*Transdisciplinary Engineering: A Paradigm Shift*
*C. Chen et al. (Eds.)*

*doi:10.3233/978-1-61499-779-5-136*

# Adaption of Logistical Distribution Networks with Complexity and Efficiency Considerations for Cross-Border E-Commerce in China

Mei LIU[1] and Wei YAN
*China Institute of FTZ Supply Chain, Shanghai Maritime University, China*

**Abstract.** While China's economy is in deep reform and industrial transition, cross-border e-commerce industry in China has shown an annual growth rate of 30% in recent years, soaring to the top of global Cross-Border E-Commerce (CBEC) markets. However an efficient and flexible distribution network is required to fully reap the rewards of this growth, which has posed great challenges for CBEC retailers and carriers struggling to ease consumer shipment impatience. The aim of the study presented in this paper is to provide explicit explanationsof the emergence, development, opportunities, challenges and future of cross-border e-commerce in China both from the perspectives of China's legitimate authorities and e-commerce companies. The actions taken by China's authorities when facing the explosive emergence of cross-border e-commerce trade volume are the one of the key factors leading the development path of e-commerce in China. E-commerce companies are also devoted to the development of e-commerce trade seeking better ways to maintain competitive in the industry. An example of the logistical distribution network of one of China's e-commerce giants has been studied in this research. It is concluded that the logistical network is adaptive to the development trend of e-commerce in China. In future work, the performances of China's logistical distribution networks are to be evaluated from perspectives of network topology and functionality (trade-off between efficiency and cost) specified with CBEC consideration. A mathematical model is to be formulated as a Mixed-Integer Linear Programming (MILP) problem. Topological complexity of the mathematical model is studied based on the complex network theory. Trade-offs between delivery time (termed as "efficiency") and transportation costs of the model is also evaluated for it is the key factor of significance both for CBEC customers and retailers.

**Keywords.** Cross-Border E-Commerce, development, logistic distribution network

## Introduction

With the shadow of 2008 global financial crisis being fading away, the global economy is still in slow structural adjustment and recovery, thriving to keep steady accelerating economic growth as prevailed in the old golden days. It seems that the recovery path is not easy to pass through. Those feelings might be experienced to varied contents by the developing economies such as China, Brazil and India and also by the advanced

[1] Corresponding Author, Mail: meiliu@shmtu.edu.cn

economies such as European countries, Japan and the U.S. China, after being presented as a sparkling rising star in the world economy with high-speed GDP growth for over two decades (about annual rate of 9.8%) [1], is now experiencing the lowest level of economic growth rate. China is currently swirled in the tangled interweave of three transitional cycles of global economy, energy and industrial evolutions catalyzed by technology innovation and ideological change from industrial civilization to ecologic civilization. "A new normality" of China's economy as put by Chinese Premier Keqiang Li in a speech in Davos in February 2015 states that the country had "entered the stage of the new normal, shifting from high speed to medium-to-high speed" [2]. Mr. Li implies that Chinese government and industry leaders are not quite worried about the lowered speed of economic growth but still inject strong confidence of promoting a more healthy and sustainable development of China's economy. It is assured by the Chinese government that the country authorities intend to gradually move forward the far-reaching structural reforms of economic growth from the old ways of three-decades of accelerated growth featured with investment-fueled and unsustainable debt to new strategies to encourage service sector growth, consumer spending and private entrepreneurship without a "hard landing [3]". A slew of strategies(such as "One-Belt-One-Road", "Internet Plus", "Made in China 2025"), policies, regulations and implementations [2,4,5] have been put forward, indicating the government's strong and solid determination to help China's economy to succeed through the transition period with pain though, but to embrace a bright future of sustainable development. Strategies include controlling the unbalanced supply-demand industries such as steel and glass production whilst promoting emerging industries such as advanced production, modern service, new energy and e-commerce [6,7].

The confidence and determination projected by the Chinese government can also be found in the majority of Chinese consumers. McKinsey, a famous global consulting firm concluded in their 2016 report "The modernization of Chinese Consumer" that Chinese consumers have maintained resilient confidence over the past few years as salaries have continued to rise and unemployment has stayed low [8]. McKinsey's findings are concluded from 10,000 in-person interviews with people aged 18 to 65, in 44 cities representing China's major regions and tiers. Findings in this report show that Chinese consumers are confident about their increasing salaries in the future and they are and will be continually willing to spend. It should be noted that Chinese consumers are becoming more discriminating on shopping with the enhancement of consumption knowledge and production choices [9]. They are more concerned about the authenticity, safety and quality of products. Also they are showing greater demand for shopping services and experiences. Chinese consumers are enriching their ways of traditional shopping at "brick and mortar stores" by embracing emerging ways of online shopping of "swipes and clicks" thanks to the Internet, e-commerce and mobile devices. In 2012 Chinese internet users have reached 560 million with a population of internet consumers of 230 million against 150 million of online consumers in the U.S at the same year [10]. Figure 1 presents two groups of populations of Internet consumers and Internet users in China and their relationship from 2012 to 2015. It can be seen from Figure 1 that the percentage of total internet users who shop online keeps growing in recent years. There is still enough space for the population of Chinese online consumers to grow since a large number of internet users remain active in Chinese rural areas and the number reaches 178 million until June 2014 [11].

China's middle class in terms of a wealth holding band of USD 10,000-100,000 has reached 109million according to [12] and takes up to 16% of the global wealth

middle class population and 10.7% of China's population. It is expected for the middle class in China to reach 520million and their share to reach 40.3% of global middle class segment by 2020. The net worth of China's middle class in 2015 amounted to 32% of country wealth [12]. The middle class is the major force in the consumption trends. In [10] it is stressed that the share of consumption of the lower middle class and upper middle class of China's total consumption will both present a 5% growth rate per year. The growth rate for upper middle class consumers is 17% per year. In 2020, China's middle class would make their share of consumption up to 70% of China's total consumption.

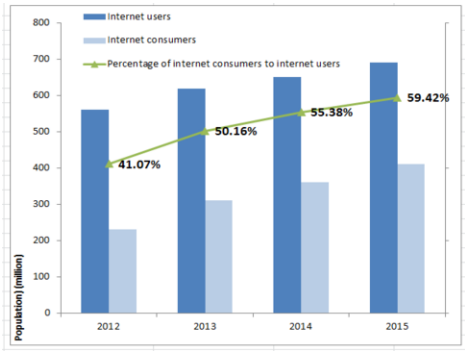


**Figure 1.** Populations of Internet consumers and users in China

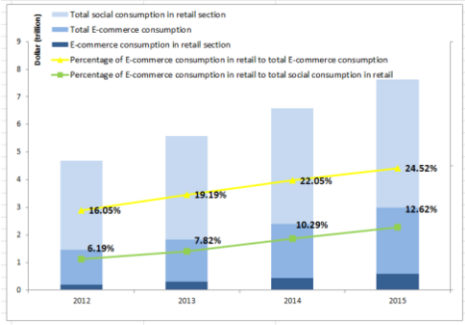


**Figure 2.** Transaction of e-commerce consumption in retail, in total and total social consumption in China from 2012 to 2015

The total on-line shopping GMV (gross merchandise volume) in China reaches $1.2 trillion in 2012 an increase of 66.1% from 2011[13]. Total volume of e-commerce transaction makes up 6.2% of total Chinese consumption in 2012 as compared to the percentage of 5.2% in the U.S.[13,14]. Figure 2 shows the relationship between e-commerce in the retail section, total e-commerce transaction and total social consumption from 2012 to 2015.

As depicted in Figure 2, the share of e-commerce in China's total retail has risen above 10% in 2014 and 2015- a remarkably higher percentage than in the U.S. and this will grow to 13.6% in 2016 [15]. In [15] it is highlighted that China has become the largest e-commerce market in the world. The Chinese online retail market is almost 40% larger than the U.S., and together these markets account for more than 55% of worldwide e-commerce.

## 1. Incubation and Development of Cross-border E-commerce in China

A series of fake and counterfeit baby formula, food and toy scandals exposed in 2008 [16] stirred up anger, dissatisfaction and disappointment among Chinese consumers, especially Chinese parents over China's domestic business brands and companies. Loss of loyalty and faith to certain domestic products, Chinese consumers started to build faith on products made in foreign companies or labeled with foreign brands. They have discovered they can go online to buy goods from foreign countries either directly from foreign websites or indirectly from companies run by Chinese merchants in foreign countries with less cost of money and time. Most imported goods are waived of import taxes since they are treated as personal-use goods by China's customs authorities [17]. The emergence of official cross-border e-commerce channels provides

Chinese consumers with authentic foreign products of more brands including more product categories at cheaper prices and to receive products in shorter periods of shipping time. These cross-border purchases by China's online shoppers grew over three-fold between 2013 and 2015, from $12billion to more than $40billion. Figure 3 shows the change of scale of China's cross-border e-commerce consumption and their share in China's e-commerce GMV (source data are combined from [18,19]). Both groups of GMV are collected in retail from the channels of B2C and C2C commercial models). Growth rates of cross-border e-commerce GMV from 2012 to 2015 reduce slightly from 31.3% to 29.3%[18]. If compared to the change of total amount of China's inbound and outbound commerce from 2012 to 2015 as 4.5%, 6.5%, 4.9% and -1.7% for outbound volumes and 1.0%, 5.9%, -0.6% and -13.2% for inbound volumes[18], the growth rates of cross-border e-commerce are quite eyes-catching. The share of cross-border e-commerce to the total annual turnover of China's import and export commerce has risen from 4% to 14.2% in 2008 to 2014[19]. It is reported that the inbound cross-border e-commerce shows a strong pick-up in 2015, to 17.8% from 4.2% in 2008. Penetration of e-commerce reached 11.7% of total import turnover in 2015, up from 8.6% in 2014[18].

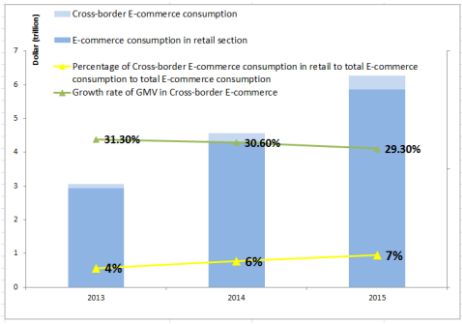


**Figure 3.** Transaction and growth rate of Cross-border e-commerce consumption and total e-commerce consumption in retail and their relations from 2013 to 2015, in China

Cross-border e-commerce especially in the inbound segment has shown robust growth over recent years as, in general, a reflection of combined factors of China's economic growth and industrial transition, wealth accumulation of the Chinese people especially the middle class, expanded willingness of spending of Chinese consumers, loss of made-in-China domestic-oriented products of Chinese consumers and their trust of strict production standards and regulatory controls in foreign countries and a bursting number of cross-border import sales channels in China. The rapid expansion of China's cross-border e-commerce has drawn attentions from brand owners, wholesalers, distributors, etc., nearly every part of the production supply-chain [15]. The exemplary industrial chains in China have formed including various stakeholders from the overseas products providers, companies offering trade platforms, logistics to payments methods as shown in Figure 4.

The boom of cross-border e-commerce in China has not only attracted freight flow and cash flow but also the attentions from Chinese authorities, especially from the customs and inspection organizations. It is always clear that the Chinese authorities would at some stage seek to better regulate cross-border e-commerce. The development of this cutting-edge business is in fact, dependent on the regulations and policies implemented by Chinese organizations say, the General Administration of Customs and the State Administration of Taxation.

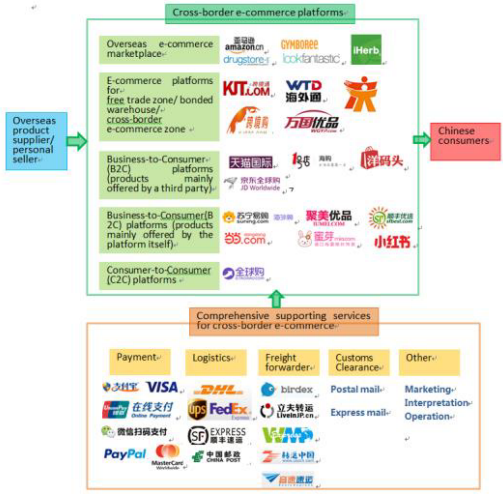


**Figure 4.** Industrial chain of cross-border e-commerce in China

As any company, Internet sellers need to design their product offering. In their case, this includes the choice of the offered delivery service, which is an important determinant of customer satisfaction.

## 2. Attitutes of Chinese Government towards Cross-border E-commerce

Before 2014 most importantly customs' rights and shopping experiences are impaired through both models of cross-border consumption to some extent. From China's supervision bodies' point of view, the existing grey custom clearance of most products labeled as 'personal items' may cause a huge amount of duty loss for China Customs.

To tackle the difficulties of supervision and tax loss, China's General Administration of Customs has lowered the duty-free allowance of Personal Luggage and Postal Tax to RMB 50 per package down from RMB 500 per package in September 2010 [20]. However it still remains great challenges for the customs organization facing the waves of growth for more and more piecewise cross-border packages.

2013 is seen by the business insiders as the 'beginning year' of cross-border e-commerce for China when five cities of Shanghai, Ningbo, Hangzhou, Chongqing and Zhengzhou were appointed as pilot cities of cross-border e-commerce service. Guangzhou became the sixth pilot city of cross-border e-commerce service soon and the seventh and eighth pilot cities are Shenzhen and Tianjin. The establishment of a batch of pilot cities of cross-border e-commerce in China reflects the solid determination of the Chinese government to lead the cross-border e-commerce into the sunny market of broad day light from the 'grey zone'. The general guidelines for the sunny market of cross-border e-commerce implemented by the Chinese government are 1) to guide commercial items formerly imported as personal-use articles through risky and grey customs clearance channels onto the road of legal levy of import customs duties and 2) to help the B2C outbound trade of cross-border e-commerce enjoy export subsidies.

In 2014 and 2015 the General Administration of Customs launches a series of announcements and circulars on modes of customs supervision on cross-border e-commerce inbound products and articles including the famous No. 56 and No.57 announcements in 2014 [21,22]. Since then a new approach of operating e-business for foreign merchants of bonded warehouse model has been legally accepted and regulated by China's Customs Administration besides the existing e-commerce model of direct shipping model. In March 2015, the first comprehensive cross-border e-commerce pilot zone was established in Hangzhou, home to the e-commerce giant Alibaba hosting the largest number of visitors and sales volume in China. In January 2016, a new batch of comprehensive cross-border e-commerce zones has been set up in 12 Chinese cities. These zones are designated exclusively for the development of cross-border e-commerce industry, featuring a slew of preferential tax policies and streamlined customs clearance procedures. Each of these zones has an online e-commerce platform operated by state-backed or licensed companies (e.g. Kuajingtong in the Shanghai Free Trade Zone as depicted in Figure 4).

From 2015, the administrative departments e.g. China Customs, China Inspection and Quarantine, State Administration of Taxation and State Administration of Foreign Exchange have launched opinions, announcements and notifications aiming to implement technical standards, business processes and information construction of cross-border e-commerce business in the comprehensive e-commerce zones.

Within these zones customs clearance procedures can be finished within 24 hours under the "365/7/24 customs clearance" scheme of China Customs. The General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China has designed a negative list management system for cross-border e-commerce in May 2015 and launched pilot policies exclusively for comprehensive zones aiming to promote portal development, simplify administrative operations and proceed risk inspection for product quality and safety. Shanghai Inspection and Quarantine Bureau in Shanghai Free Trade Zone has published a series of notifications and regulations to provide detailed operational provisions and rules for foreign and domestic companies and e-commerce platforms registered in the e-commerce zone on the principles of beforehand registration and declaration, digital bill confirmation and risk supervision and alert. Cooperation has been established between China Customs and CIQ to promote the practice of one-time declaration, one-time inspection and one-time release.

At the start of 2016 on a policy briefing conference the Ministry of Commerce of China has stressed that the main commercial model for cross-border e-commerce should be B2B subsided by B2C to help a sustainable development of China's foreign trade and an effective adjustment of China's economic structure. In April 2016, a new tax policy coupled with two "positive lists" concerning cross-section e-commerce retail sales was published jointly by China's authorities. The recent tax circular significantly changed the preferential tax policies that have been applied to cross-border e-commerce transactions. The changes were primarily adjustments to tax rates, introduction of a maximum RMB 2000 of single transfer in cross-border retail and an annual limit of RMB 20,000 per individual consumer.

The new tax policy and its attached positive lists mark the beginning of a long-term strategic development for the e-commerce industry in China. The low-tax advantages formerly enjoyed by this industry are disappearing and it is important for the e-commerce sales industry to remain attractive and competitive whilst complying with Chinese product quality standards.

## 3. Response and Expectation of Cross-border E-commerce Industry in China

The implementation of new tax policies and positive lists show good aims and correct interpretations of China's authorities for the current development trends of cross-border e-commerce in China. However it is hardly a happy moment or an easy time for merchants, companies and platforms conducting cross-border e-commerce. For these merchants and platform companies, the impact of individual consumer's single and annual transaction allowance and adjustment of tax rates is smaller than that of positive lists. E-commerce merchants and platforms have prepared to be involved in the price and tax-subsidies battles since the informal release of new tax policies in early March, aiming to attract consumers and maintain consumer market shares.

Chinese e-commerce giants such as Tmall global, JD.com etc. are facing the challenges of price subsidies and storage adjustment. Some are also making commercial transitions to direct shipping and overseas bonded warehouses or even high-end tourism businesses. Middle and small-sized e-commerce merchants are suffering from big reduction of sales volumes, lay-offs of staffs, shortage of product storages and cash flows. Merchants such as Jumei, Miya and Xiaohongshu conducted a closed-door conference, two weeks after the implementation of new policies, coming to conclusions that they are all experiencing a tough time that can be described as 'circular-break' and their difficulties should be informed to China's authorities. Some merchants claimed that in 20 days their products for sale would run out of storage.

After receiving negative feedbacks from e-commerce industries, China's authorities are making a few modifications to the newly implemented policies that positive-listed products in 10 China's pilot cross-border e-commerce zones are exempted from commodity inspection and registration before customs declaration for a transitional time period of one year with the tax policies remain unchanged. Cross-border e-commerce merchants and platforms can take advantages of this transitional time to adjust their business operation modes by enriching purchasing structure diversity, upgrading logistics services and promoting customers experiences etc. The transitional time could also be a vibrate integration development stage for cross-border e-commerce industry where opportunities and challenges coexist.

JD.com is one of China's largest comprehensive E-commerce retailers and self-run platforms and it possessed more than 50% of Chinese B2C E-commerce market since 2015. While maintaining the enormous market share of retail, its self-built logistics system has also drawn much attention and argument since its establishment in 2012. JD Express has made great effort in infrastructure investment, intelligent logistics techniques and human resources. Until 2016 seven RDCs (Regional distribution center), thirteen FDCs (Front distribution center) and a large number of DCs (Distribution center) have been operated spreading over China's mainland. The logistics network of JD Express is shown in Figure 5.

All the 7 RDCs, 13 FDCS and a small part of ACs of JD Express are included in the logistics network as shown in Figure 5 Logistics distribution is managed by JD Express as illustrated in Figure 5 here cargos are transported among RDCs, between RDCs and FDCs and between FDCs and ACs. The directions of cargo flow are also illustrated.

The logistics network is a multi-Hub-and-spoke one. It is a small world network in which two vertices are connected by a few links. For the example of AC in this network, it is connected to the nearest RDC hub by two links, one connecting this AC to its nearest FDC and second connecting the FDC to the nearest RDC. Benefits of this

multi-Hub-and-spoke model include a small number of routes required to connect all vertices in a network and complicated operations can be performed at each RDC hub and FDC sub-hub. Drawbacks of this type of the network include that it is required large efforts of infrastructure investment especially at hubs and sub-hubs. Inflexibility exists in the operation of the whole network since the change at the hub may have unexpected consequences throughout the network and may dampen the efficiency of operation.

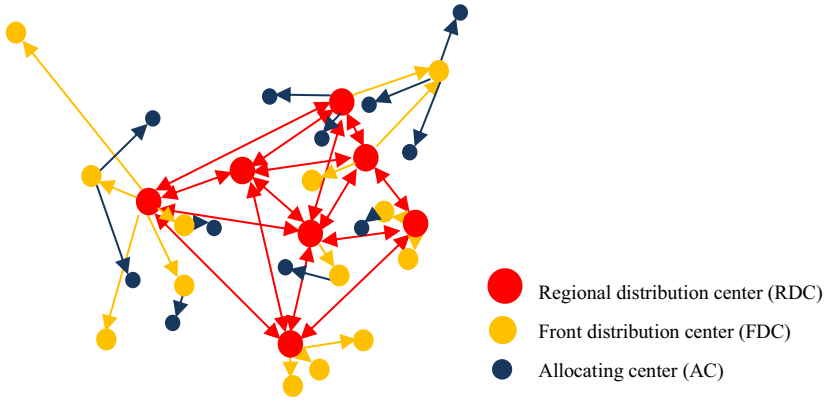


**Figure 5.** Logistics network of JD Express

A limited path percolation model (LPP) of a network concerns the stability of the network, i.e. under what conditions it becomes inefficient and cannot transmit flow within acceptable time period. The model is developed from the percolation theory. In this model, the critical percentage of links, $p$, needed to keep the vertices in a network connected is computed. A small value of $p$ indicates longer length of paths. In some cases long paths for network users are inefficient and even unacceptable even the connectivity remains.

In this model, after removing a fraction $q = 1 - p$ of the network nodes, any two of these nodes, say $i$ and $j$ are considered connected only if the shortest path between them is shorter than a*ℓij (a ≥ 1), where ℓij is the shortest path before removal. The value of $p$ is calculated for one type of complex networks by the author. Random removal and targeted removal to highly connected vertices are used in the simulations. The generated value range of $p$ result to a small fraction of removed links to damage the connectivity of the network and its level of services to its users. In other words, events with small effort would lead to a great breakdown of the network. The combined utilization of small world analysis and the LPP model can help examine the trade-off between efficiency and cost of a logistics distribution hub-and-spoke network.

Except for JD Express, Amazon China, Federal Express, UPS have all successfully implemented hub-and-spoke distribution to achieve a competitive logistics advantage.

## 4. Conclusions and Discussions

### *4.1. Current status of China's cross-border e-commerce industries*

Decades of rapid growth of China's economy results in the rising number of Chinese Internet users and middle class. Growing salaries, willingness to spend and

discrimination of purchased products for Chinese middle classes are three major factors that stimulate China's cross-border e-commerce industry. This industry is also encouraged by Chinese authorities aiming to create a more vibrate and competitive market for production and sale in China.

However for China's supervision organizations, the large amount of parcels is a challenge to be faced particularly for China's Ministry of Taxation and General Ministry of Customs. A slew of preferential policies and regulations have been implemented by the supervision bodies since the official establishment of cross-border e-commerce pilot cities and zones to promote the development of the cutting-edge e-commerce industry and to balance e-commerce trade with general trade and import with export trade at Chinese market.

The development of China's cross-border e-commerce industry, being sensitive to the implementation of supervision policies and regulations, has experienced distinctive stages of rapid growth and a recent slowed-down adjustment. For the e-commerce companies and platforms, the current adjustment of industry policies can be utilized as a good opportunity to reform their purchasing organizational structures and upgrade customer-oriented services for enhancing their competitiveness of international supply-chain and global trade.

### *4.2. Future expectations of China's cross-border e-commerce industries*

In the long run the threat of cross-border e-commerce on the traditional import and export trade will remain with the benefits of quick flow of products and cash featured by cross-border e-commerce and advantages of foreign products in terms of quality, diversity and sales price.

As the second largest economy and the largest GMV in the world, China's economy is currently in deep structural reform and industry transition. The determination of Chinese government to open domestic market and be more engaged in global trade is injected in a series of national strategies such as the one-belt-one-road policy and establishment of free trade zones and pilot cross-border e-commerce zones. Except for the national strategic planning, it is reasonable for Chinese government to guild and boost the development of cross-border e-commerce as it has become a "new normality" for Chinese consumers purchasing foreign products.

A sustainable and healthy development for China's cross-border e-commerce industry would be achieved by the work of merchants, companies and platforms and the determination of the supervision authorities to guild and assist the industry but most importantly the establishment of an efficient negotiation mechanism between the industry and government authorities.

A hub-and-spoke distribution network maintains the balance between transport efficiency and cost. The main objective of E-commerce business in China should be to minimize transportation costs, having higher requirements to cargo handling cost and consolidation time in logistics hub and at the same time pay attention to complex route system design from demand point to logistics hubs.

The paper is limited to a contextual explanation of the research, future work will be done on the application of the Mixed-Integer Linear Programming (MILP) model on comparative examples of e-commerce companies. The topological complexity of mathematical models of logistical distribution networks is to be studies by use of complex network theory. Trade-offs between delivery time and transportation cost is to be evaluated.

## Acknowlegement

The authors would like thank for the financial support of Shanghai Shipping Logistics Information Engineering Technology Research Center under the program of 'Enhancing the competence of Shanghai Shipping Logistics Information Engineering Technology Research Center (July 2014-June 2017)'.

## References

[1] World bank group, *Global economic prospects: weak investment in uncertain times*, 2017.
[2] Italian Institute for International Political Studies, *Xi's policy gambles: the bumpy road ahead*, 2015.
[3] The state council, the People's Republic of China, *No hard landing in store for the economy: Premier*, 2017.
[4] National development and reform commission, *National report on sustainable development*, 2012 http://www.china-un.org/eng/zt/sdreng/P020120608816288649663.pdf Accessed on April 18th 2017.
[5] Ministry of Foreign Affairs of the People's Republic of China, *China's position paper on the implementation of the 2030 agenda for sustainable development*, 2016.
[6] National development and reform commission, *The 13th Five-Year Plan for Development of E-Commerce, the Implementation Plan (2016-2018)*, 2017.
[7] Ministry of Commerce, *The 13th five-year plan for development of E-commerce*, 2016.
[8] D. Zipserm,Y.G. Chen and F. Gong, The modernization of the Chinese consumer, *2016 China Consumer Report of McKinsey&Company*. March 2016. http://www.mckinseychina.com/wp-content/uploads/2016/03/The-Modernization-of-the-Chinese-Consumer_EN.pdf?a9d170 Accessed on April 28th 2016.
[9] *Analysys. Benefits and experiences of cross-border e-commerce: A case study on Weipin International*, 2016.
[10] The Boston consulting group (BCG) and AliResearch, *The new China playbook*, December 2015.
[11] Iresearch, *Research report on China's Internet consume financial market*, 2016. URL: http://wreport.iresearch.cn/uploadfiles/reports/635943271172626741.pdf Accessed on May 5th 2016.
[12] Credit Suisse-Research Institute, *Global wealth report 2015*, Zurich, Switzerland. October 2015.
[13] Ystats. Com, *Global B2C E－Commerce Sales & Shares Report 2013*[EB/OL]. http: //www. ystats. com/en /reports/preview. php? reportId = 1040＆backtosearch = true. 2013 － 07 － 08_Accessed on May 5th 2016.
[14] Iresearch, *2012—2013 China E-Commerce Report*[EB/O]. http: //www. iresearchchina. com/samplereports /5230. html, 2013 － 10 － 22. Accessed on May 4th 2016.
[15] Consulate General of the Kingdom of the Netherlands in Guangzhou, *China Cross-Border E-commerce, opportunities for Dutch Companies*, 2015.
[16] L. Schlein, China's *Melamine milk crisis creates crisis of confidence*, Voice of America. http://www.voanews.com/a/a-13-2008-09-26-voa45/403825.html Accessed on 15th May 2016.
[17] General Administration of Customs People's Republic of China, *Regulations of the People's Republic of China on Import and Export Duties*, 2004. http://english.customs.gov.cn/Statics/d30338b4-2f6a-47ea-a008-cff20ec0a6d2.html Accessed on 18th May 2017.
[18] Iresearch, *Research report on China's cross-border e-commerce retail industry*, 2016. URL: http://wreport.iresearch.cn/uploadfiles/reports/635931381870900010.pdf Accessed on 10th May 2016.
[19] L.B. Er and Y.W. Huang, Latest research on a new mode of international trade: cross-border e-commerce, *Journal of Dongbei University of Finance and Economics*, Vol. 92, March 2014, No.2, pp. 22-31.
[20] Swiss Business Hub China. China, new rules on cross-border e-commerce retail imports. 2016.
[21] Ministry of Commerce People's Republic of China. The Announcement of General Administration of Customs: 2014 No.56 (The announcement of regulatory matters on inbound and outbound goods and articles of e-commerce cross-border trade).2014.
[22] General Administration of Customs People's Republic of China, *Announcement No.57*, 2014 Adds "1210" Customs Supervision Code. 2014.