Innovation Center, and make recommendations for the future development of similar type industrial clusters in not only China, but also East Asia. In the following paragraphs, I will mainly focus and prove why logistics and E-commerce are the two important sectors.

In summary, the importance of the project is to evaluate the unique function of Electronic-Commerce and Logistics platform under the background of present economic transit of China and the critical period of adjustment of industrial structure. The 11th and 12th Chinese overall national Five Years Plan has enhanced the strategic level of Electronic-Commerce and Logistics to a height of national strategy, therefore it is important to examine the driving effect of Electronic-Commerce and Logistics platform to Chinese second-tier cities’ economy. In addition to that, this thesis will be aimed at the problems of recent years’ Electronic-Commerce and Logistics industrial clusters, caused by wrong positioning and planning and single model of operation, to prevent waste of resources.
Background

Before we get into detailed discussion of why Electronic Commerce and Logistics are important sectors in Global Innovation Center, it is important to clarify the different levels of Chinese cities, because each level of Chinese cities has typical industrial structures. The Qingdao Global Innovation Center and other similar industrial clusters are parts of the national industrial chain. Therefore, the Chinese cities can be classified into three categories: first-tier cities, second-tier cities and third-tier cities. I will then (1) argue that Electronic-Commercial Platform and Logistics are the two most important sectors, and (2) evaluate the effect of the industrial cluster or agglomeration of the two sectors combined. And finally (3) explore the significance of the industrial clusters like Qingdao Global Innovation Center under the background of great Chinese economic situation.

Three Types of Chinese Cities

(1) Third-tier Cities

I will first introduce the third-tier cities. (Later I will be talking about first and second) The third-tier cities are mostly located in the western hinterland, and the main industries there are resource-based industries and primary industry. In a word, they provide raw resources and labor forces for the first and second-tier cities. At the meantime, they have large potential market of the consuming goods. (Li, 2014)

(2) First-tier Cities

The second type is the first-tier metropolis cities, such as Beijing, Shanghai, Guangzhou, Shenzhen and Hong Kong. They are large in terms of physical scale, population size, and economic aggregate. As mentioned above, the Chinese metropolis cities are densely populous, and they are the political, economic and cultural hubs of the most economically prosperous regions in China. (Li, 2014)
Tertiary industry and Service industry account for a large proportion of GDP. Many high-tech corporations in metropolis cities are capital and technology-intensive industries, and they occupy the top of industrial chains. The first-tier cities highly relied on the free market economic system of international trade. Take Hong Kong as an example, as an international commercial, trading and financial hub, Tertiary and service industry account for more than 90% of the whole GDP. Among all kinds of service industries, financial service industry, international trade, logistics, professional service industries and tourism are the four traditional pillar industries of Hong Kong’s service industry sector. (Cao, 2013) Since 1997 Chinese central government resumed the sovereignty over Hong Kong from the UK, the Hong Kong Special Administrative Region Government proposed the Planning Scheme of five emerging high value-added industries, including Innovation Industry, Medical Industry, Educational Industry, Innovative High-Tech Industry and Testing and Certification Industry. In the year of 2012, the increased value of the five industries accounted for 8.7% of the Hong Kong GDP. Along with the industrial upgrading and economic transition, the outdated industry was shifted away. Especially after 1997 Asian Financial Crisis, many Hong Kong traditional sectors moved to Chinese second-tier cities. (Zheng, 2013) Similar events happened in other Chinese metropolis cities as well.
### The Proportion of Three Main Industries Accounted for GDP, Major Cities

<table>
<thead>
<tr>
<th>Ranking</th>
<th>City</th>
<th>Primary Industry</th>
<th>Secondary Industry</th>
<th>Tertiary Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Beijing</td>
<td>0.84%</td>
<td>22.80%</td>
<td>76.36%</td>
</tr>
<tr>
<td>2</td>
<td>Guangzhou</td>
<td>1.70%</td>
<td>36.80%</td>
<td>61.50%</td>
</tr>
<tr>
<td>3</td>
<td>Shanghai</td>
<td>0.64%</td>
<td>39.36%</td>
<td>60.00%</td>
</tr>
<tr>
<td>4</td>
<td>Shenzhen</td>
<td>0.00%</td>
<td>44.30%</td>
<td>55.70%</td>
</tr>
<tr>
<td>5</td>
<td>Nanjing</td>
<td>2.65%</td>
<td>43.95%</td>
<td>53.40%</td>
</tr>
<tr>
<td>6</td>
<td>Wuhan</td>
<td>3.10%</td>
<td>45.90%</td>
<td>51.00%</td>
</tr>
<tr>
<td>7</td>
<td>Hangzhou</td>
<td>3.30%</td>
<td>46.50%</td>
<td>50.20%</td>
</tr>
</tbody>
</table>

Source: National Bureau of Statistics PR. CHINA
<table>
<thead>
<tr>
<th></th>
<th>City</th>
<th>Value 1</th>
<th>Value 2</th>
<th>Value 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Chengdu</td>
<td>4.30%</td>
<td>46.60%</td>
<td>49.10%</td>
</tr>
<tr>
<td>9</td>
<td>Qingdao</td>
<td>4.60%</td>
<td>47.60%</td>
<td>47.80%</td>
</tr>
<tr>
<td>10</td>
<td>Tianjin</td>
<td>1.33%</td>
<td>51.72%</td>
<td>46.95%</td>
</tr>
<tr>
<td>11</td>
<td>Shenyang</td>
<td>4.72%</td>
<td>51.79%</td>
<td>44.09%</td>
</tr>
<tr>
<td>12</td>
<td>Wuxi</td>
<td>1.79%</td>
<td>54.19%</td>
<td>44.02%</td>
</tr>
<tr>
<td>13</td>
<td>Dalian</td>
<td>6.43%</td>
<td>52.10%</td>
<td>41.47%</td>
</tr>
<tr>
<td>14</td>
<td>Ningbo</td>
<td>4.20%</td>
<td>55.50%</td>
<td>40.30%</td>
</tr>
<tr>
<td>15</td>
<td>Suzhou</td>
<td>1.80%</td>
<td>58.70%</td>
<td>39.50%</td>
</tr>
<tr>
<td>16</td>
<td>Changsha</td>
<td>4.48%</td>
<td>56.09%</td>
<td>39.43%</td>
</tr>
<tr>
<td>17</td>
<td>Zhengzhou</td>
<td>2.68%</td>
<td>59.10%</td>
<td>38.32%</td>
</tr>
<tr>
<td>18</td>
<td>Chongqing</td>
<td>8.20%</td>
<td>53.87%</td>
<td>37.93%</td>
</tr>
<tr>
<td>19</td>
<td>Foshan</td>
<td>1.80%</td>
<td>63.60%</td>
<td>34.60%</td>
</tr>
<tr>
<td>20</td>
<td>Tangshan</td>
<td>8.90%</td>
<td>60.10%</td>
<td>31.00%</td>
</tr>
</tbody>
</table>

(3) **Second-tier Cities**

To take over the industrial upgrading of the metropolis cities, many second-tier cities established High-Tech Clusters or High-tech Industries Development Zones to take this industrial transferring. A lot of second-tier cities, such as Suzhou and Dongguan, are geographically the “backyard” of first-tier cities, which is also the major formation of the High-tech Industrial Zones. (Hua, 2011) The convenient location, access to hinterland labor force and relatively low price of lands makes them the best site selections for industrial zones. During the initial stage of labor-intensive manufacturing industries, some second-tier city’s local residents accumulate their first wealth. Soon many small and medium sized second-tier cities’ GDP per capita even surpassed that of
Again, it is quite significant to conduct a researching study of industrial cluster in this critical period of the development of industrial clusters. Nowadays the industrial clusters are quite important portions of the second-tier cities’ economy, because their industrial structures are relatively simple. The enterprises that invested in the industrial clusters are the important financial sources of Chinese local government. The enterprises are basically where most tax revenue comes from. (Li, 2011) Therefore various similar types of local governments competed with each other in a way of the development of industrial clusters. Similar type of second-tier cities and similar type of industrial clusters are competing with each other in a sense of obtaining raw materials, financial support, gaining governmental supplemental policies, higher industrial structure and human resources. (Hu, 2012) Nowadays the enterprises in the industrial clusters are no longer only attractive to manual workers, they are now appealing more and more skilled workers and high-tech talents. The high-level immigrants bring more benefit than intelligent factors. The immigration lowers the risk of failure of foreign investment because of the information flows carried by immigrants increased (Foad and Hisham, 2012). There is more perfect information shared by the buyers and sellers in the market. More skilled immigrant communities attract more Foreign Direct Investment, because immigrants bring with their information about their native lands that other investors are able to utilize. The best example here is that the India’s IT sector has been mostly invested and driven by the Indians who studied or worked in the U.S. (Foad and Hisham, 2012)

**Why Electronic-Commerce Platform and Logistics are the Most Important Sectors**

**1) An Excellent Combination of Electronic-Commerce Platform and Logistics**
I choose Electronic-Commerce Platform and logistics as my focus of Qingdao Innovation Center’s sectors because they greatly enhance volume of business transaction and trade efficiency as the value added services.

As mentioned above, industrial upgrading is booming rapidly in many second-tier Chinese cities. Many medium and small sized enterprises pour into each city’s specialized industries, thus they need consulting, guiding and marketing services. Therefore the Electronic-Commerce platform combined with logistics could be a mechanism that provides additional services that facilitates the operation and management of the medium or small sized enterprises.

Furthermore, the combination of Electronic-Commerce platform and logistics work together to provide mechanism of placing order, supplying goods, and selling goods, which is especially essential for small and medium sized enterprises that are in lack of technology, capital and means of distribution. Beyond that, the E-Commerce Platform and logistics combination shares the network of customers and the network of distributions. (Aldin and Stahre, 2003) The logistics mechanism can share distribution resources and numerous of physical stores, thus greatly enlarge potential market and quantity of sales. A good example here is an advertising slogan of China’s largest Electronic-Commercial website---Alibaba, that is called “江/浙/沪包邮 (Jiang/Zhe/Hu free shipping)” refers to order online and free shipping to Zhejiang Province, Jiangsu Province and Shanghai City. The main reasons of free shipping to these three regions is that they share similar infrastructure network of distribution, logistics system and geographically close to each other, and culturally the three region’s residents share similar regional identity and similar dialect. Therefore the freight traffic volume and volume of transaction between the three regions is much greater than the other parts of the country, which is a good case that combination of Electronic-Commerce Platform and logistics facilitates large amount of internet transaction volume.

Every year of November 11th, it is the emerging electronic-commercial
shopping day in China. On November 11th last year, the trading volume of the two largest Chinese electronic-commercial websites Alibaba and Taobao broke 35 billion yuan, which is the sales record on a single day in the world. In addition to that, the 35 billion record is the several times than that of the record in the U.S.. The Chinese people call it “Double Eleven Day”. The Double Eleven Day has become a national shopping carnival for the entire people. It will soon become a trend that Electronic Commercial Platform replacing the status of entity business. (Wang and Wen, 2013) However, according to the president of Alibaba, Ma Yun, also the richest man in China, he does not want the trading volume becomes too much that surpasses 30 billion, because he is worried about whether growth of logistics can follow up the rapid growing speed of Electronic-Commercial Platform. If trading volume were too much, the channel of logistics would have been blocked. Therefore, the importance of logistics is obvious. Electronic-Commercial platform and logistics is a pair of complementary combinations, which is why I choose these two sectors. (CBRE-China, 2014)

The following chart is the basic relationships between consumers, small and medium-sized enterprises, logistics enterprises, and Electronic-Commercial Platforms. From the chart we can see that logistics and Electronic-Commercial platforms make up the most important parts of the entire supply chain, and they are the essential sectors connecting each pair of elements in the business circle that is the most efficient and profitable trading model in China nowadays. It suggests that the producers connect to logistics and to customers. Consumers place orders to the Electronic-Commercial Platform, and then E-Commercial Platforms place orders to the logistics enterprises. Producers sent products to the logistics enterprises, and the last stop is that the logistics firms deliver products to the consumers. The correct operation assures the best customer services with low cost, which shows how Logistics enterprises and Electronic-Commercial Platforms constitute the most efficient trading model. (Timmers, 2014)
(2) The Advantages of Industrial Cluster

From the chart we can see the combination of Electronic Commercial Platform and Logistics enterprise work together efficiently in terms of promoting business transaction. Furthermore, a cluster such as Qingdao Global Innovation Center that physically combines all the advantages of Electronic-Commerce Platform and Logistics will work even better to facilitate economic development.

The Qingdao Global Innovation Center combines logistics and Electronic-Commercial Platform, and diversified their services. More additional technically advanced, innovative and value added services will be provided in the market, such as market development guidance service, freight forwarding services and customs cleaning support, logistics management services and support, technology platform and maintenance, business support services and ongoing facilitates development and management services. Then it will yield greater consumer wellbeing and higher productivity and higher wage for workers. Information of knowledge also concentrate together to formulate larger effect, the communication and concentration of knowledge stimulate innovations develop faster. In addition to that, industrial clusters will promote business
transactions between private agents because the transaction costs are reduced between private firms. (Hubert and Khalid Nadvi, 1999) Physical distance is not a problem anymore, because the industrial clusters overcome geographical constraints. (Schummer, 2001) Technology facilitates network of industries and industrial cluster by standardizing commodities. The industrial clusters are especially beneficial to developing countries, as mentioned above because they help small enterprises to grow in early stage. The small and medium-sized enterprises then specialize themselves in early stages and able to mobilize and effectively use resources.

(3) The Functions of Industrial Cluster under Macroeconomic Situation of China

The Chinese economy has been rapidly growing for recent 35 years, and the average growth rate last several decades was around annually 10%. (National Bureau of Statistics PR. CHINA) Consumption, foreign investment and capital from public sector are the three conventional driving forces of Chinese passed decades’ economic growth. However, labor-intense manufacture sector is still playing in important role. This is a typical prelude to the bubble economy, which reflected in abnormal boom in the labor-intensive industries, real estate industries, photovoltaic industries, steel industry, and borrowed boom financial market. (Yang et al. 2005), Thus it needs to squeeze the bubbles of Chinese economy now. The rapidly growing Chinese economy needs to be slowed down a little to prevent from the economic bubbles. The outdated capacities that have seriously affected the economic growing potential and reserved strength, and they need to be eliminated for the Chinese economic “soft landing”. Therefore, the structure of Chinese economy is changing fundamentally recent a few years. The central government’s strategy is expanding employments, expanding domestic demand, and switching the large-scale exportation-oriented foreign trade to customization of exportation. (Sun et al, 2013) The famous Chinese
Economist Jinglian Wu said electronic-commerce has inherent advantage in terms of expanding domestic demand, creating jobs and enlarging consumption. Therefore the importance and value of industrial clusters are firmly established---they are the engines of emerging economic growth resources and driving forces of new productivity. Emerging high-tech and capital-intensive industries replace the old outdated manufacturing capacities. The achievement of industrial upgrading facilitates squeezing the economic bubbles, eliminating outdated capacities, expanding high end employments, expanding domestic demand, and adding new GDP growth resources.

To sum up, the industrial clusters and high-tech parks such as Qingdao Global Innovation Center represent the general trend of the Chinese economic development. High-value-added and high-tech industries will eventually replace the high-energy-consumption and labor-intensive industries. New productivity will be generated in the Electronic-Commerce platform and logistics industrial clusters around the country. Therefore above is the industrial clusters’ role under the macroeconomic context.
Literature Review

Challenges to Electronic Commerce and Logistics Platform

Nevertheless, there are still a lot of controversies around the Electronic-Commerce platform and logistics industrial clusters. For example, some criticize that there are negative externalities of industrial clusters including high land prices, leading to traffic congestion and air pollution. The existence of industrial clusters gradually becomes a threat to local environment in eyes of environmental activists. (Johansson and Quigley, 2004)

According to the article “The Three Challenge of Logistics Real Estate that E-Commerce Platform Needs to Face” (DTZ) The high land prices is the primary issue that Electronic-Commerce platform and logistics industrial clusters need to confront, and it is the most difficult issue. During the last three to four years, the industrial clusters have been emerging driving force of economic transition, and there are many large investments in this field in China. The overinvestment made the shortage of lands resources even more overstretched. In addition to that, the Chinese central government established regulations that the tenure of use of the industrial cluster was reduced to 20 or 30 years from 50 years, which deteriorates the land use problem of Electronic-Commerce platform and logistics industrial clusters. The second problem is that many small and medium-sized enterprises that invested in the logistics industrial clusters do not fit in the Electronic-Commerce platform. The only reason that local government allows them to invest is that they provide additional value-added services. However, this will go against the goal of promoting local specialized industries. And it becomes difficult to exploit the advantage of Electronic-Commerce platform. The third challenge is that the capitalization channel is not smooth, which is a major problem that Chinese Electronic-Commerce enterprises facing. Thus it is difficult for them to raise money for investment in logistics real estate. The reason is that Chinese central government worried about the large-scale investment in land
will lead to adverse effect on domestic real estate prices. The solution of capitalization channel issue is that government needs to launch further initiatives and policies to diversify the capitalization channel.

**Opportunities to Electronic Commerce and Logistics Platform**

The rising of combination of logistics and Electronic-Commerce Platform provides various opportunities for other industries, especially industrial lands and logistics warehousing. (Lin, 2014) The industrial lands and logistics warehousing are the popular investment spots, the emerging Electronic-Commerce Platform does not only change the traditional market pattern, also drive the development of the industrial lands and the market of logistics infrastructure.

The reason that logistics warehousing becomes a popular investment spot is that the average rate of return on warehouse investment in major Chinese cities is about 6.7% annually, much more higher than other types of lands. Although last three to five years, the land rents of a few seaports cities have sharply decline due to depression of international trade, the national average rents of storage lands have risen for 18 quarters during the last three years. Comparing with the oversupply fierce competing office building, retailing buildings and government regulated residential buildings, the industrial storage lands have higher rate of return and larger potential market, and becoming emerging hot investment spot of Electronic-Commerce enterprises. The Chinese logistics & storage infrastructures are originally constructed for the demand of exporting and manufacturing storage. However, with the increasing growth of domestic retailing consumption, and especially the increasing development of Electronic-Commerce Platform, the demand for logistics infrastructure and high standard storage grows rapidly. Driven by the active demand of Electronic-Commerce Platform, the logistics warehouse market keeps booming.

With the rapid growth of the industry, self-support and manage logistics
department becomes an irresistible option for the Chinese Electronic-Commerce Platform enterprises. The combination of Electronic-Commerce Platform and logistics industrial clusters gradually become the most efficient and profitable operation mode for Electronic-Commerce Platform enterprises. And they can be divided into two types. The first type is the large Electronic-Commerce Platform enterprises like Alibaba and Jingdong that already own their own logistics infrastructure base, and they will continue working on that. Nowadays the large Electronic-Commerce Platform enterprises have started sharing their infrastructures with many third parties—small and medium-sized enterprises. Therefore their developing path initiates from improving their own facilities, protecting users’ experiences to more strategic significance. They basically follow the path of Amazon in the USA: Taking the advantage of effects of scale to promote their reputation among customers, and building customer loyalty and providing additional value added service like big data to create sustainable development for new profit growth point. The second type is the small and medium-sized Electronic-Commerce Platform enterprises that are blocked by the increasing high barrier of self-owning logistics infrastructure base. At the same time, they become more relying on leasing large Electronic-Commerce Platform enterprises’ facilities. Nevertheless, they are not 100% depending on leasing from large Electronic-Commerce Platform enterprises: they entrust regional distribution processing, part of their main line & branch line business and terminal customer delivery service to third party professional logistics companies. (Lin, 2014) Thus the social demand of logistics infrastructures are driven by the large number of small and medium-sized Electronic-Commerce Platform enterprises. However, it is difficult for professional logistics developers enter the logistics infrastructure industry, because they are not only facing the competitors of large Electronic-Commercial enterprises’ innate advantage of self-owning logistics infrastructure that are already there, also they need to overcome the shortage of land resources, high cost of operating capital and the changing of central & local government’s land policies. Therefore, the two types
of rapid growing Electronic-Commerce Platforms enterprises are driving the demand of combination of Electronic-Commerce and logistics infrastructure.

**Associated Data**

The rapid growth of Electronic-Commerce industry has driven up the growth rate of logistics industry. And there is a very large potential to promote the growth of logistics industry. The average storage area per capita in China is 0.41 square meters (4.41 square feet), and it is only 1/2 of the same data in the US, and 70% of the warehouse facilities were built before 1990s. In 2013, the average express delivery number in China is 6.8 per capita per year, and the same data in Japan and Taiwan are respectively 40 and 10. The Electronic-Commerce Platform has been developing in Japan for more than 20 years, Taiwan for 13 years. However in China, the emerging industry is only less than 10 years, therefore the growth rate is rapid. The Electronic-Commerce industry market has been growing 107% annually recent three years, and the high growth rate and the boom stimulate the compound of distribution, storage and logistics facilities. All of the above elements are the driven force of formation of Electronic-Commerce and logistics clusters. Thus the industry will be rapidly growing during the quite long future time. (DTZ-China, 2014)

In the long run, the combination of the logistics industry and Electronic-Commerce Platform will be the general trend, and it will be accompanied by more complicated technology and information system. The key is the IT technology and operation system. More Electronic-Commerce and logistics industrial clusters that master land resources and core technology will be emerging.

**Associated Literature Review of How Electronic-Commerce Platform and Logistics Industrial Clusters Promote Local Economic Development**
According to the “Anhui Jiangbei Electronic-Commerce Industrial Cluster Planning Project Report” (Anhui Province Jiangbei Electronic-Commerce Industrial Cluster Administrative Committee, 2011), the completion of the project will eventually promote the surrounding regional economic development. During the project construction process, a large number of enterprises and capital were attracted into the Jiangbei Electronic-Commerce Industrial Cluster. The local tertiary industry, construction industry, first industry and service sectors are promoted by the enormous investment of the industrial cluster. In addition to that, the boom of service industries surrounding the industrial cluster will provide additional job opportunities for the local residents and especially attracting intellectuals, scientists and engineers to create their own business because of the emerging Electronic-Commerce Platform. As mentioned above, The Electronic-Commerce industrial cluster will also promote the local specialized industries and served as a platform to help upgrading the local specialized industries. For example, the Anhui Province Jiangbei Electronic-Commerce Industrial Cluster is located in the north shore of Yangtze River, and the surround region has a famous reputation for “land of vegetable”, “land of delicious ducks” and “land of hot spring”. There are many rich agricultural products and fine breed poultry. The Jiangbei Electronic-Commerce Industrial Cluster combines the advantage of local agricultural products to provide Internet trading platform for the local fine products to explore potential market, promote the circulation of the local agricultural products. Nowadays, local high-grade poultry and vegetables have exported to Europe, Japan and South Korea, making a great contribution to the increasing of farmers’ income. More important, the specialties of market gardening industry and domestic poultry industry got upgraded to more intensified and professionalized. Last but not least, the presence of large number of small and medium-sized enterprises facilitates the urban and suburban infrastructure construction. The tax revenue enriches the local government’s financial income so that they have enough funding to invest in infrastructure construction. The completion of Jiangbei
Electronic-Commerce Industrial Cluster becomes an agglomeration that aggregates the surrounding logistics markets. Its strategic purpose is not only serving Anhui Province, but also surrounding provinces with the convenient infrastructure and rich resources. Please find following the strategic map of Jiangbei Electronic-Commerce Industrial Cluster.

Translation:

The geographic location of Jiangbei Electronic-Commerce Industrial Cluster is within the overlap of three-hour metropolis circle of Shanghai and Hangzhou, and one-hour economic circle of Hefei and Nanjing. Therefore the strategic location is a necessary ingredient of a successful industrial cluster, which is also essential to Qingdao Global Innovation Center.

The second successful case is the Shandong Zibo Ceramic Creative Park (Gao and Wang, 2012). Low-carbon, energy saving, and environment friendly is the main feature of the new model of ceramic industry supported by Electronic-Commerce Platform, comparing with the traditional ceramic factories in Zibo. The rising of Zibo Ceramic Creative Park is taking the opportunity of industrial upgrading in Zibo. The traditional ceramic industry generates a lot of industrial wastes and they create tremendous pressure to urban environment
and threat to the sustainable development of the city and ceramic industry itself. Therefore the Zibo Ceramic Creative Park operators took the chance and started from solving the problem of the ceramic industry’s wastes to further develop the Electronic-Commerce Platform and Logistics cluster that facilitates ceramic industry.

The Electronic-Commerce Platform feature makes low-carbon and associated industrial chains rapid growing. And the advantage of Electronic-Commerce Platform, efficient distribution channel and high-tech marketing tool, ensure the sufficient supply of raw materials for ceramic making and environmental products to reach the highest level of sharing all available resources in a society. The logistics warehouses themselves were made of environmental friendly materials that have features of porcelain connectivity, high strength, high hardness and good thermal stability. Water absorption rate is less than 0.5%, sunlight absorption ratio is 0.93, and it will not decay with the time. The completion of Zibo Ceramic Creative Park promotes the development of local associated chain of industries. The project provides 800 new job positions for the local residents. The annual revenue is 1.481 billion yuan, which greatly facilitates the local economic development.

The third case is the Baowan Electronic-Commerce and Logistics Industrial Center in Shenzhen (Lu, 2009). The industrial center has greatly promoted local economic development. It has created 100,000 job positions for the society. The industrial center operates through advanced IT technology to integrate the resource commodities of the supplier. The operator also unite inventory, logistics service and after sale service to combine the Electronic-Commerce groups to facilitate distribution network. In addition to that, the operator constructed one-stop Electronic-Commerce industrial chain that helps supplier of commodities get through the international electronic-commerce marketing chain, and providing Electronic-Commerce outsourcing service, then improve and perfect the one-stop supply chain management service for small and medium-sized E-Commerce platform enterprises, and eventually facilitate their
fast growing. More important, the operation and management of Baowan Electronic-Commerce and Logistics Industrial Center are not only restricted to property leasing and information exchange. They also provide additional service like serving as public platform for marketing, IT service outsourcing and supply chain services, which breaks the bottleneck of traditional Electronic-Commerce and Logistics industrial centers. This is the most worth learning point for Qingdao Global Innovation Center as public service platform.

**How My Study Makes a Difference**

My study conducted a systematic research and feasibility report about the Qingdao Global Innovation Center of how it facilities the original specialized home appliance industry (Haier, Hisense, etc). First of all, I concluded how the Global Innovation Center affects the local economic development, which reflects in various economic indicators of the city. In addition to that, I analyzed how it works as a typical Electronic-Commerce Platform and what types of advantage it has; how it works as logistics services service platform, Internet service platform and business marketing platform. The most important part is the analysis of the social benefits, what the Electronic-Commerce and Logistics industrial cluster brings to the society; how it concretely promotes local economic development from four perspectives:

(1) Logistics industry aggregation effect

(2) E-Commerce industry aggregation effect

(3) Promoting industrial upgrading

(4) Stimulate domestic demand and increase job opportunities

Last but not least, my study confronted the three challenges I mentioned above, to find solutions for land resources shortage issue, help small and medium-sized enterprises to make full use of the E-Commerce platform as a
Therefore, systematic analysis and scientific recommendations were made for the future similar type of Electronic-Commercial Platform industrial clusters, which is the goal of my study.
Methodology

My methodology is divided into the following parts:

(1) A Brief Phase of Pre-visit, Research of Documentation and Preparation

In the first phase, I conducted preliminary research on the importance of the electronic-commerce platform and logistics clusters, geographical categories of Chinese cities (analyze the Chinese cities at different levels: first-tier, second-tier and third-tier). And I argued why electronic-commerce platform and logistics are the most important sectors by evaluating the competitive advantage of industrial clusters, as combinations of the two sectors. I further talked about the functions of industrial cluster under the macroeconomic situation of China nowadays. The documentation research was done through literature reviews of scholarly articles. Then I listed three successful cases of electronic-commerce platform promoting local economic growth. I also evaluated the Qingdao Global Innovation Center’s competitive advantage in terms of logistics industry aggregation effect, how it promotes industrial upgrading, and how it stimulates domestic demand and increases job opportunities. Beyond that, my study will confront the challenges mentioned above, and formulated a feasibility report that contains systematic analysis and scientific recommendations for the future similar projects. This phase was devoted to documentation and materials gathering and analysis of the methodology. The multiple stakeholders who involve in Qingdao Global Innovation Center, including managers of electronic-commerce and logistics enterprises, local academics, and the representatives of regional labors, their interaction and respective agendas were analyzed. During this phase, a logistical plan for an intense on site fieldwork visit was prepared.

I also had Skype conversations with people in Qingdao, the senior manager of local logistics enterprises, gained the first-hand experiences and opinion from the perspective of electronic-commerce platform and logistics cargo interests.
(2) The On-Site Visit: Interview and Surveys with Various Stakeholders

I. Progress Goals

I traveled to Qingdao China during winter break in order to carry out an intense plan, conducted interview, formulated survey and established a comprehensive dialogue with all the interviewees about all dimensions related to the Qingdao Global Innovation Center. The goals I have accomplished during the on-site visit to Qingdao Global Innovation Center include:

(1) Assessed and tuned the level of pertinence of my preliminary analysis

(2) Developed greater understanding of electronic-commerce platform to small and medium-sized logistics enterprises and regional socio-economic conditions

(3) Developed greater understanding of recent associated tendencies in the electronic-commerce and logistics industry, and how it promotes Qingdao specialized industry.

(4) Performed social, cultural, economic and strategic analysis relevant to the Qingdao Global Innovation Center.

(5) Evaluated the Qingdao Global Innovation Center under a greater prospective of Qingdao City Master Planning Scheme and other previous associated planning work that has been done.

(6) Made specific proposals for the intention to promote local job opportunities, and equitable development.

(7) Developed greater understanding of Logistics industry aggregation effect, electronic-commerce industry aggregation effect and promoting industrial upgrading.
II. Interview with Deputy Director of Global Innovation Management Committee, Representative of Management Level

During the second phase that is site visit, I have made multiple meetings with the various levels of local government officials, the first interviewee I reached out was the Deputy Director of Global Innovation Management Committee. The questions I asked him were associated with the general operating situation of the center. How the electronic-commerce and logistics platform promotes the local industrial upgrading, and how it makes Global Innovation Center enterprises more competitive.

III. Direct Experiences of the Services that Global Innovation Provides and Interview with Front-line Staffs, Representative of Basic Level

In addition to that, I made several visits to the sites and tried to experience the services offered on the front line, conducted interviews with the account receivable coordinator, equipment control coordinator and tariff/service contract analyst of the operation center of Qingdao Global Innovation Center, asking them questions about the multi-functional and value-added service the Global Innovation Center provides such as how the system runs. And they gave me explicit explanation that I elaborate in the following paragraphs.

IV. Direct Experiences of the Surrounding Infrastructure and Interview with Intermodal Truck Drivers, Representative of Associated Industry Employees

I also took some pictures of the current existed infrastructure, including adjacent high way system. And I took a truck tour from Qingdao Global Innovation Center to the Qingdao Qianwan container terminal. I gained the intermodal coordinators’ perspective and first-hand experienced the existed infrastructure. I also interviewed the representatives of front line workers, asking them questions about their roles in the transportation management system and logistics circle. And how have the logistics efficiency and delivery service been improved
All of these focused interviews and visits strategies allow me to gain a better understanding of the physical and social condition of logistics.

V. Interviews and Survey with Enterprises that Already Settled in the Global Innovation Center, Representatives of Electronic-Commerce Enterprises Side

After interviewing with the logistics side, I went to collect information from the electronic-commerce side. The phase has separate goals and methodologies with the aim of helping to understand the different conditions, challenges, and opportunities that Qingdao Global Innovation Center faces. Therefore I mainly conducted interviews with the representatives of electronic-commerce enterprises that settled in Qingdao Global Innovation Center, to understand concrete details of the operating system of electronic-commerce platform and how it works.

Then I conducted questionnaire surveys with the enterprises operation participants to have them expressed their acceptability and tendentiousness towards the Qingdao Global Innovation Center and to what degree the combination of electronic-commerce platform and logistics facilitate local economic growth. The survey questions are as followed:

(1) For small and medium size e-commerce enterprises, what is their degree replying on the platform and infrastructure of large e-commerce enterprises? (1-5, the larger number means deeper dependence)

(2) For small and medium size enterprises, how much degree of reducing the management costs and warehouse cost in the Global Innovation center? (1-5, the larger number means more saving)

(3) How much degree does the supply chain of e-commerce shorten the distance of trade and lowering down the transportation cost? (1-5, the larger number means the larger degree)
VI. Interview with Appliance Industry, Representatives of Local Specialized Industry

Moreover, I conducted conversations with the representatives of appliance industry enterprises, as local specialized industry that already settled in about their operating conditions, because I was specifically interested in the management and operation of appliance enterprises, as local specialized industry, under the platform of electronic-commerce. Through conversations I learned how electronic-commerce and logistics work together to promote appliance industry. The questions I asked contain technology spill between enterprises over and whether the supply chain system of electronic-commerce platform can be fully utilized.

VII. Opinion from Professionals about How Electronic-Commerce and Logistics Cluster Promotes Improves Economics Development, Representative of Local Intellectual

I also have met with local academics and have in person interviews with Dr. Hongbin Wang. The content of conversation will be about the benefits of electronic-commerce platform and logistics industrial cluster to the traditional local special retailers. I learned encouraging development stories of local merchandiser who benefited form the Qingdao Global Innovation Center.

Interactions with local intellectual allow me to offer my views, which combine the appropriate components for the people of the communities. I saw how an industrial cluster such as Qingdao Global Innovation Center with electronic-commerce and logistics function’s influences on residents daily lives surrounding the center. While some of the thoughts might not be applicable to my goals, they still provide insights into what makes this electronic-commerce and logistics center successful. That is why I choose to communicate with local
intellectual beside industry insiders.

**IX. Survey Instrument**

Digital voice recorder, notebook and pen were survey instruments for interviews. Camera and video recorder were the instruments to collect image data. Laptop was used for sorting data.

(3) Post-visit

I assessed my field experiences, revisited the result gathered in Phase 1 and 2, and made some recommendations.

**Case studies**

During this phase, I also researched on some cases studies of enterprises and specialized industries, appliance industry, examining case studies of enterprises of specialized industry already settled in Qingdao Global Innovation Center deepened the understanding of dynamics of industrial upgrading and surrounding regional economic development. Assessed the cases helped me to find good ideas and principles for a variety of different industrial fields. I especially focused on Haier and Hisense as representative enterprises of the local appliance industry. The data I collected including their sale volumes on electronic-commerce holiday like Singles’ Day. Beyond that, I found some macroeconomic data including the total GDP, GDP per capita and annual GDP growth of the region. The increasing data of the enterprises and the region are used to quantify economic growth. I then found more specific economic indicators that are more informative and convictive, including the tax revenue of local regional government and available regional macroeconomic data such as employment rate, GDP per capita and growth of GDP. All the secondary data and cases are evaluated in the following paragraphs.
Results and Analysis of On-Site Investigation

Findings from Survey and Interview

During the winter break, I conducted on-site investigations to explore the research goals I set. Generally speaking, through systematic analysis of the secondary data and the results of surveys and interviews, and evaluating citywide benefits such as jobs, economic indicators and firms’ development (which I summarized in the following paragraphs), I find that there is a strong correlation between the level of local economic development and the boom of electronic-commerce and logistics industry. Furthermore, more secondary data shows that the interactions of modern logistics ad electronic-commerce platform facilitate the industrial upgrading of regional specialized industries and it in turn serves and reinforces the growth of local economics. Therefore, the entire field investigation answers my hypothesis regarding the research question, and inspires me in many respects such as to evaluate the Qingdao Global Innovation Center under a greater Qingdao City Planning Scheme.

The investigation process helps me to develop a deeper understanding of electronic-commerce platform for small and medium sized logistics enterprises and how it affects local socio-economic conditions and public sentiment. I also got a chance to learn the most recent tendencies in the electronic-commerce and logistics industry, and how the tendencies promote the specialized industry in Qingdao region.

Next, I will summarize and analyze the findings from on-site investigations.

I. Interview with Management Committee of Global Innovation Center, Representative of Management Level

The first interviewee is the Deputy Director of Global Innovation Center
Management Committee who is responsible for overseeing the enterprises in the center, is the best person to interview about the industrial cluster on a macroscopic angle. I regard him as the representative of management level. Before I officially started interviewing and surveying, I set up a series of anticipated focuses for different types of representatives. Therefore, what I intended to learn from the representatives of upper management level is macroeconomic and socio respects, in other words, how the electronic-commerce and logistics platform promotes the local industrial upgrading, and how it in return facilitates local economic development.

- **What makes the enterprises in Global Innovation Center competitive by taking the advantage of electronic-commerce and logistics platform?**

  I was intending to ask him how the electronic-commerce enterprises utilize the infrastructure around the global innovation center for better future growth, and stimulate the development of logistics. The question I raised to him is how does he think the interaction of electronic-commerce and logistics platform facilitates the operation of the enterprises? I want to hear concrete professional opinions from industry insiders. Then he described how the Global Innovation Center runs, and how it facilitates the operation of small and medium-sized enterprises in the Innovation Center.

  His answer starts with the operation structure of the Global Innovation Center. He said that the entire economic-commerce and logistics platform in Qingdao Global Innovation Center can be divided into four comprehensive mechanisms.
The small and medium-sized electronic-commerce enterprises in Global Innovation Center differentiate themselves from traditional retailing enterprises by utilizing the four comprehensive mechanisms. The first mechanism is the Electronic-Commerce Platform, manufacturing enterprises, cybershop enterprises, and freight-forwarding companies are able to utilize the mechanism to operate and conduct business activities. The second mechanism Logistics Management Mechanism represents the other important sector that constitutes the electronic-commerce and logistics platform, and it provides a cyber-public platform that facilitates electronic logistics services for third-part logistics enterprises, the logistics departments of manufacturing enterprises and storage enterprises. The third mechanism is the Global Innovation Center Management Committee system. The mechanism is especially important for the enterprises in the center because professional management firms utilize the mechanism to provide additional service to the enterprises in the Global Innovation Center. The fourth mechanism is the external connection to other electronic-commerce platform such as the trade platform of Shandong Steel Making Enterprises Association, the Shandong Online Trading System of Hardware and National Storage Inventory System.
He mentioned that the Qingdao Global Innovation Center has been successfully making contribution to the local economic development by providing an advanced technical service as a public information platform to the firms that already settled in the center. The goals they are trying to reach are as follows. First, the platform provides opportunities for the enterprises to improve corporate images of themselves and their cooperative enterprises. Second, the electronic-commerce platform makes it convenient for them to unite all other types of enterprises in the region. Third, the electronic-commerce and logistics platform extends small and medium-sized enterprises’ horizon that they are able to exchange information and have more chances to corporate with all other types of enterprises. Fourth, information and resources are more likely to be shared by more enterprises. Fifth, it is a win-win situation that both corporation enterprises' performance will be largely enhanced. Therefore, the goals of the Qingdao Global Innovation Center are to promote the performance of local enterprises all types of enterprises, and ultimately facilitate the regional economic growth.

II. Direct Experiences of the Services that Global Innovation Center and Interview with the Front-line Staff, Representative of Basic Level

- **Interview with the service and infrastructure sectors, explicitly introduce how electronic-commerce logistics works**

By communicating with various front-line staff, I learned how Global Innovation Center differentiates itself from the traditional industrial cluster of small/medium sized and logistics enterprises. The questions I prepared for the representatives of basic management level of the staffs include: What services they provide for the small/medium sized electronic-commerce and logistics enterprises that already settled in the Global Innovation Center? How do the supporting infrastructures differentiate themselves from the traditional logistics
model?

The equipment coordinator first gave me detailed information of Global Innovation Center's logistics management platform. The Logistics Management Platform is a public mechanism that provides “Internet of Things (IOT),” a modern remote tracking service. The platform does not only provide a software system to support customers' business activities, they also offer equipment such as chassis lease service, and even logistics one package service to help the enterprises establish their own informational logistics system. The additional functions of Global Innovation Center's logistics sector, which is another asset sets them apart from traditional logistics industrial park, is that they also provide material circulation tracing, inventory programming, storage strategies customization, equipment lease, and inventory software customization.

The Logistics Management Platform is a cyber-information processing hub that provides one package logistics service. All the electronic orders are input through the logistics management platform, and it will generate secondary data as outcomes to report to the enterprises. The following graph displays the way of how it works.

Inventory input
Freight forward management
Distribution management
Storage management

The freight forward management information (direct management information for freight forward enterprises), distribution management information (distribution information for logistics sector), storage management information (the overall storage inventory information for logistics enterprises), and inventory input information. And the inventory input information
represents the outside electronic orders, and the method of inventory input provides data interface service for the enterprises inside and outside the Global Innovation Center. The incoming information will be imported into the logistics management platform and processed by the information hub. The outcomes of the information-processing hub are efficient to help customer enterprises generate sufficient service.

The outcome services that logistics management platform generates include: cargo tracing service, data statistics, and storage plan. The customer enterprises that are located outside Global Innovation Center can utilize cargo tracing service system to track real-time cargos and check inventories. The data statistics offers numerical statements, market information and detailed industrial statistical data for customer enterprises. The storage plan provides professional storage design service and warehouse planning.

The cargo receiver coordinator explained how to promote regional overall level of IT application by introducing cargo-tracing system. The cargo tracing system links the entire supply chain together and makes all the upstream and downstream enterprises benefit from the technology revolution. The enterprises on the supply chain can be divided into three levels. Please see the following graphic:
My thinking is that the growth of local enterprises and technical upgrading of the enterprises in the Global Innovation Center reflect regional economic development. By taking the advantage of the advanced system of Global Innovation Center, small and medium sized enterprises become more competitive in the market and it eventually improved the core competence of all types of local industries. Thus when the conditions are ripe, the success of local economic development is assured.

The cargo tracing system benefits manufacturing enterprises from three perspectives. First of all, to manufacturing enterprises, the system makes customers trust the manufacturing enterprises that produce products, because logistics platform, producing process and shipping status are all full opening. Therefore the customers can count on the enterprises. And it makes the connection of cargos more efficient by using Radio Frequency Identification system as part of cargo tracing system, to match the identification information with previous link, and make sure the cargos enter warehouse safely. It will eventually swimmingly connect with the Third-part Logistics enterprises. As the source of supply chain in Global Innovation Center, the cargo tracing system supports manufacturing enterprises by precision management, integrating enterprises’ supply-chain management and their storage logistics service. Secondly, to processing enterprises, the cargo tracing system enhances the accuracy of storage management by creating categories of inventory and facilitates the connecting efficiency of different segments. Thus to ensure that the processing enterprises can truly become the hub bridge of up (manufacturing enterprises) and down (freight enterprises) stream enterprises. The bridge effect generated by cargo tracing system will enhance the efficiency of storage category system and reduce uncertainty of production plan and purchasing plan. Last but not least, to freight enterprises, the cargo tracing system will increase the internal management efficiency of enterprises, because the order tracing, cargo status response and efficient information communication are enforced by
the updated technology. In addition to that, this cargo tracing system provides qualified service for business partners.

Then she further explained what constitutes the cargo tracing system. As per her describing, the most efficient cargo tracing method is phone tracing. The customer service center in the enterprises in the Global Innovation Center can provide the service to timely check the inventory status and the location of cargos. The second method coordinate tracking is said to be the most accurate tracing system. With the help of the coordinate tracking system, the locations of cargos can be tracked 24 hours all weather. The customers are able to trace the exact location of products anywhere anytime. The third tracking method invoice tracing system helps customer enterprises to track the status of cargos by checking their invoices receipt. The invoice tracing system sends invoice data and order information to all the stakeholders every hour to renew the most updated information. In addition to that, the system allows the enterprises in the Global Innovation Center to share the order information with each other. The fourth tracking method is the physical object tracing. The products all have Radio Frequency Identification, and as receivable coordinators they can scan the strip code to input the information of their products. Therefore, all the arrival or returned information will be correctly reflected in enterprises’ inventory database.

In addition to that, she mentioned that the Global Innovation Center provides information data platform that all the enterprises can share their inventory data by utilizing the mechanism.

Then I interviewed the IT department staff, asking him what functions of their storage management system have? The staff answered me that the cyber logistics management platform provides informational storage system service. It can easily record the serial number of storehouse, owner of cargo, and assorting cargos into different categories. The cyber logistics platform also offers visual assistance for cargo owners to be able to monitor their cargos 24 hours. It also
ELECTRONIC COMMERCE PLATFORM, LOGISTICS AND LOCAL ECONOMIC DEVELOPMENT

has automatic temperature adjustment system for temperature sensitive cargos. The modern informational storage system offers efficient logistics service that decreases storage costs and shortens the development circle, which has greatly facilitate the operation of Global Innovation Center.

Beyond the physical highway, railway and supporting infrastructure network surrounding the Global Innovation Center, there is also advanced cyber transportation management system as part of the logistics management platform. I interviewed the related personnel raised questions towards their cyber transportation management system. The manager of the transportation management system first introduces to me how the system works. He first summarized that the cyber transportation management is the computer intelligence planning and optimization of transportation route. The optimization of the transportation route will further shorten the time that is consumed during the transportation. Therefore the theory of how transportation management system works is that dividing the placement of order into different parts and send them to different departments of enterprises, then utilize the automatically generated operation plan to track cargos on the way. Beyond that, the customer service department of enterprises utilizes the mechanism to monitor invoice management. The use of Global Position System, Geographic Information System, Radio Frequency Identification, Warehouse Management System, Enterprises Resource Planning, and Data Processing System greatly enhance the efficiency of transportation and storage of cargos, and ensure the timeliness and accuracy of the input data. Please see the following graphic showing how the system works:

![Diagram of transportation management system](image)
As per the graphic describes, customers first place the order, then the enterprises in the Global Innovation Center take orders. After that the orders will be sent to processing hub to be sent to different departments of the enterprises. After products are produced, they are distributed to intermodal section, then to be confirmed uploading. The next step is to scan order to input their information to database. The following step is to dispatch trucks by utilizing the infrastructure. Customers can check the status of their cargo and tracking them anytime. After the products arrive their destination, they are unloaded. Then customers will receive the products they ordered and send invoice back to electronic-commerce enterprises.

I then interviewed the intermodal truck driver trying to summarize the major specialized functions of the infrastructure parts of the transportation management system. He told me that every single units (like him) of the logistics circle are able to get access to the basic status of the cargos, containers, trains, and trucks, so they are very clear about what they are carrying. In addition to that, the electronic-commerce enterprises fully utilize the supporting infrastructure around Qingdao Global Innovation Center. Highways, airfreight, container lines and railway transportation can all be utilized.

The intermodal truck driver also mentioned that the population density in the region, electronic-commerce’s mandate for the same-day delivery, the warehouse properties in the region, and the supporting ports, airports and highway systems has largely driven the regional economy growth. And currently the small and medium sized electronic-commerce enterprises are attempting to find the best strategy for its logistics and distribution functions. Therefore, the driver said there is a trend in the Global Innovation Center’s logistics sector which is that the small and medium sized electronic-commerce enterprises utilize the large warehouse properties in Global Innovation Center that are close to Qingdao City (population center), using the supporting highway systems, railway network, and airports that offer opportunities for more agile delivery systems for electronic-commerce fulfillment activities.
The use of Qingdao Global Innovation Center’s transportation management system realizes the goal of reducing transportation cost, distribution cost, and shortens the research and design circle, which makes electronic-commercial platform more efficient and convenient for the enterprises.

III. Interview and Survey with Enterprises that Already Settled in the Global Innovation Center

After interview with the representative with management level and front-line workers from the basic level, I started conducting interviewing with the representatives of small and medium-sized electronic-commerce enterprises and local specialized household electrical appliance manufacturing enterprises that already settled in the Global Innovation Center, because the growth of these enterprises confirm how electronic-commerce and logistics platform promotes industrial upgrading and the advantage of Global Innovation Center.

I first interviewed the manager of one of the small and medium-sized enterprises has settled in the Global Innovation Center, she introduced the basic information and the operation system of electronic-commerce platform here.

The electronic-commerce platform provides enterprises self-promoting function, taking order function, and customer service function. The two sectors that constitute the human resources department are their customer service office and IT remote terminal office.

The electronic-commerce platform in Qingdao Global Innovation Center differentiates itself from other traditional trading mechanisms for providing four unique services:
The Global Innovation Center establishes connection with domestic and international, manufacturing producers, third party logistics firms, public sectors like railroad department, canal, intermodal, and supply and marketing partners to help enterprises in the center to facilitate the distribution of their products. And the customer service office provides additional human resources support for the enterprises to facilitate their trading activities. And the E-commerce platform provides all other services I mentioned above for the enterprises that settled in the Global Innovation Center. Last but not least, completed logistics management service that front-line service staff introduced to me above.

She further introduced the flow path of how the electronic-commerce platform works. The online clients will first register an account on the electronic-commerce platform, and search for their target cargo or service, then put them into their chart and place order. After the order is confirmed, the order information will be passed to the manufacturing enterprises.

Nevertheless the electronic-commerce platform of Global Innovation Center is very much like an ordinary B2B website, the management platform of sellers and buyers account is extremely particularized and concrete. Besides the
ordinary functions such as commodity management and order management, the electronic-commerce platform provides analysis function that includes sales volume analysis, customer behavior analysis, and promotion analysis. The analysis function greatly helps enterprises take the potential opportunities, closely monitor market situation and avoid unnecessary risks.

In addition to that, the survey questions I have for them are:

For small and medium size electronic-commerce enterprises, what is their degree of relying on the platform and infrastructure of the Global Innovation Center? (1-5, the larger number means deeper dependence)

For small and medium size enterprises, how much degree of reducing the management costs and warehouse cost in the Global Innovation Center? (1-5, the larger number means more saving)

How much degree does the supply chain of electronic-commerce shorten the distance of trade and lower down the transportation cost? (1-5, the larger number means the larger degree)

The manager of the small and medium-sized enterprises gave me answers and helped me to analyze the problem from multiple angles. The answers he gave me back are 5,5,5. He told me that the Qingdao Global Innovation Center greatly facilitates the small and medium-sized electronic-commerce and logistics enterprises. The electronic-commerce platform has lowers down their transaction and storage costs; therefore the productive efficiency has been improved. Therefore, it greatly improves the growth of small and medium-sized enterprises, especially for their initial business growth stage.

**IV. Interview with Appliance Industry, Representative of Local Specialized Industry**

The direct embodiment of production efficiency is the industrial upgrading.
The household appliance manufacturing industry is Qingdao’s local regional characteristic industry. The household manufacturing industry in Qingdao has been improved tremendously by taking the advantage of electronic-commerce platform. Therefore, the questions I prepared for the representatives of Haier and Hisense, the world-known Qingdao local household appliance manufacturing enterprises are will the advantage of electronic-commerce platform be fully utilized here? How does your electronic-commerce based supply chain system function efficiently? Is there any technology innovation (productivity improvement) spill over within the household appliance manufacturing enterprises settled in the Global Innovation Center?

His answers are the local household appliance manufacturing enterprises benefit a lot from the electronic-commerce and logistics platform. The Haier refrigerator department has been growing extremely fast after settling in the Global Innovation Center. According to the data from Syntun, China, on the Singles’ Day in 2014, the total transaction volume exceeded 80.5 billion Yuan via the electronic-commerce platform. The growth rate has increased more than 50% compared with the previous year. By taking the advantage of Global Innovation Center’s advanced supporting infrastructure and electronic-commerce platform, the supply chain system has achieved producing, supplying, selling, and managing information system’s integration, to enhance the internal coordination ability. Leading enterprises like Haier and Hisense also offered online retailing system, which reduces its own inventory, and shortened the market reaction time. In addition to that, the enterprises utilize the electronic-commerce platform to purchase, marketing, and logistics and promote customer service to enhance the competitive power of supply chain. The total online sales volume of Haier is 524 million Yuan, and more than 300 million were sold on TMall.com, and ranked as the No. 1 among all household appliance brands. The sales volume reached 100 million within six hours, and 200 million within eight hours. For Hisense, the total online sales volume on Single’s Day is 473 million Yuan. On that day, more than 100,000 Hisense televisions, 43021 air-conditionings and
36963 refrigerators were sold online. (Chu, 2014) Another astonishing figure is that the total all year online sale volume of Haier is 54.8 billion Yuan in 2014, which grows 2391% than last year. The enormous growth almost can be comparable with Alibaba. (Sun, 2015)

Beyond that, the Global Innovation Center also plays a role of electronic-commerce industrial base of innovation. Because the traditional low level of consumption has ended, the customers’ demand now becomes more technology oriented. However, the supply capacity of traditional industry had largely surpassed the current demand, therefore industrial upgrading is now imperative. The electronic-commerce industrial base fosters community level electronic-commerce enterprises and mobile electronic-commerce enterprises, and promotes conducting online business bused on the electronic-commerce supply chain to facilitate the Global Innovation Center’s electronic-commerce development system. According to the data from Laoshan District Bureau of Commerce and Qingdao Economic and Trade Commission. Up until the end of 2013, the Qingdao electronic-commerce platform annual transaction volume is 100 billion Yuan. (Cong, 2014) Therefore, the Qingdao local specialized industries’ enterprises benefit from the electronic-commerce platform and the Global Innovation Center promotes the industrial upgrading of the traditional industries. And it will be analyzed further in the coming sections.

V. Interview the Representatives of Local Residents and Scholar

The electronic-commerce and logistics platform has not only benefited the technology-oriented or capital-oriented enterprises, but also offered a new mechanism of doing business for small retailers and traditional local specialty industries. Traditional product dealer and retailers strengthen and expand their own brands/organic products by taking the advantage of this new business model.

The Qingdao National Oceanic University Economics Professor. Hongbin
Wang told me a successful story of local fisherman Laosi Zhu. Laosi Zhu lives in Zhujiajia Village that was used to be a natural village near by the Global Innovation Center. Since 1980s, he had been operating fishery manufacturing business, and selling local marine products. Before joining the Global Innovation Center, he had been operating by using the traditional business model. His business was fine while the scope of business activities and markets are limited. Ever since he joined the Global Innovation Center, with the advantage of Qingdao Global Innovation Center’s surrounding supporting infrastructure, inventory management system and supply chain management, his transaction costs and storage costs are reduced. At the meantime, by utilizing the online marketplace system and the Alibaba, he is now selling his marine products overseas to South Korea and Japan. Thus, we can see that not only technology-oriented manufacturing industries benefit from the electronic-commerce and logistics platform, and the local ordinary residents’ traditional food manufacturing industries are also the beneficiaries.
I. How Small and Medium-sized Enterprises Benefit from the Electronic-Commerce and Logistics Platform?

This section will be special analysis regarding how small and medium-size enterprises benefit from the electronic-commerce and logistics platform.

In the first place, the electronic-commerce and logistics platform provides additional value-added operation services that greatly benefit small and medium-sized enterprises. The operation services include merchandise control that includes arrangement and category of cargo information, processing and design of merchandise image. In addition to that, Global Innovation Center’s customer service department coordinate sales service to help the small and medium-size enterprises that is very much similar to the function of Amazon customer service to the sellers on the website. The additional value-added operation services are essential for the small and medium-sized enterprises who just start up their business. Therefore Global Innovation Center is a great place where fosters the development of small business.

The Small and Medium-Sized Enterprises Become Competitive by Taking the Advantage of Electronic-Commerce and Logistics Platform

The electronic-commerce enterprises utilize the infrastructure around the global innovation center for better future growth, and stimulate the development of logistics. The interaction of electronic-commerce and logistics platform to a great extent facilitates local economic development. From a macroscopic angle, the electronic-commerce and logistics mechanism nowadays constitutes the most efficient consuming combination for shoppers. Take Global Innovation Center as an example, electronic-commercial platform connects all the elements of supply chain in business circle. Internet shoppers place order to
electronic-commercial platform, and by taking the advantage of convenient infrastructure and efficient logistics service (logistics firms receive orders almost directly from customers), then logistics firms deliver products to customers. The entire electronic-commerce operation process shortens the physical distance between customers and sellers, and lowers down transaction cost as well. It expresses the efficiency of logistics enterprises and electronic-Commercial Platforms constitute the most efficient trading model.

Briefly speaking, one of the major advantages of electronic-commerce platform is stimulating the logistics industry. The interaction of the two industries reduces the production cost, transaction cost and physical distance. It eventually becomes a great help for small and medium sized local enterprises because it lowers down the admittance threshold for small and medium-sized enterprises to enter the industry. Qingdao local government also has incentive policy for the small and medium-sized enterprises to have tax exemption and subsidies. Government also leads to establish an initial fund for local small and medium-sized electronic-commerce enterprise. The policy with strong regional characteristics is designed for the Qingdao regional small and medium-sized electronic-commerce enterprises, because unlike other small and medium-sized enterprises in Zhejiang or Jiangsu Provinces, the enterprises in Qingdao region (Shandong Province) are not good at capital operation, the loan for small and medium-sized firms provide essential initial fund for them, and many firms benefit from the action.

The Supporting Infrastructure Facilitate the Operation of E-Commerce Small and Medium-Sized Enterprises

The electronic-commerce enterprises utilize the infrastructure and logistics function of the center to promote long-term development. The advantaged geographical location of Global Innovation Center has ensured that the highway transportation, railroad transportation, container port facilities, and airports are
coordinated developing. And modern logistics management information system makes it easy custom formality and information unobstructed. The supporting infrastructure helps Global Innovation Center to be part of the international logistic circle. The highway system surrounding Qingdao Global Innovation center is intensive. There are totally six highways surrounding the Qingdao Global Innovation Center, and all of them are facing the hinterland. Highway transportation provides point-to-point direct transportation service, and it especially efficient for rugged mountain region, remote villages and undeveloped area. Therefore, Qingdao Global Innovation Center's surrounding highway infrastructure plays an important role as primary transportation method and transport artery that can reach every single corner of its radiation hinterland. Same as highway system, the railway network surrounding Qingdao Global Innovation Center is facing towards north, west, and east direction to the hinterland. The railway transportation is the most efficient way for bulk cargo operations. The Qing-Ji (Qingdao-Jinan, an inland city, the capital of Shandong province) railway has been historically important for the economic and social development in Shandong Province. The railway networks offer sufficient opportunities for the small and medium-sized enterprises to explore potential hinterland markets and enhance the efficiency of delivery service. International Airfreight is the fastest and most technology advanced transportation method. Airport is the basic infrastructure of economy oriented to the global economy. The Qingdao Liu-Ting International Airport is currently operating at an overload due to the boom of electronic-commerce, therefore a new airfreight and passenger transport airport, Qingdao Jiao-dong Airport is under construction. The Qingdao Jiao-dong Airport is designed to be a regional air traffic hub. According to information the National Civil Aviation Authority released, the annual throughput is designed as 70 million people. Therefore, by utilizing the airport facilities, the foreign electronic-commerce enterprises (especially South Korean enterprises) are able to invest in Qingdao Global Innovation Center, and Qingdao small and medium-sized electronic-commerce enterprises in turn are
able to conduct business in foreign countries.

In addition to that, the warehousing logistics helps to support Global Innovation Center’s core activities including electronic-commerce enterprises retailers. The Global Innovation Center electronic-commerce enterprises need warehouses of 500,000 to more than 1 million square feet (according to the logistics staff). The supporting logistics facilities meet the demand of warehouses, and drive the growth of small and medium-sized electronic-commerce enterprises. The Buildings designed for electronic-commerce fulfillment are multiplying in Global Innovation Center's warehousing areas. This trend shows that a wave of new construction has occurred because the existing inventory of buildings is not suited for electronic-commerce activities. Compared to traditional warehouses, electronic-commerce facilities tend to be larger, with more height clearance and heavier flooring infrastructure to support higher stacking of goods and hanging conveyors. The Global Innovation Center's electronic-commerce facilities generate more jobs. Electronic-commerce facilities generate one job per 1,000 square feet of space, while the traditional warehouse generates one job per 3,500 square feet of space. Many small and medium-sized enterprises are expanding their electronic-commerce sales rapidly; many of the enterprises have combined two or more fulfillment functions into one large building. Therefore, just one building can be utilized for storage and delivery purpose and also electronic-commerce purpose.

**Benefits/Costs for Small and Medium Sized Business**

I have analyzed how Qingdao Global Innovation Center’s e-commerce platform and logistics infrastructure benefits small and medium sized enterprises (briefly mentioned policy support for small and medium sized enterprises). This section will be focused on the comprehensive benefits, opportunities and costs that Qingdao Global Innovation Center brings to small and medium sized enterprises.

Qingdao Global Innovation Center has made up for the inherent deficiency of
small and medium sized enterprises. Take the example I used in the above paragraphs. Before the E-Commerce era, the Zhuijiawa villager Laosi Zhu only had a very limited market, could only sold his fishery products to regional surrounding markets. However, Qingdao Global Innovation Center helped him expand markets so that he can export his marine products to oversea markets such as South Korea and Japan. Likewise, Qingdao Global Innovation Center can efficiently help small and medium sized enterprises to overcome the inherent disadvantages of access to information, limitation of market and customers. Diversified customers and exploration of markets means more business opportunities, therefore it will greatly provide broader development space for small and medium sized enterprises.

Moreover, as I have mentioned above, Qingdao Global Innovation Center helps small and medium sized enterprises by lowering down inventory, purchasing costs, and marketing costs of manufacturing enterprises. The system can reach the goals by directly delivering products from manufacturing enterprises to customers, reducing the production process, and establishing their own marketing website. Therefore the Qingdao Global Innovation Center offers friendly business environment and brings tremendous benefits to small and medium sized enterprises, consequently enhance marketing competitiveness.

In addition to that, Qingdao Global Innovation Center has taken constructive approach in three areas that has changed the situation of small and medium sized enterprises. (1) Based on the above description of how the E-Commerce platform, the system has changed business environment for small and medium sized enterprises. (2) The systematization and automation of the organization changes the management model of small and medium sized enterprises. (3) Technological advanced means of management and operation enhance economic benefits of small and medium sized enterprises.

Nevertheless, certain types of costs of Qingdao Global Innovation Center still
exist. For example, safety and risk costs are the two major costs that small and medium sized enterprises need to consider. The Internet based E-commerce system cannot avoid the invisible costs such as internet safety and technical risk for small and medium sized enterprises in Qingdao Global Innovation Center. The risks include the invasion of computer virus, hacker attacks, and uncertainty of upgraded and modernized of software and hardware. Therefore small and medium sized enterprises are very vulnerable to the issues, so there is greater risk and pressure to them. In addition to that, there are other development costs to small and medium sized enterprises, such as registration and internet costs, and technical staff training costs. More important, the small and medium sized enterprises are in lack of consciousness of intellectual property protection.

In summary, Qingdao Global Innovation Center starts a development model revolution that brings tremendous benefits for the small and medium sized enterprises. Meanwhile, there are many visible or invisible costs to the small and medium sized enterprises. Therefore it is important for the enterprises to establish risk control mechanism so that the long-term interests of the small and medium sized enterprises could be protected.

II. How Does Electronic-Commerce Promote Industrial Upgrading?

In this section, I will specifically examine how the electronic-commerce platform benefits the local specialized industries (mainly household appliance) to promote industrial upgrading in Global Innovation Center, from labor-intensive manufacture to research-based and technology-oriented industry.

Household manufacturing is Qingdao’s specialized industry that is competitive worldwide. Among them Haier and Hisense are the most well known ones in Global Innovation Center, and they are the first a few leading enterprises
utilize electronic-commerce and logistics platform to realize production, supply, marketing, management and information systematic integration. The use of new model has enhanced the enterprises’ internal operating efficiency and ability to interrelated industries. The open electronic-commerce platform reduces their inventory levels and shortens their reaction time, furthermore, Global Innovation Center’s other enterprises on the industrial chain benefit from the boom of one enterprise. Thus upgrade the competitiveness of entire industrial chain. As stated above, up until the end of 2013, the total trading volume of Qingdao electronic-commerce platforms has passed 100 billion Yuan, and the average annual growth rate is more than 40%. (Cong, 2014)

Nevertheless, the industrial upgrading for the Qingdao local specialized industries is inexorable, because the Chinese conventional market-oriented consumption model has been in the process of changing. Personalized and diversified consumption is gradually becoming the main stream. At the meantime, the supply capacity of Chinese conventional manufacturing industries is greatly exceeds the demand of market. Therefore the industrial upgrading of the original specialized industries is becoming a new normal and a approaching task for the leading enterprises. Take Haier as an example, Haier has been working on establishing an electronic-commerce training center and innovation & research center in Global Innovation Center, to foster electronic-commerce online communities and mobile electronic-commerce shopping platform. The ultimate goal is to develop expertise on consumption of household appliance on electronic-commerce platform, and promote the formation of the information-based industrial chain (bring other enterprises on the industrial chain to be electronic-commercialized). From the data of financial statements of the two Haier Group’s listed companies: Qingdao Haier (600690, SH) and Haier Appliance (01169, HK) are both performing well as their core business refrigerator, washing machines and air-conditioning are blossoming.

Qingdao Iron and Steel Holdings is another great case here. Qingdao Steel is the first steel making manufacturing firm in eastern China that established
low-carbon steel making technology center in Global Innovation center. The technology center is research hub for low-carbon, energy saving and emission reduction technology research. The goal of the technology center is to promote industrial upgrading, and it is also a service center for electronic-commerce trade of steel and independent development. The research results of the technology center are expected to apply on building ecological and healthy steel manufacturing environment.

The Qingdao Iron and Steel Technology Center is one of the Qingdao local specialized enterprises’ attempts to promote industrial upgrading. More similar types of technology hubs are established in Global Innovation Center that shows local enterprises’ determinations to occupy the high-ends of global industrial chains in their own fields.

**My Analysis Regarding the Infrastructure of Qingdao Global Innovation Center---The Key of Local Economic Development and the Material Basis of Industrial Upgrading**

With the highway, railway and airport infrastructure facilities, Global Innovation Center becomes the logistics transportation hub, solving the problem of lacking of a transportation hub. The electronic-commerce and logistics platform aggregates with the supporting infrastructure, and concentrate all the facilities at one hub, making the entire city as an important node among the international logistics network. Qingdao thus becomes a node city, and the city status is improved. The highly concentrated electronic-commerce and logistics cluster as a growth industry; in a growth city Qingdao with completed supporting infrastructures, has fostered a large number of small and medium-sized enterprises with electronic-commerce characteristics. Different divisions of workload constitute electronic-commerce enterprises’ industrial chains. The division of workload generates great demands of various industries. For example, Qingdao’s the electronic appliance manufacturing industry is competitive industry. The Global Innovation Center provides
electronic-commerce and logistics platform for these Qingdao conventional specialized enterprises so that they can work with their industrial up-stream enterprises such as fittings-manufacturing enterprises, therefore reducing distribution and transportation costs. All of the enterprises’ sales volume and enterprises performance have been largely improved ever since settling into the Global Innovation Center, as elaborated in the section of interview with representatives of enterprises.

Hence, electronic-commerce industry stimulates the overall development of domestic demands from various industries, which is what Global Innovation Center generates for Qingdao regional economic development.

By establishing the electronic-commerce enterprises cluster, the prosperity of related industries brings industrial upgrading, the developed system of infrastructure and transportation are part of mechanisms that promotes electronic-commerce platform, and it greatly promotes the local economic and regional industrial upgrading. The growth of one industry will facilitate the upgrading of other industries.

Likewise, the electronic-commerce platform could benefit many garment manufacture enterprises, because they can utilize the international trade relations’ access to other manufacturers. Global Innovation Center’s relations with various transnational banks would strengthen and ease the search of small and medium-sized enterprises’ target markets. One of the service contract analysts answered me that with the completed supporting infrastructure and good human resources, the Global Innovation Center provides holistic services that are technically advanced, innovative and value added. I found that the Global Innovation Center provides services in designing, integrating and implementing effective network and enterprises solutions, and in researching new technologies and developing propriety mythologies. Also, they have specialist offers strategic project management and engineering expertise. The technique department provides and delivers reliable, secure, customized and affordable complex
Internet solutions to the enterprises that have settled in the Global Innovation Center.

III. Future Envision of Global Innovation Center

At the end of my interview with the Deputy Director of Management Committee, the Director discussed the future envision of Global Innovation Center with me. He analyzed that the future mode of logistics will be reflected on centralized storage, all the cargos from different enterprises will be concentrated together but clearly categorized. With the help of Radio Frequency Identification, Warehouse Management System, the information of cargos is accurately input into the information database. Thus the storage space is maximally utilized, but not chaotic. Because each merchandise is labeled their own IDs since their orders are placed. Furthermore, the distribution efficiency will be greatly enhanced, and the number of mistakes will be largely reduced. Likewise, the Global Innovation Center is assessing using automatic equipment to replace manual for merchandise distribution and assorting. The result of the technical revolution will not only be the reduction of human resources, but also quality enhancement: it will reduce damage to merchandise during the process of distribution. In addition to that, the ambition of Global Innovation Center is to extend the range of their operating network to cover the entire Shandong Province, a market that has 100 million populations.

Therefore as per what the Director elaborate, the ultimate goal of Global Innovation Center is to be the leader of electronic-commerce and logistics platform clusters, the industrial standard maker, and eventually integrate social resources.

IV. Overall Local Economic Development and Social Benefits Analysis

The benefits of Global Innovation Center bring us can be divided into two kinds: economic benefits and social benefits. The Global Innovation Center has
outstanding economic performance that reflected by increasing the tax revenue of government, offering more job opportunities, reducing transaction and labor cost and enhances regional logistics capacity. However, what is more important is that Global Innovation Center can promote local economic development as I elaborated that fosters the growth of small and medium-sized enterprises and promotes industrial upgrading. The two perspectives are especially important in terms of bringing more social benefits that promotes local economic development. The following paragraphs will be evaluation of associated data and the analysis regarding how Global Innovation Center contributes to economic growth through promoting the two respects.

(1) Electronic-Commerce and Logistics Enterprises Agglomeration Effect

There Global Innovation Center is a land of development for electronic-commerce and logistics enterprises. The inherent advantage of Global Innovation Center has attracted numbers of Electronic-Commerce enterprises and logistics enterprise to concentrate here, and trend has formulated agglomeration effects.

The first agglomeration effect is that numbers of outstanding logistics enterprises flood into the center. The trend has leveled up the original local logistics industry’s efficiency of storage management system and informational degree of distribution system. In addition to that, the technology progress and fierce industry competition have lowered down the transaction cost and transportation cost of regional logistics industry. The logistics enterprises are becoming more and more competitive with the development of electronic-commerce industry. Therefore the regional logistics industry gets integrated and optimized.

The second agglomeration effect is that a lot of electronic-commerce enterprises concentrating in the Global Innovation Center as well. The operation of electronic-commerce enterprises highly relies on the support of logistics
sector as I have elaborated above. With the more efficient logistics support and advanced IT infrastructure, more electronic-commerce enterprises are concentrating in Global Innovation Center, forming an electronic-commerce concentration relying on the boom of logistics hub.

The agglomeration of electronic-commerce and logistics platform has stimulated the growth of other interrelated industries on the industrial chain to meet the demand generated by the electronic-commerce and logistics industry. More significantly, tertiary service industry is blossoming due to the thriving of Global Innovation Center. There is forming an electronic-commerce ecological lifecycle that is becoming an essential part of regional economics. Therefore it has formed a great driving force for economic growth.

(2) Industrial Upgrading’s Importance Toward Economic Development

As I have elaborated above, one of the major contributions of Global Innovation Center is promoting industrial upgrading. Likewise, industrial upgrading is one of the special driving forces that facilitate Qingdao local economic development given the current Chinese economic situation. Before I start analyzing how important industrial upgrading is, I would like to explain a little bit about the national and regional macroeconomic background.

As I mentioned above in the background section, electronic-commerce platform has inherent advantage on expanding domestic demand, creating jobs and enlarging consumption during recent years’ Chinese economic transformation. The Qingdao Global Innovation Center has been facilitating the local manufacturing, transportation, and consumption fields, etc. And it plays an important role on expanding jobs and creates local consumption demands. The growth of Global Innovation Center is changing the driving force of local economic growth. As I elaborated above that trading volume of electronic-commerce platform in Qingdao in 2013 has passed 100 billion Yuan. According to Qingdao City Economic and Trade Commission and Laoshan
Commercial Bureau's joint investigation report. The current data is experiencing an explosive growth; the trading volume of electronic-commerce platform in 2014 is 394.7 billion Yuan, and Qingdao Global Innovation Center contributes around 100 billion Yuan, almost one third of the total. Which has been growing approximately 400% than previous year. And the leading enterprises are growing even faster; Hisense has the highest growth rate that is 244%. The trading volume of total retail sales of consumer goods in Qingdao in 2014 is 300 billion Yuan. Therefore the electronic-commerce platform’s total trading volume has surpassed that of traditional trading platform. The growth rate of trading volume of retail sales of consumer goods platform is 12.6%. Thus the growth rate of electronic-commerce trading volume is 31.7 (400/12.6) times of growth rate of traditional trading platform. The explosive growth of Global Innovation Center on behalf of electronic-commerce trading platforms has greatly stimulate Laoshan District’s economic situation: The total GDP of Laoshan District in 2014 is 47.9 billion Yuan, increased 8.1% by last year. However, the same data before the E-commerce era was only around 8%. The Laoshan District GDP per capita has reached 20,000 US dollars. The huge economic boom realizes high-speed growth of government tax revenue. In 2014, the Laoshan District public and regional tax revenue is 21.9 billion Yuan, increasing by 15.4% than previous year.

(3) Expand Domestic Demand and Increase Job Opportunities

The profit of electronic-commerce and logistics platform is largely more than conventional logistics industries, and as I elaborate above that it generates great amount of public revenue to government. Since the trend of electronic-commerce and logistics combination brings such huge profits to public and private sectors, it will greatly expand domestic demand, and changed the regional development model. With the agglomerations of the industries, more small and medium-sized enterprises will benefit from the effect and
continue growing by increasing trading volume and facilitate industrial upgrading. Therefore the booming of large numbers of small and medium-sized enterprises generates more employment opportunities, and the growth of jobs opportunities is a hidden gift for the local economics. Because local residents benefit from blossoming of interrelated industries that creates more jobs. According to data, there are 16132 additional jobs were created in 2014, and the unemployment rate is cut down to 1.5%, the total unemployed number is 579. (Lanshan District Information Disclosure Annual Report) Please see the following table that explains the above data.

![Expansion of Domestic Demand and Increase Job Opportunities](image)

(4) How Local Economics Development Effect

The Qingdao Global Innovation Center has greatly enhanced the local economic development. Besides the above data and evidence, the economic development can be reflected by more direct data comparison. I want to display Qingdao Global Innovation Center's economic effect from two perspectives: (1) By comparing the secondary data before E-commerce era, to show the economic importance of Qingdao Global Innovation Center. (2) Using the industries in Global Innovation Center’s contribution to the general local economics as control group, and analyzing the change of other industries’ contribution to local economic development to show the great driving effect of Global Innovation Center. My thinking is to prove the economic development effect of Qingdao Global Innovation Center by using relevant data.
First of all, compare the secondary data before E-commerce era. Before the E-commerce era (Before 2013, I mainly use the data from year of 2011 and 2012), the 2012 total GDP of Laoshan District is only 38.4 billion Yuan, and the 2011 total GDP is 36.47 billion Yuan. However, the same data of 2013 is about 43.9 billion Yuan, and the total GDP of year 2011 is 47.9 billion Yuan. The GDP per capita in year of 2011 is only 12,470 US dollars, and increased to 13,220 US dollars in 2012. However, the GDP per capita of Laoshan District increased rapidly up to 17,100 US dollar at the end of 2013 after one-year’s operation of Global Innovation Center. And the same data grew rapidly to 20,900 US dollar in 2014. Even though we have to consider the factor of exchange rate between US dollar and Chinese Yuan. We can still see that there is a huge rise of major economic indicators such as total GDP and GDP per capita. In addition to that, as I have mentioned, the growth rate of government income after E-Commerce era is about 7% higher than the same data before. Therefore, from the perspective of major economic data, we can see the efficient driving effect of Qingdao Global Innovation Center to local economic development, though we need to eliminate the factor of decreasing exchange rate of US dollar.

Secondly, also according to Laoshan District Information Disclosure Annual Report, from year of 2012 to 2014, high-tech enterprises, especially those supported by E-Commerce platform have increasingly contributed more to the overall economic growth of the city. In 2012 one year before Global Innovation Center was open, the growth rate of total E-commerce enterprises was only 3.9% which is slightly higher than the same data of 2011. However after the year of 2013, the growth rate of small and medium sized enterprises is 12.8% that is much higher than the previous years’ data. Therefore we can see the great driving effect of Qingdao Global Innovation Center, and the total trading volume of Qingdao Global Innovation Center is 100 billion Yuan, about 25% of the total E-Commerce trading volume of entire city in that year. And Qingdao Global Innovation Center’s total value of oup-put is 64.8% of the whole E-Commerce industry in Qingdao city.
Therefore, from the above data, it is very obvious that other enterprises in the E-Commerce industry are growing while Qingdao Global Innovation Center functions as accelerator to speed up the development rate of local economic development.

V. Contrast

Nevertheless, Qingdao Global Innovation Center is still facing some challenges besides the three common challenges (externality, high land prices, and financing) that many electronic commerce and logistics industrial clusters face I mentioned above in literature review session. The four specific challenges Qingdao Global Innovation Center faces are the overlong investment cycle, the increasing demand of management talents, and the regional institutional support.

First of all, the overlong investment cycle of Global Innovation Center has brought huge financial pressure to the small and medium sized enterprises. It took long time and had cost a lot to invest on constructing the logistics facilities. Therefore, many start-up small and medium sized enterprises had faced financial crisis because it is difficult to recover cost on infrastructure in a short term. Nevertheless, long-term profit is still expectable. At the present stage, the electronic commerce business activities’ pace of development is much faster than that of logistics facilities investment, therefore recovering of infrastructure cost is only a matter of time. In summary, the overlong investment cycle gives a hard time for the small and medium sized enterprises to recover the initial costs, but the long-term profit is still expectable as soon as they overcome the difficulties.

Secondly, the small and medium sized enterprises in Global Innovation Center are in lack of management talents. The inherent advantages of electronic commerce platform enterprises are Internet marketing and technical support. However, logistics management is a completely different field for them.
Therefore it is a great challenge for the enterprises to establish and manage the new logistics system. The management staffs of electronic commerce enterprises are expected to be familiar with how the Global Innovation Center's management system works and its logistics infrastructure. The logistics supporting service should be wherever the electronic commerce enterprises' cargos are. Therefore nurturing efficient specialized logistics persons is a great task for the small and medium sized electronic commerce enterprises in Global Innovation Center.

Thirdly, there should be more institutional support, and the local government and people should have a deeper understanding of electronic commerce and logistics platform. Although the Qingdao Global Innovation Center’s business is booming, we have to admit that it is a still young sunrise industry. There is still in lack of institutionalization and standardization of associated regulations and laws. Therefore, local authorities and public should know the great economic significance of Global Innovation Center, and abolish the transportation and tax regulations that have hindered the development of electronic commerce platform as early as possible. In addition to that, government should enact nationwide legal norm to institutionalize and standardize electronic-commerce and logistics enterprises for the healthy development of the industry.

Fourthly, even though the structure of enterprises in Global Innovation Center is stable (mainly manufacture, logistics or cybershop enterprises), but there are not prominent features for most enterprises in the Global Innovation Center. Therefore the services of Global Innovation Center cannot penetrate to the deeper level of all industrial supply chain, operation mode is single. Besides earning rents, logistics storage fees and additional value-added service fees, the profit model is single.

VI. Application

The thesis can be implied for following policy-based planning situations or institutional change. First, when assessing regional Electronic-Commerce and
Logistics industrial revitalization projects, this thesis can be used to evaluate the projects from three perspectives: whether local enterprises’ performance get improved due to the operation of the projects; whether industrial upgrading happened or eliminating backward productivity capacity; whether local civilians benefit from the projects. Second, Assess whether invited investment is able to eliminate backward production capacity and promote industrial upgrading. Third, it can be used as reference when assessing whether granting tax abatement or exemption for Electronic-Commerce and Logistics projects. Fourth, Assess the function of proposed Electronic-Commerce projects uses, and citywide benefits in industrial cluster/city redevelopment analysis. Fifth, when examining or designing how Electronic-Commerce and Logistics platform projects are done, and what issues need to be taken into account.

VII. Conclusion

Overall speaking, 800 enterprises have settled in Qingdao Global Innovation Center, the formation of electronic-commerce platform and logistics industrial agglomeration has facilitated industrial upgrading. It has become a major driving force for the local economic development. The growth of interrelated industrial chain completed the electronic-commerce ecological life circle, more small and medium-sized enterprises benefit from the transformation. Last but not least, Global Innovation Center becomes a training center for high-end electronic-commerce talents who initiate their own business. Meanwhile, by studying case studies of local specialized industries, I find that exploring professional development of Electronic-Commerce and Logistics platform has been a prevailing trend of the development of Chinese Electronic-Commerce and Logistics platform. And by studying the cases of Haier and Hisense, I found that conventional manufacturing industries will be future major support of Electronic-Commerce and Logistics clusters. In summary, Qingdao Global
Innovation Center has generated great social benefit to the entire society.
Epilogue

The Qingdao Global Innovation Center will have directivity effect to the same type of electronic-commerce and logistics platform industrial clusters. The great development potential has attracted large amount of investment and small and medium-sized enterprises to start business there.

To reinforce the strategic importance of the city, I believe that the future of Qingdao Global Innovation Center needs to be associated with the national overall scheme. The best development model is Chicago. Chicago is where the largest multimodal transportation facility CenterPoint is located, and it connects BNSF Logistics Park and Joliet Regional Multimodal Transportation Center of Union Pacific. Therefore the success of Chicago as logistics hub is not only due to Chicago’s inherent advantage, but also has to be associated with surrounding infrastructure, and more importantly, the overall national transportation system.

Likewise, Qingdao, as regional economic center, transportation logistics hub, and national manufacturing center, will be an important part of China’s future “Large scale social production, large scale market, large scale circulation” national economic development scheme.
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