



# **Why Don't Similar E-commerce Companies Choose Similar Logistics Distribution System?**

*A Case Study of two E-commerce Companies in China  
based on Transaction Cost Theory*

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## Abstract

During the last decade, the importance of “last mile delivery” has become increasingly prominent due to the booming development of e-commerce. Logistics services have become the bottleneck of the development of e-commerce in China.

This thesis focuses on the research of self-built and outsourced logistics distribution system. The main research objective is to identify why two similar e-commerce companies have chosen different logistics distribution system

In this study, two e-commerce companies were selected as cases to analyze two different types of logistics distribution systems in order to develop an understanding of the reasons for different choices of logistics distribution system. Jingdong Mall represents the self-built logistics distribution system while Taobao Mall represents the outsourced logistics distribution system. The two companies are the most representative of Chinese e-commerce industry. The case study is used as the main research method. This study investigates the critical factors for these two e-commerce companies in adopting either self-built logistics or outsourced logistics from transaction cost theory perspective. Within-case and cross-case analyses are simultaneously applied to further analyse these two logistics distribution systems.

This research demonstrates the utility of transaction cost theory. Though a case study of Jingdong Mall and Taobao Mall, it highlights that the important factor of relational adaptation drove Taobao Mall to maintain its preference for logistics outsourcing. Furthermore, this study reveals that the degree of CEOs' risk preference had a significant impact on their choice of logistics distribution systems for their respective e-commerce companies.

Key words: E-commerce, logistics distribution system, transaction cost theory

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## Contents

<b>Abstract</b> .....	<b>1</b>
<b>1 Introduction</b> .....	<b>5</b>
1.1 Research background.....	5
1.2 Problem statement.....	7
1.3 Research objectives .....	9
1.4 Research question .....	9
1.5 Research method and limitation.....	9
1.6 Structure of the thesis.....	10
<b>2 Theoretical framework</b> .....	<b>11</b>
2.1 Transaction cost economics (TCE).....	11
2.1.1 Asset specificity.....	12
2.1.2 Transaction frequency.....	12
2.1.3 Transaction uncertainty .....	13
2.1.4 Governance mode.....	13
2.2 Transaction cost economics (TCE) and Outsourcing.....	14
2.2.1 TCE based outsourcing.....	14
2.2.2 The relationship between the key TCE concept and outsourcing.....	15
2.3 Logistics and e-commerce.....	16
2.3.1 Asset specificity between e-commerce and logistics.....	16
2.3.2 Transaction frequency between e-commerce and logistics .....	18
2.3.3 Transaction uncertainty between e-commerce and logistics .....	18
2.3.4 Governance mode between e-commerce and logistics.....	19
<b>3 Methodology</b> .....	<b>20</b>
3.1 Research approach.....	20
3.2 Research strategy .....	20
3.2.1 Case study.....	20
3.3.2 Case selection.....	21
3.3 Data collection.....	22
3.3.1 Primary data.....	23
3.3.2 Secondary data .....	24
3.4 Data analysis.....	24
3.4.1 Within-Case Analysis .....	24
3.4.2 Cross-case Analysis.....	25
3.5 Research Quality .....	25
<b>4 Empirical findings</b> .....	<b>27</b>

4.1 Taobao mall.....	27
4.1.1 Introduction and Background of Taobao Mall .....	27
4.1.2 Outsourced logistics distribution system of Taobao Mall .....	28
4.1.3 Interview report for the CEO of Taobao Mall .....	29
4.1.4 Semi- Structured interview for Taobao Mall .....	30
4.2 Jingdong Mall.....	32
4.2.1 Introduction of Jingdong Mall.....	32
4.2.2 Self-built logistics distribution system of Jingdong Mall.....	33
4.2.3 Interview report for the CEO of Jingdong Mall .....	34
4.2.4 Semi-structured interview for Jingdong Mall.....	35
<b>5 Analysis.....</b>	<b>38</b>
5.1 within-case analysis.....	38
5.1.1 Jingdong Mall.....	38
5.1.2 Taobao Mall .....	40
5.2 Cross-case analysis.....	42
5.2.1 Self-logistics and Outsourced logistics.....	42
5.2.2 Jingdong Mall and Taobao Mall.....	44
<b>6 Conclusion .....</b>	<b>47</b>
<b>References.....</b>	<b>48</b>
<b>Appendix 1 .....</b>	<b>53</b>
<b>List of acronyms .....</b>	<b>54</b>

# 1 Introduction

This introductory chapter consists of six sections: 1) research background, 2) problem definition, 3) research objectives, 4) research question, 5) research method and limitations, and 6) structure of the study. Firstly, the phenomenon of the modern e-commerce and the challenge it poses to modern logistics is described in detail. Then, two different types of logistics models are introduced. This section also defines the logistics problem and gives it a clear demarcation. The research objectives and research question are proposed after following the “problem definition” section. The method and limitations of the study are then presented. Finally, the structure of this study is outlined.

## 1.1 Research background

E-commerce plays a significant role in China’s emerging new economy (Ling & Wong, 2001), as a result of the booming development of e-commerce traditional business has been transformed by. E-commerce represents the direction of the modern business, and has a significant impact on the entire society (Wang & Li, 2014). Since the 2008 recession, e-commerce has become a major trend in every market around the world, particularly so in China in recent years. China is “the world’s factory” and a large number of Chinese firms are conducting more and more of their business online.

*“E-commerce is a complete process that consists of information flow, capital flow, business flow and logistics”* (Xiao, Liu, & Zhang, 2012, s. 57). In e-commerce, people are able to transact with the largest amount of freedom and without the limitation of time, space, and many other factors that traditional transactions have dealt with in the past. Moreover, e-commerce has a much broader market. The Internet has made the world smaller and more accessible, so that one marketer can engage with many potential global consumers. Meanwhile, one consumer can patronize any of the global marketers (Chaffey, 2004; Laudon, 2014). In e-commerce, any product can circulate at a much faster speed and a much cheaper price because e-commerce reduces the need for an intermediary link and saves on expenses; as a result, the cost of product circulation and the general transaction are lowered significantly (Laudon, 2014). Furthermore, e-commerce is suitable for the demands of this era. In modern society, people are interested in fashion, individual characteristics, and a more consuming

environment. Few of these new demands can be achieved by traditional transaction, which is an important reason why e-commerce has begun to replace traditional offline transaction in many cases (Manzoor, 2010). While e-commerce has already developed significantly, modern logistics is still developing gradually. Modern logistics requires a new integrated management strategy that mixes information, transportation, warehouse, handling, packaging, etc. (Baidu, 2016a). Its task is to reduce the overall cost of logistics as much as possible and simultaneously provide the best possible service for the consumers (Baidu, 2016a). As defined by some scholars in this field, “modern logistics” refers to a company transferring the products from the supply end to the demand end based on the demand of the clients and the most economical expenditure strategy (Scholz-Reiter, Frazzon, & Makuschewitz, 2010; Baidu, 2016a).

The rise of e-commerce has posed numerous challenges for logistics and has already begun to reshape the concept of traditional logistics by realizing the rationalization of logistics and achieving the highest efficiency, lowest cost, etc. (Wang & Li, 2014, ss. 23-26). Moreover, e-commerce will change the operating model of logistics. The information determines the direction of the motion, and the operating model for logistics (Chen & Lin, 2013). Moreover, e-commerce will enhance the development of the logistics management (Graham, Manikas, & Folinas, 2013). There is no doubt that the level of the logistics management directly determines the efficiency of logistical operation. Eventually, e-commerce will generate an even higher demand for logistics talents and innovation (Chen & Lin, 2013).

As mentioned above, e-commerce and logistics seem increasingly inseparable. In order for e-commerce to succeed, an effective logistics service needs to be in place. Therefore e-commerce creates a huge market space and opportunity for the logistic industry, while also representing a challenge for the logistics industry (Dixit & Sinha, 2016). In order to cope with the challenges of modern e-commerce, there are two main types of logistics model: self-built logistics and outsourced logistics (3PL). The former means that a company takes advantage of its own logistical resources such as logistics management, customer service, warehousing and transportation, to organize its own logistics activities (Chen & Lin, 2013; Zhang N. , 2013). The latter means that the company expects to integrate all of the resources it has to strengthen its core competence, and outsource its logistics’ needs to a third-party logistics company (3PL)

through a contract that represents long-term, strategic, and mutually-beneficial cooperation (Vaidyanathan, 2005, ss. 89-94; Wang & Li, 2014; Chen & Lin, 2013).

## 1.2 Problem statement

With China's rapid e-commerce growth, the scarcity of high-quality logistics providers is a real issue. The issue of "last mile delivery" raises a number of discussions. According to Ghezzi et al. (2012, s. 1), some western e-commerce companies' successes are built on logistical excellence (e.g. Amazon, Vente Privée, YooX, Tesco and Esselunga).

As stated in the background section, for the sake of coping with the challenge of e-commerce, modern logistics includes two feasible logistics models are the feasible means. The self-built logistics model has a number of strengths. Firstly, the company maintains effective control over the whole process. The company deals independently with internal purchasing, manipulation, selling activities, the characteristics of the materials and products, and the running capability of suppliers and retailers, the company deals with these businesses independently (Zhang N. , 2013). Therefore, self-built logistics has an incredible understanding for its own relevant information. Compared with self-built logistics, outsourced logistics results in an asymmetry of the information, and the company is unable to fully master the integrated data (Zhang N. , 2013). Self-built logistics is also able to decrease transaction cost (Zhang N. , 2013). According to Vaidyanathan (2005, s. 90), "*significant IT improvements are leading to lower transaction costs and allowing all supply chain participants to manage increased complexity.*" Furthermore, self-built logistics can help to avoid any leak of commercial secrets (Chen & Lin, 2013). When a company outsources its logistics service, much of the most fundamental information about the company's operation has been revealed to the third-party. Moreover, self-built logistics can enhance the value of company brands because the company is able to provide its clients with better logistics services (Goh & Gan, 2011). However, if the logistics service is outsourced, 3PL companies most likely cannot achieve the same objective. In addition, self-built logistics can add to profits by allowing the company to use its redundant logistics distribution capability to receive the logistics service to other companies (Goh & Gan, 2011; Zhang & Li, 2012). That being said, for self-built logistics, the cost of running a company is increasing. For any



company, owning a distribution group is an enormous expenditure. The professional equipment required for self-built logistics will certainly add to the fixed cost of the company. The burden on investment increases and the capability against market risk is largely reduced (Dixit & Sinha, 2016). Also, the company invests a large amount of funds to purchase stock, transportation equipment, and logistics talents (Dixit & Sinha, 2016). Hence, what the company invests in other domains will be reduced and the core competence of the company will be weakened (Dixit & Sinha, 2016).

Compared with self-built logistics, outsourced logistics have a much lower cost and the company's core competence is stronger. For the majority of current companies, logistics is a rear-service department serving the formal business, and logistics is not seen as a major professional advantage (Dixit & Sinha, 2016). In this case, company administrators need to spend a large amount of time undertaking logistics work, consequently, the efficiency of the company's overall functionality is lower, even having a negative impact on the development of the main business (Dixit & Sinha, 2016). In addition, for those companies that operate on a small scale, productivity is limited by self-built logistics and it is hard for them to form scale effect. Using self-built logistics prevents the formation of a corresponding scale effect for companies operating on small scales. On the one hand, the logistics costs of the company will be increased. But on the other hand, due to the limited scale, it is difficult to satisfy the demand for the company and product (Goh & Gan, 2011). A 3PL provider is available for use, but most 3PL companies do not offer complex services such as exchange, collect-on-delivery, etc. (Goh & Gan, 2011). In addition, the service quality is hard to control meaning that supervision cost increases measurably (Hu, 2016). If the 3PL company operates improperly, it will cause a negative impact on the e-commerce companies that it serves (Dixit & Sinha, 2016). If some companies have a high service criterion for their clients, their logistics cost represents a large proportion of the overall costs, and their self-management capability regarding logistics is also strong. In this case, the self-built logistics model is appropriate to use. However, not all e-commerce companies are suitable to utilize this type of logistics model (Dixit & Sinha, 2016; Goh & Gan, 2011).

From the above discussion, it is clear to see that both logistics systems have their strengths and drawbacks. However, the Taobao and Jingdong Malls, as the largest e-

commerce companies in China, which also have quite similar features, have recently adopted the outsourced and self-built logistics distribution systems, respectively. These two very similar e-commerce companies chose different logistics distribution systems, and the research seeks to identify the reason for this. Why have these companies made such different decisions? What advantages and disadvantages of the self-built and outsourced logistics systems are being taken into account by these two large businesses? This is an emergent research problem exemplified by these two cases and is the main focal point of this research.

### **1.3 Research objectives**

The objectives of this research are as follows:

To identify the reasons why the Taobao and Jingdong Malls chose different logistics distribution systems.

To develop a comparison between the self-built logistics and the outsourced logistics systems, thereby building a better understanding of these two mainstream logistics models in the e-commerce environment.

To learn and apply an economic theory: transaction cost theory

### **1.4 Research question**

The research questions of this study are listed as follows:

Main Question: Why have Taobao and Jingdong Malls chosen different logistics systems?

Sub-question: What factors led to their decisions?

Sub-question: How do the selected logistics systems influence their company performance now?

### **1.5 Research method and limitation**

In order to answer the research question and fulfill the research purposes, a case study is conducted on Jingdong and Taobao Malls. Jingdong Mall represents the self-built logistics distribution model while Taobao Mall stands for the outsourced logistics distribution model. Through a comparative research of these two cases, some internal mechanisms are uncovered, and some useful information is obtained. Furthermore,

relevant individuals are interviewed and the interrelated CEO interview reports are used as secondary data. Next, the transaction cost theory is applied to better analyze this research field. At the same time, within-case and cross-case analyses are adopted.

The limitation of this study is the fact that only two cases are being studied, so this study cannot conclude better or more significant conclusions by virtue of this case number limitation. In addition, it became impossible to interview the individual CEO of these case companies, instead a lot of secondary CEO interview reports, which are interrelated to the purposes of this study, served as the supplemental data resources.

## 1.6 Structure of the thesis

This thesis consists of six chapters, and each chapter will be briefly introduced as follows:

**Chapter 1:** Introduction. This chapter will introduce the research background. Next, this section will define the research problem. Subsequently, some basic information such as research objectives, research questions, research method and limitation, as well as writing structure will be presented.

**Chapter 2:** Theoretical framework. In this chapter, transaction cost theory will be introduced in detail. Furthermore, the literature concerning the way in which transaction cost theory is applied to explain the outsourcing will be introduced here. Finally, based on the key concepts of transaction cost economics, this section will outline the variable of TCE influencing the governance mode in e-commerce with respect to logistics.

**Chapter 3:** Methodology. This chapter will present in-detail the methodology used in this research.

**Chapter 4:** Empirical findings. This chapter will present the data gathered from both primary sources (semi-structured interview) and secondary sources (second-hand CEO interview reports.)

**Chapter 5:** Analysis. This chapter will apply transaction cost theory to analyse the empirical findings from the previous chapter. Meanwhile, within-case and cross-case analysis will be presented.

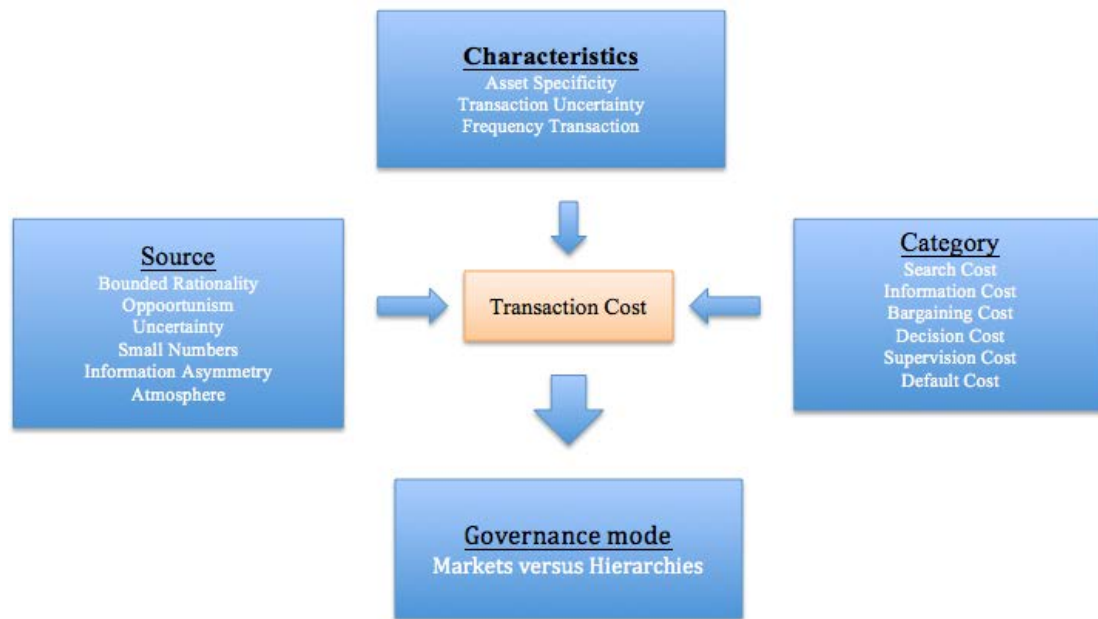
**Chapter 6:** Conclusion. This chapter will summarize the contents of the whole passage and present some conclusions based on the analysis in the previous chapter.

## 2 Theoretical framework

This chapter is divided into three parts. Firstly, the core concept of transaction cost theory is described in detail, which is the theoretical basis of this research. Next, this chapter presents a literature review concerning how transaction cost theory explains the phenomenon of outsourcing; it also explores some useful information from those studies. Finally, based on the key concepts of transaction cost economics, the variable of TCE influencing the governance mode in e-commerce with respect to logistics is outlined

### 2.1 Transaction cost economics (TCE)

Nobel Economics winner Coase proposed the transaction cost theory in 1937. Transaction costs theory refers to the cost of transferring goods or services through the external environment rather than having them transferred from within a firm (Coase, 1937). Coase (1937) thought that transaction costs were the most important factor in explaining why companies existed and grew. According to Coase (1960), no companies would exist if transaction costs were equal to zero. However, transaction costs do exist in real life. If transaction costs are too high, companies do not outsource to the provider in the market and instead establish in-house measures to meet the same requirements (Coase, 1937; 1960). Based on the foundation of transaction cost theory by Coase, Williamson (1975) indicated that six sources of transaction costs exist, including bounded rationality; opportunism; uncertainty and complexity; small number; information asymmetry and atmosphere. In the transaction process, on account of people's bounded rationality and opportunism is affected by the complexity of the environment. Hence, it is difficult to observe and measure transaction costs (Masten, Meehan, & Snyder, 1991). Williamson (1985) also discovered that transaction costs had three characteristics that decided the amount of the transaction cost: asset specificity, transaction uncertainty, and frequency transaction. In addition, transaction costs are the costs of facilitating the formation of the transaction, and include the search, information, bargaining, decision, supervision and default cost (Dahlman, 1979, ss. 141-162). Figure 1 illustrates an overview of transaction cost economics.



**Figure 1. Sources, category, characteristics and governance mode of transaction cost economics**

Source: Made by Author

### 2.1.1 Asset specificity

Williamson (1985) pointed out that asset specificity is the most important of the three critical dimensions and mentioned that the implication of asset specificity is that the transaction asset does not have any negotiability; otherwise, once the transaction contract is terminated, those investments on the asset cannot be recycled or changed in terms of use. John and Weiz (1988) explained that “*Specialized assets are those investments in physical and/or human assets that have very limited salvage value outside the focal exchange.*” Williamson (1985) classified asset specificity into five types: locations or plant sites, physical assets, process knowledge, employees with special training, and brand-name capital.

### 2.1.2 Transaction frequency

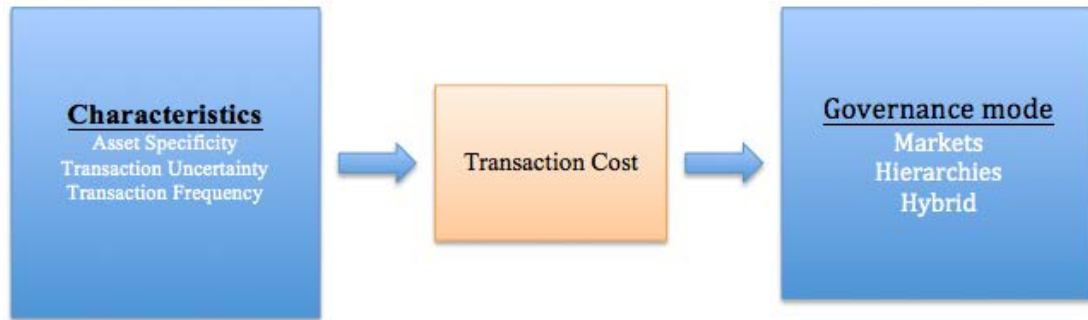
In simple terms, the transaction frequency is the number of transactions that occur. In the view of John and Weiz (1988), “*Frequency refers to the distinction between one-shot exchange and recurrent exchange.*” The transaction frequency has a direct influence on the transaction cost and both have a positive correlation. The higher the transaction frequency is, the higher the management cost and the bargaining costs will be (Williamson O. E., 1985).

### 2.1.3 Transaction uncertainty

Due to the restriction of bounded rationality, people cannot predict the future. In addition, on account of information asymmetry in the transaction process, both parties of the transaction will safeguard their own interests through the contract. Hence, the increase of the transaction uncertainty will lead to a rise in supervising or bargaining costs (Williamson O. E., 1985). Consequently, the transaction cost will be increased. John and Weiz (1988) stated, “*Uncertainty refers to the condition of being unable to predict relevant contingencies.*” In general, the higher the transaction uncertainty is, the higher the transaction costs are.

### 2.1.4 Governance mode

Coase (1937) classified governance modes into markets and hierarchies. With regard to market governance, companies govern in response to the price mechanism. However, as for hierarchical governance, the company governs through hierarchies established within the company. According to Williamson (1991), in real-world economic activity, in addition to markets and hierarchies, there is a third governance mode; namely hybrids. Hybrids refer to an intermediate form of governance between markets and hierarchies. More specifically, externalization and internalization are the two main alternatives in terms of the governance mode (Svend, 2007). Externalization means doing business through an external partner while internalization means doing business through your own internal organization. Svend (2007) stated, “*If the transaction costs through externalization are higher than the control cost through an internal hierarchical system, then the firm should seek internalization of activities.*” Accordingly, when companies make operational business decisions, they will have to choose a governance mode; namely, a hierarchical, market or hybrid structure. The choice of governance mode is based on a comparison of transaction costs. The purpose of the transaction cost management is to select the most efficient governance mode to minimize the transaction costs. In order to promote operating efficiency and reduce operating costs, companies should apply a specific governance structure based on the particular characteristics of transactions and investment (Williamson O. E., 1979). Figure 2 presents the governance mode determined by the characteristics of transaction cost theory.



**Figure 2: The governance mode is determined by the characteristics of TCE**

**Source: Made by Author**

## 2.2 Transaction cost economics (TCE) and Outsourcing

Hamel and Prahalad (1990) created the term “outsourcing” and argued that it is one of the core competences of a company. Over the years, outsourcing has been viewed as an important source of competitive advantage (Broedner, Kinkel, & Gunter, 2009). Yang et al (2012, s. 4462) stated, “*Outsourcing is essentially an inter-organisational business transaction.*” Wee et al (2010, ss. 2081-2094) asserted that outsourcing will remain a critical element of business strategy. However, according to Kroes and Ghosh (2010, ss. 124-143), most studies did not empirically verify that an outsourcing decision can contribute to a strategic benefit.

### 2.2.1 TCE based outsourcing

In terms of economics, the reasons for outsourcing can be explained from different angles and there are a number of arguments to explain it, including the theory of comparative advantage (Imberman, 1998, s. 80), specialization and division of labor (Lacey, 2002; Aubert, Rivard, & Patry, 1996, ss. 51-64), and transaction cost theory (Coase, 1937; Williamson O. E., 2008), etc. Transaction cost theory is one of the most outstanding theories in this discussion. Boniface (2011, s. 35) also stated, “*Transaction cost economics provides a conceptual explanation of the outsourcing phenomena.*” The research fields of outsourcing and transaction cost theory are very well established in peer-reviewed journals. Therefore, transaction cost theory is capable of providing a perspective of analysis and interpretation of outsourcing. “*The concept of TCE has long been discussed and applied in the fields of strategy, marketing, and organizational behavior*” (Yang, Wacker, & Sheu, 2012, s. 4464). Grover et al. (2003, ss. 457-473) point out that the theoretical framework of Transaction Cost Economics (TCE) could

be applied to determine the governance mode (markets versus hierarchies) for companies. *“Enterprises’ outsourcing decisions include the comparison and balance of transaction cost under different governance mechanisms”* (Zhang, Mei, & Zhang, 2005, s. 17). Zhang (2005, s. 17) also stated that *“Considering the calculation and comparison of production and transaction cost, enterprises should choose appropriate corporate governance mechanisms in different transaction cases”*. Accordingly, when companies make an outsourcing decision, transaction cost theory should be taken into account. Yang et al. (2012, s. 4464) stated that *“The benefit of outsourcing transactions is derived from the buyer better utilizing its resources, which leads to better competitiveness performance.”* Therefore, the efficiency of outsourcing decisions involves companies assigning their business to suppliers that can provide products or services more efficiently than the companies can provided in-house. It is a type of strategy management mode for cost reduction and company core competition improvement.

### **2.2.2 The relationship between the key TCE concept and outsourcing**

Yang et.al (2012) explained that asset specificity, transaction frequency and transaction uncertainty are usually used to predict the efficiency of the outsourcing decision. Therefore, the key TCE variables that can make an outsourcing decision effective include asset specificity, transaction uncertainty and transaction frequency.

There is a great deal of literature about the relationship between the governance mode and the key TCE variables. Poppo and Zenger (1998, ss. 853-877) discovered that asset specificity increases the dependency between transaction parties and opportunism, which has a negative impact on outsourcing. Verwaal et al. (2008, ss. 38-54) found that asset specificity and uncertainty have a negative effect on outsourcing. Levy (1985, ss. 438-445) verified the positive effect of asset specificity and uncertainty on vertical integration based on the transaction cost approach, and mentioned that companies will integrate essential asset when the costs of transacting through markets are greater than the internal costs of management. Similarly, John and Weiz (1988, ss. 121-139) argued that forward integration is positively related to both asset specificity and uncertainty. In the view of Maltz (1994), there is a negative relationship between asset specificity and outsourcing. However, transaction frequency increases the



probability of outsourcing (Maltz, 1994). Asset specificity and uncertainty decrease reliance on service providers, especially for logistics service. (Rabinovich, Knemeyer, & Mayer, 2007, ss. 661-681). Accordingly, asset specificity and uncertainty have a strong negative impact on outsourcing decision-making. Moreover, given a certain level of asset specificity and uncertainty, the higher the frequency transaction, the higher the transaction costs in outsourcing (Zhang, Mei, & Zhang, 2005).

## 2.3 Logistics and e-commerce

In e-commerce, *“costs are dropping in transaction processing, purchasing, inventory scheduling, and logistics.”* (Heizer & Render, 2000, s. 22). Heizer and Render (2000, s. 23) argued that logistics is one of the areas in which e-commerce can help to reduce costs substantially. The evolution of the market and the rapid development of e-commerce have led to a large number of specialized 3PL providers that serve e-commerce companies in the market. This is consistent with Jennings’s (2002, ss. 26-34) finding that the scope of sourcing some non-core businesses outside the companies in the evolution of the market has increased. However, the decision of whether to pursue logistics outsourcing depends on which governance mode results in more efficient performance in the e-commerce environment. According to Williamson (1985), the level of asset specificity, transaction frequency, and transaction uncertainty is closely related to the amount of the transaction cost. Choosing the most efficient governance mode can be based on the key TCE attributes.

### 2.3.1 Asset specificity between e-commerce and logistics

In terms of asset specificity, the five types of asset specificity mentioned by Williamson (1985) have been applied to explain the e-commerce environment with respect to logistics: 1) Locations or plant sites 2) physical assets 3) process knowledge 4) employees with special training and 5) brand-name capital.

1) The location or plant sites of e-commerce logistics will have a large influence on logistics cost. Cai & Xiao (2011, ss. 59-63) highlighted that the construction of the distribution center must be reasonable while large e-commerce company are selecting the position of the distribution center. The location of the distribution center is quite

important in e-commerce. An unsuitable and or inefficient location will increase logistics costs to different extents.

2) The physical assets of logistics, such as the goods van and other transportation tools also have a significant influence on logistics costs. If the specificity of these logistics assets is higher, the potential logistics costs will be higher as they cannot be easily sold to other companies once the companies no longer needs them. The rate of depreciation is fast for most transportation tools. Therefore, the value of the transportation tools is reduced.

3) The process knowledge remains an important section of asset specificity. For instance, the process knowledge of logistics can be the specific means and process of the transportation. Different logistics companies have different transportation means and, therefore, utilize different combinations of transportation methods. These different combinations result in different logistics costs. Once the specificity of the logistics combination is higher, the specificity will undoubtedly also be higher.

4) Human capital is transaction-specific when the discovery of information depends on particular logistics employees, suggesting that logistics talent is very important. In e-commerce companies lack professional logistics talents in general (Chen & Lin, 2013, ss. 838-843). Thus, logistics companies are expected to vertically integrate for e-commerce companies.

5) Regarding brand-name capital, good logistics services are expected to vertically integrate. The value of the company brands can be enhanced because the company is able to provide its clients with the better logistics services (Goh & Gan, 2011).

All of the above five items are investment-specific for e-commerce companies with respect to logistics.

**Proposition 1. Logistics distribution system is transaction-specific investment for e-commerce companies.**

### 2.3.2 Transaction frequency between e-commerce and logistics

In the e-commerce environment, transaction frequency is considered a highly significant factor. Williamson (1985) described high transaction frequency as a reason behind the choice of a hierarchical mode. In the view of Williamson (1985), the higher the transaction frequency, the higher the transaction cost will be. In the e-commerce environment, customers can conduct transactions via the Internet at any time or any location, which increases transaction frequency. The transaction frequency of logistics is expected to be positively related to e-commerce, given their inseparable relationship. For large-scale e-commerce companies, the transaction frequency is high. Therefore, transactions should be conducted with high frequency with respect to logistics.

**Proposition 2. E-commerce companies should choose self-built logistics if high transaction frequency are expected in the distribution process.**

### 2.3.3 Transaction uncertainty between e-commerce and logistics

How well a company safeguards against transaction uncertainty subsequently influences the effectiveness of the governance mode. Companies outsource services to external providers by establishing a series of contracts. Yang et al. (2012) argued that contractual clauses have a significant indirect effect on the outsourcing transaction. There are limits to the amount of uncertainty that can be managed through contractual clauses. However, there exist limitations for using legal contracts as a governance mechanism, as contractual clauses cannot address all uncertainties (Yang, Wacker, & Sheu, 2012). Likewise, Handley and Benton (2009, ss. 344-361) pointed out that legal contracts cannot safeguard against or deal with all uncertainties; they concluded that companies must not rely solely on contractual clauses. Due to the rapid development of e-commerce, transaction uncertainty is entirely unanticipated. A certain frequency of transactions between an e-commerce business and a logistics company cannot be expected consistently. Supervising or bargaining costs increase significantly as a result of contractual clauses. The higher the transaction uncertainty, the higher the transaction costs will be. Therefore, transactions in e-commerce have high levels of uncertainty in e-commerce with respect to logistics.

**Proposition 3. E-commerce companies should choose self-built logistics in order to reduce transaction uncertainty in distribution process.**

#### 2.3.4 Governance mode between e-commerce and logistics

Ivanaj (2006, ss. 13-16) used the key TCE attributes and verified which types of logistics accompany the decision to outsource. She proposed that the decision to pursue logistics outsourcing would be made for logistics with a low asset specificity, low transaction frequency, and low transaction uncertainty. However, various environments of the key TCE attributes should be taken into account when choosing a governance mode. The specific governance mode should be used for logistics services in e-commerce. It expects to have a high specificity, a high frequency, and high uncertainty of the transaction in e-commerce with respect to logistics. Transactions with high asset specificity, high frequency and high uncertainty must be governed internally by the organization in terms of transaction costs. Accordingly, the willingness to pursue logistics outsourcing is lower for e-commerce companies. E-commerce companies will typically carry out logistics services in-house. Based on the key concepts of transaction cost economics, self-built logistics systems are expected to be used by e-commerce companies on large scales. Through their self-built logistics and personal information systems, e-commerce companies can reduce the transaction costs as self-built logistics can promote operating efficiency for e-commerce companies to a large extent.

**Proposition 4. E-commerce companies should choose hierarchical mode for logistics distribution system.**

## 3 Methodology

This Chapter is divided into five parts: the research approach, research strategy, data collection, data analysis and research quality.

### 3.1 Research approach

Choosing the appropriate approach is quite an important step of any study. According to Bryman (2012), there are two main approaches for scientific research, namely qualitative and quantitative research. Qualitative research refers to “words” and is used when a researcher seeks to determine the content of a phenomenon. Quantitative research relates to “numbers” and is used when a researcher seeks to determine how often a phenomenon occurs (Jacobsen, 2015).

In this study, the empirical data of the research concerns Taobao Mall and Jingdong Mall’s different logistics system choices. The qualitative approach allows researchers to compare or find the similarities and differences through interview, observation, document analysis and case study (Yin, 2009). In order to get a more detailed and deeper understanding of the two companies’ situations, qualitative research is the chosen approach. Compared to quantitative research, qualitative research is more suitable to answer the research question of this study.

### 3.2 Research strategy

#### 3.2.1 Case study

In this study, typical cases were used as research material. For a case study, the research design is “the blue print” of the case study (Yin, 2003), as it describes how to conduct the research project. The framework of the research design specifies the method of research. Additionally, it outlines the procedures of how to collect and analyse the desired data and can control the study progress (Bryman, 2012). To complete an effective and efficient study, a good research design is essential.

There are five prominent research designs: experimental design, cross-sectional design, longitudinal design, case study design and comparative design (Bryman, 2012). According to Yin (2009), the case study design is implemented to answer the “how” and “why” questions in the case of contemporary events and where the investigator

cannot control the situation. “A case study is an empirical experience inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident” (Yin, 2009, s. 18). Therefore, the case study has been adopted for this study. The case study design can be further classified into three types (Gripsrud, Olsson, & Silkoset, 2010; Yin, 2009): the exploratory case study, with the objective of forming a new theory; the descriptive case study, which emphasizes the description of the case story and events; and the explanatory case study which focuses on the theoretical examination. In this study, the explanatory case study type is adopted. Two selected cases are compared. This comparative strategy enables an examination of similarities and differences between the two.

### 3.3.2 Case selection

The main purpose of this case study research is to provide an understanding of why two similar e-commerce companies have chosen different logistics distribution systems. Two companies were chosen as cases. According to Yin (2009), the case selection step is crucial. The reason for this step is that the research must restrict external change, and strengthen the internal validity. The selection of the two companies as cases in this research method was not normal. The selection of cases was without statistical reasons. In other words, the selection of the cases had to be representative and typical, thus apparently different from the sampling method.

This study chose Jingdong Mall and Taobao Mall as the research cases. Jingdong Mall represented the model of a self-built logistics distribution system, whereas Taobao Mall represented the model of an outsourced logistics distribution system.

**Self-built logistics:** Self-built logistics is for e-commerce companies with large volumes and efficiencies (Goh & Gan, 2011). Jingdong Mall suffered serious logistics bottlenecks from relying on 3PL centers and delivery teams many years ago (Liu, 2014). In order to solve this problem, Jingdong Mall used its own distribution logistics system for many years. At present, Jingdong Mall is one of the few e-commerce companies utilizing self-built logistics. Furthermore, Jingdong Mall is one of the largest and the most influential e-commerce companies in China.

Outsourced logistics: Outsourcing to 3PL providers is done by most e-commerce companies with a lack of scale and capabilities (Goh & Gan, 2011). Taobao Mall is owned by the Alibaba group and is China's leader in e-commerce with huge sales volumes and adequate capabilities to build its own logistics distribution system. However, Taobao Mall still outsources its logistics services to 3PL companies. Therefore, it is interesting to determine why Taobao Mall has not utilized its enormous competitive advantage to build up its own logistics distribution system. Taobao Mall is currently the largest and most influential e-commerce company in China.

Jingdong Mall and Taobao Mall were chosen because they are the largest e-commerce companies representing self-built and outsourced logistics distribution systems, respectively, in China. They also have the capability to build up their own logistics distribution system, but they choose different types of logistics distribution system. The problems emerging for these two companies using each of the logistics models are the most typical in that industry. They, therefore, are good representative cases to study and from which to obtain valuable information. These are the main reasons based on a logical analysis of this thesis. Only two e-commerce companies were chosen as the research subjects in order to get a deeper and more detailed study of the cases with the limited time and money available.

### **3.3 Data collection**

Qualitative data collection often uses participant observation, in-depth interviews, group interviews, documents and archives. How the data collection took place is presented in this subsection. Data were collected from both primary source and secondary source. Primary data were collected through semi-structured interview with relevant individuals from the selected companies. Secondary data were collected by second-hand interview reports of CEOs. The secondary data are important for this study as having only semi-structured interviews would not be adequate for effective research. The interview reports of the CEOs from Taobao Mall and Jingdong Mall were quite valuable and necessary to establish a more detailed understanding of the companies.

### 3.3.1 Primary data

Primary data are data that personally obtained by researchers and data followed by purpose from researchers (Bryman & Bell, 2003). Primary data can be collected through interviews, direct observation, surveys, etc. In qualitative research, the two main types of interviews are the unstructured interviews and the semi-structured interviews (Bryman, 2012). A semi-structured interview means the interviewers have prepared some open-ended questions ahead of time. The reason why semi-structured questions are often chosen over an unstructured interview is because it can be difficult to get effective and useful interview data if the respondents are allowed to express their views freely. If the interviewer can point out certain open-ended questions and a general answering direction, the relevant value of the interviewee's answers tends to be much higher. Furthermore, the answers of the semi-structured questions are easier to analyse and understand. Accordingly, this study adopted semi-structured interviews as the primary data collected method. The semi-structured interview was conducted via telephone with the interviewees rather than face-to-face, due to geographical and time constraints. The open-ended questions used in this study are listed in appendix 1. Furthermore, the selection of interviewees is also an important step in a well-designed research study. As for the respondents, the employees in the strategic leadership department were interviewed because self-built logistics or outsourced logistics are both perceived as strategic activities for companies (Langer, 2013, ss. 80-82; Stock, Kasarda, & Greis, 1998). The description of the interviewees is presented in Table 1.

**Table 1: Interview responses**

<b>Company</b>	<b>Respondent</b>	<b>Department</b>	<b>Work experience</b>	<b>Duration (Minutes)</b>
Jingdong Mall	Mr Zhang	Strategic leadership	3 years	85
Taobao Mall	Mr Li	Strategic leadership	5 years	90



### 3.3.2 Secondary data

Secondary data are data obtained by third parties other than the researchers and data followed by purpose from third party (Bryman & Bell, 2003). Secondary data are easier and less expensive to obtain. In this study, the basic introduction and descriptions of the two cases can be regarded as background information for the specific cases. The existence of this background information is helpful in understanding the context of the whole case. Moreover, the interview reports of the CEOs are used in the study. All of these interviews of the leaders are considered secondary data. The reason why these interviews must be secondary is that it is nearly impossible to interview CEOs in person. Therefore, using the secondary data of the CEO's remarks about their companies' logistics distribution systems became the best choice. Furthermore, the CEOs are also the founders of these two companies. They have the deepest understanding of the entire development of their companies. On account of the popularity and fame of these companies, many scholars and reporters had already conducted numerous interviews with the CEOs. These second-hand interview reports are highly valuable and can contribute to the present study.

## 3.4 Data analysis

After the data was collected, an analysis was conducted. This analysis section consists of within-case and cross-case approaches. The within-case approach was used to analyse these two cases in detail. This study has two comparable cases. Thus, cross-analysis is suitable to use. The within-case and cross-case approaches were adopted simultaneously in order to get a better analysis result.

### 3.4.1 Within-Case Analysis

*“For case study analysis, one of the most desirable techniques is to use a pattern-matching logic.”* (Yin, 2009, s. 136) The structure of the within-case analysis was constructed based on the key concepts of transaction cost theory. Several variables such as asset specificity, transaction frequency, and transaction uncertainty, all of which have an influence on governance mode, were used to analyse the collected case data. Taobao Mall and Jingdong Mall's respective logistic distribution systems were analyzed one by one. By comparing the theoretical pattern of transaction cost economics with the pattern of the collected data, important information was uncovered.

### 3.4.2 Cross-case Analysis

After the within-case analysis, a table was made to present the findings from the two cases in response to the key concepts of transaction cost theory which contributed to the next step of the analysis.

As stated by Yin (2009), similarities and differences play an important role in drawing conclusions between cases. In this study, by comparing the findings from the cases, the similarities and differences between Taobao Mall and Jingdong Mall with respect to each of the logistics distribution system could be shown. At the same time, it was possible to determine something more important than what the transaction cost economics suggests, a fact that may drive one of the companies to choose a different logistics distribution system.

### 3.5 Research Quality

Trustworthiness and authenticity are alternative criteria in establishing and assessing the quality of research for a qualitative researcher rather than reliability and validity. (Bryman, 2012; Guba & Lincoln, 1994). Concerning trustworthiness and authenticity, the authenticity criteria are not influential, and their emphasis on the wider impact of research remains controversial (Bryman, 2012). Therefore, this study was based on the trustworthiness criteria. Trustworthiness is composed of four criteria: credibility, transferability, dependability and conformability (Bryman, 2012).

- 1) Credibility: There are two different types of techniques - respondent validation and triangulation. Respondent validation means *“a process whereby a researcher provides the people on whom he or she has conducted research with an account of his or her findings.”* Triangulation *“entails using more than one method or source of data in the study of social phenomena”* (Bryman, 2012, s. 390)
- 2) Transferability: According to Lincoln and Guba (1994), *“a thick description provides others with what they refer to as a database for making judgements about the possible transferability of findings to other milieux.”* (Bryman, 2012, s. 392)
- 3) Dependability: Lincoln and Guba (1994) stated that researchers should adopt an “auditing” approach which entails ensuring that complete records are kept of all

phases of the research process including problem formulation, selection of research, interview transcripts and data analysis, in an accessible manner.

- 4) Conformability: it should be apparent that the researcher has not overtly allowed personal values to sway the conduct of research and the findings deriving from it (Bryman, 2012).

Jingdong Mall and Taobao Mall were the two most representative cases chosen to improve the validity and relevance of the study. Furthermore, both primary and secondary data were adopted. The secondary data concerning the CEOs of Taobao Mall and Jingdong Mall came from second-hand interview reports. The second-hand interviews were conducted by professional reporters and scholars. These interviews were also reported on well-known websites and established newspapers suggesting their quality and credibility. As for the semi-structured interview, the employees in strategic leadership within the two companies were interviewed with semi-structured questions. The reasoning behind this was that they were direct participants in formulating the companies' strategies, their responses were more useful; objective; and possessing of referential value. Therefore, they were qualified to answer the questions directly concerning their work and provided the useful feedback information. All of the answers were documented in the original words of the respondents. In order to guarantee the dependability of the semi-structured interviews, transcripts of these interviews were made and sent to the respondents. Throughout this process, it was found that some points that had been initially misunderstood were then corrected by the respondents. The contents of the semi-structured interviews were recorded and later translated into English. However, due to the case number limitation, the degree of transferability is relatively low. Overall, the basic trustworthiness of this study was achieved.

## 4 Empirical findings

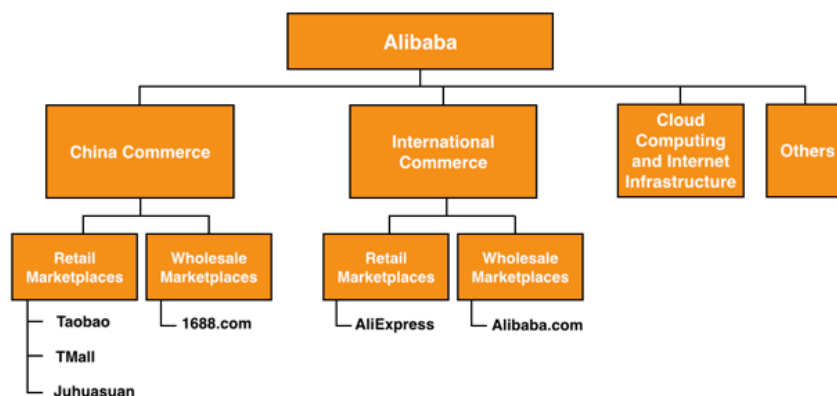
This chapter will focus on two Chinese e-commerce companies, Taobao Mall and Jingdong Mall, in order to find some empirical evidence to support the analysis in the next chapter. These empirical data mainly include: case background and introduction, the operational information of these two companies' logistics distribution systems, semi-structured interviews with relevant individuals and second-hand interview reports related to the CEOs of these two companies: Ma Yun (Jack Ma) and Liu Qiangdong, concerning the logistics of the two companies.

### 4.1 Taobao mall

This section discusses the corresponding empirical data from Taobao Mall.

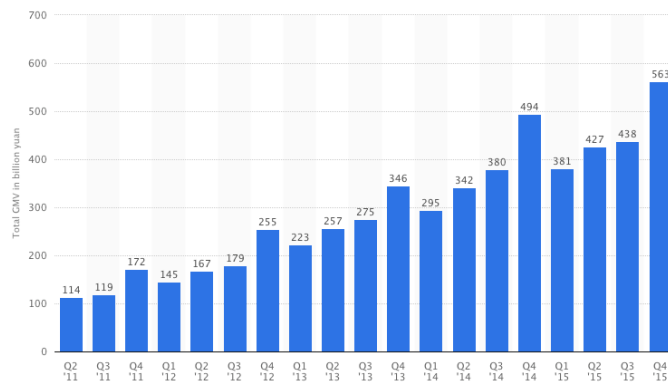
#### 4.1.1 Introduction and Background of Taobao Mall

Taobao Mall is a mall established by Alibaba group on May 10, 2003 in Hangzhou, China, and is a comprehensive online shopping platform. The founder is Ma Yun (Jack Ma). Alibaba's business operating segments are shown in Figure 3. At present, Taobao Mall is the largest website shopping platform in Asia (Wikipedia, 2016a). As of March 2015, Alibaba Group had 34,985 employees in China (Statistia, 2016). Taobao Mall's gross merchandise volume (GMV) from 2011 to 2015 is presented in Figure 4. In addition, Taobao Mall made 91.2 billion Yuan (\$14.3 billion) on Single's Day in 2015 (Berke, 2015).



**Figure 3. Alibaba's Business Operating Segments**

Source: Adopted from Jitender Miglani (2015)



**Figure 4. Taobao Mall's GMV from 2011 to 2015 (in billion Yuan)**

*Source: Data are derived from Taobao Mall's gross merchandise volume from 2nd quarter 2012 to 4th quarter 2015 (in billion Yuan) by Statista.com, 2016. Copyright 2016 by Statista.com, 2016*

#### **4.1.2 Outsourced logistics distribution system of Taobao Mall**

The logistics distribution model of Taobao is one that collaborates with professional 3PL companies. Taobao Mall chose logistics companies that were willing to collaborate with them. Alibaba signed a strategic cooperation framework agreement with the 3PL companies, and they established a long-term strategic and cooperative partnership in e-commerce information flow, funds flow, logistics flow, etc. (Nan, 2010). Once the customers had already bought goods in the shop, the thoroughly independent 3PL company used their own logistics system to deliver the goods to the hands of the consumers. In regards to how the logistics company dealt with the parcel, the marketers were unaware of the previous internal process. At present, the marketers and consumers can examine the logistics tracking information online. Although the whole logistics process became transparent, Taobao Mall and the tens of thousands of marketers that set up stores on this platform still could not control and manage the specific distribution process (Hu, 2016). In other words, the service quality was totally controlled by the 3PL Company and the role of Taobao Mall undertook was to supply an online shop for the marketers. In order to target consumer demands for the Taobao Mall's logistics distribution system, the 3PL companies conducted a series of classification, coding, arrangement, shipments, etc. Then, they delivered the goods to the consumers by the appointed time and place (Yang, 2011). The main business of Taobao Mall is online retail. The logistics model of Taobao Mall was connected to the transaction platform, the 3PL Company, the seller and the purchaser. In this industrial chain, logistics flow,

information flow, commercial flow and fund flow combined together to complete the full industrial chain and achieve its value (Yang, 2011).

#### **4.1.3 Interview report for the CEO of Taobao Mall**

World-famous entrepreneur Jack Ma, the CEO of Taobao Mall, often talked about his perspectives concerning Taobao Mall's logistics system. Taobao Mall did not build its own logistics distribution system, but this did not mean Taobao did not give importance to it. The first reason why he did not establish the self-built logistics distribution systems is that he wanted Taobao to concentrate on its own core business and not stretch the limited resources to undertake the necessary logistics processes. Taobao Mall's logistics distribution system was a kind of third-party logistics distribution system. Jack also stated that Taobao Mall provided overall and detailed data concerning the logistics company regarding its operation scale, network layout, information and the logistics service cost. In this way, Taobao Mall was able to invest all of its resources on the construction and development of the e-commerce operation and shape its core competence. Jack was not willing to establish his own logistics company, as he wanted to focus on the core business. From another perspective, logistics service was not Taobao's strength. If the company spent a lot of money and resources to become competitive in an industrial segment where it was weak, the probability of failure would have increased significantly. (Niu, 2013; Zhao, 2008)

The next reason why Jack did not want to establish Taobao's own logistics distributional system was that he had already missed the optimal time to do so. As far as Jack was concerned, the beginning of Taobao's development would have been the best time to establish the company's own logistics system and Taobao initially just wanted to focus on its e-commerce platform. Furthermore, at that time, the market environment of e-commerce was immature and there were still many problems that needed good solutions. Moreover, the logistics market's competition was not fierce. Therefore, that was the best time to establish Taobao's own logistics system. Jack did not have enough insight regarding e-commerce and logistics and no one predicted the prosperous situation of the current market, including Jack Ma. Thus, missing those past advantageous opportunities was the reason why Taobao did not pursue its own in-house logistics distribution system. Also, Taobao wanted a much closer collaboration with the logistics companies. After several years of development, the relationship between

Taobao and its logistics companies became closer and closer. In the process, Taobao even invested in some logistics companies, but never participated directly in the logistics industry. Over time, the growth of Taobao facilitated the development of express delivery within the country, and the development of the logistics facilitated the development of Taobao itself. Therefore, if Taobao established its own logistics system, the interests of the 3PL companies would have been undoubtedly affected. Taobao did not have the ability to establish an in-house logistics system, and more importantly, it could not abandon the support of the 3PL companies. From the time Taobao Mall was created up to the present, Taobao has been the largest e-commerce company in China and it has always needed the support of 3PL companies. Taobao Mall developed faster than expected, and as a result, needed more support from 3PL companies. Had Taobao built its own logistics distribution system during its early development, it is likely that it would not have become the e-commerce leader in China (Ma, 2010; Hua, 2009; Ma, 2015).

There has been a mutually beneficial relationship in the development of Taobao Mall and the Chinese logistics industry. The development of Taobao Mall has promoted the development of the Chinese logistics industry. In turn, the development of the Chinese logistics industry also contributed to the development of Taobao. (Chen W. , 2015)

Jack Ma thought that the logistics service was an extraordinarily professional business and was not as easy as express delivery. The real logistics still included the warehousing, logistics information system, and many other business elements. It was a complex endeavor, so taking on that responsibility would have required a great deal of confidence on the part of Jack Ma. Only major risk-takers would do that and Jack Ma was not a risk taker as a leader. As a result, he did not attempt to build his own logistics system.

#### **4.1.4 Semi- Structured interview for Taobao Mall**

An employee of the strategic leadership department was interviewed with semi-structured questions. The reply was as follows:

Regarding why Taobao chose to cooperate with 3PL companies, Mr. Li thought that the logistics service was a rather professional service. Taobao was a professional e-commerce platform and it had displayed excellent performance in the e-commerce field. However, the company realized that it was not an excellent source for the logistics business. Mr. Li thought that undertaking unfamiliar work was not a wise decision, as it might have resulted in failure. Thus, he thought that cooperating with the logistics companies was the best choice. According to Li, Taobao Mall contracts the services of 3PL companies in performing the following tasks: 1) the construction of distribution centers and warehouses; 2) the employment of logistics talent; 3) the provision of transportation tools; 4) the facilitation of the distribution network; and 5) other specific or alternative logistics services and etc. These are businesses which are dealt with by Taobao Mall 's professional 3PL companies, and they are logistic services that are essential for Taobao Mall. However, there is also the need to synchronize information interaction. To address this need, Li emphasized how Taobao Mall provides the information important for 3PL companies to perform their logistic services efficiently. By outsourcing its logistics needs, Taobao Mall does not have to invest its own resources into the logistics field. The expertise of those professional 3PL companies is rich and the operating scale is large. Taobao cooperates with them by a set of contract clauses.

In terms of why Taobao Mall did not choose to build its own logistics distribution system, he thought that a self-built logistics service was not the core business of the Taobao Mall. Furthermore, establishing a self-built logistics system would have required enormous costs. The chosen 3PL companies were much more professional than Taobao. In addition, after so many years of cooperation, Taobao Mall had already established a close relationship with the logistics companies. Nine large professional logistics companies arranged dedicated services just for Taobao. In terms of implementing corporate strategies, Taobao invested some warehouse lands based on its strategies. However, these investments were just one part of the entire industrial chain of the company. Furthermore, all of these investments in logistics were provided to other professional logistics companies to use. This is only in the form of supporting 3PL logistics cooperation. In summary, Taobao only participated in logistics in the form of collaboration with 3PL companies.



Regarding how the present logistics system influences the company's performance, Mr. Li presented a number of perspectives and descriptions. In the past, there were often delays on delivery, goods were damaged, and poor service resulted, which led to a high rate of complaints. Nowadays, even though some of these problems occasionally occur, the probability is significantly lower than that in the past. According to his experience, the current logistics system was a double-edged sword in terms of performance. As for the positive impact it had on performance, it allowed Taobao to achieve an incredible sales volume. For example, on Chinese Single's Day, the company's sales volume was over 90 billion Yuan, which was the undeniable leader for all e-commerce companies in China. Throughout the whole process, it was the deep collaboration with 3PL companies that resulted in such astounding numbers. Without the deep collaboration with these professional companies, it would have been impossible for Taobao to achieve such an impressive amount of sales. These impressive sales are the best embodiment of the deep cooperation between Taobao Mall and its professional 3PL companies.

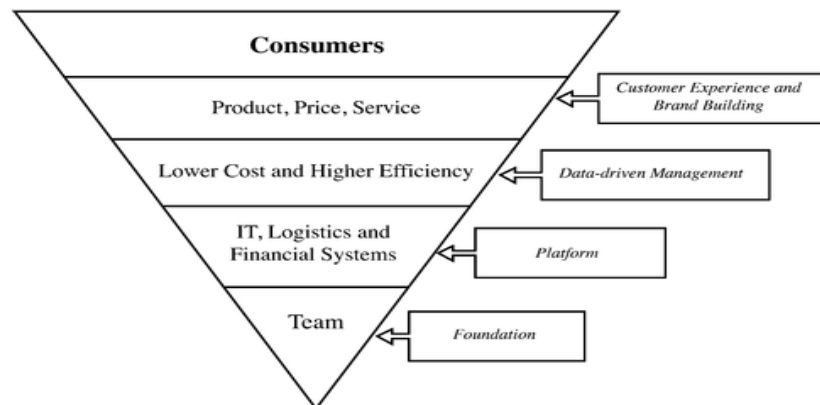
## **4.2 Jingdong Mall**

This section is about the corresponding empirical data from Jingdong Mall.

### **4.2.1 Introduction of Jingdong Mall**

Liu Qiangdong established Jingdong Mall in Beijing, China in 2004 and it remains one of the largest e-commerce companies in China. As of September 2015, Jingdong Mall had a total of 94,615 employees (Wikipedia, 2016b). The number of Logistics employees was about 60,000 (Owen, 2016). Its market-occupying rate was over 50% in the B2C market of China. It was also the first Chinese e-commerce company listed in the USA. In 2007, Jingdong Mall began to establish an in-house logistics distribution system and gradually expanded its scale (Wikipedia, 2016b). In 2007, Jingdong Mall's operating revenue was approximately 0.5 billion Yuan (\$80 million) (Owen, 2016). In 2015, Jingdong Mall's gross merchandise volume (GMV) was 462.7 billion Yuan (\$74 billion) and its net income amounted to 181.3 billion Yuan (\$29 billion) (Chinadaily, 2016). In addition, the sales turnover of Jingdong Mall was 40 billion Yuan (\$6.4 billion) on Single's Day in 2015 (Zhuang, 2015). Recently, Jingdong Mall declared that it was struggling to supervise its C2C business and its small-scale C2C platform was closed

on April 1, 2015 (He, 2015). Jingdong Mall's core philosophy to always put customers as their top priority (2014) is illustrated by Figure 5.



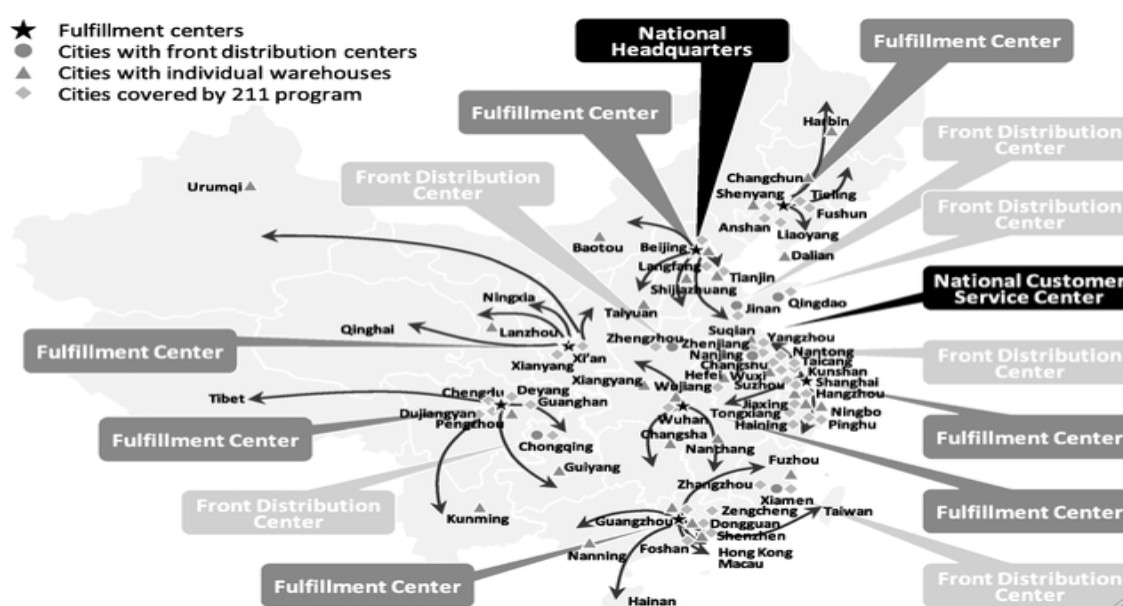
- Our team is the foundation of our company. We have built a strong and dedicated team and made significant efforts in hiring, training and retaining our workforce.
- To support our anticipated growth, we have developed a platform of comprehensive IT, logistics and financial systems to manage our flow of products, services, information and finances.
- Our data-driven management employs an array of key performance indicators to minimize costs and maximize efficiency in our operations.
- As a result, we are able to offer a broad selection of authentic products at competitive prices with comprehensive services. We strive to create a compelling online shopping experience that generates customer loyalty.

**Figure 5. Jingdong Mall' core philosophy**

Source: *Data is derived from Chinese Direct-Sales Company JD.com (JD) Sees IPO Price of \$16 - \$18/ADS by StreeInsider.com, 2014. Copyright 2014 by StreeInsider.com, 2014*

#### 4.2.2 Self-built logistics distribution system of Jingdong Mall

Jingdong Mall began to construct its own self-built logistics distribution system in 2007, and in 2009, it set up its own professional logistics company (Lu, 2015). Jingdong Mall's logistics distribution system covered the whole country and continued to grow larger and larger. Jingdong Mall established its own six logistics centers. In 2010, the Eastern China warehousing logistics center was constructed and undertook more than half of the entire distribution for Jingdong (Wikipedia, 2016b). With the development of its logistics system, Jingdong Mall developed the "211 time limit" business and improved its logistics speed (Baidu, 2016b). Figure 6 presents Jingdong Mall's nationwide logistics and delivery network.



**Figure 6. Nationwide logistics and delivery network**

Source: Data is derived from Chinese Direct-Sales Company JD.com (JD) Sees IPO Price of \$16 - \$18/ADS by StreeInsider.com, 2014. Copyright 2014 by StreeInsider.com, 2014

#### 4.2.3 Interview report for the CEO of Jingdong Mall

During interviews with the CEO of Jingdong Mall, Liu Qiangdong, he mentioned many features of Jingdong Mall. In his opinion, the first reason why Jingdong Mall chose a self-built logistics distribution system was that this type of logistics system definitely had some advantages. The self-built logistics system was advantageous in terms of decreasing the social transaction costs and increasing the logistics service quality. This decrease in the social transaction cost is an indirect way to be profitable in the e-commerce industry. In comparison to traditional business, e-commerce broke through the district restrictions and expanded its reach throughout the world. However, China still lacked professional 3PL companies that covered the whole country. Most e-commerce companies cooperated with small-scale and localized logistics companies. Hence, the logistics cost was high and the service quality was bad. A self-built logistics company was able to resolve this problem. Jingdong Mall's CEO emphasized that self-built logistics could reduce social transaction costs and enhance the efficiency of social transaction. The next advantage of this logistics system was that it sped up the capital turnover. At present, notwithstanding online payments, such as Alipay, online banking has permeated into global life, but there were still some users who insisted on using

payment on delivery at the start of Jingdong's rise. Payment on delivery meant that the distribution employee of the 3PL company would collect the money for goods and, as a result the returned money cycle was longer. However, if the company set up its own logistics system, the fund turnover ratio would be faster, as the distribution people were the company's own employees. Liu thought that this would strengthen the company's control over the goods. If the company chose third-party logistics systems, then it would have been very difficult for the e-commerce company to know about the newest logistics situations and developments. Self-built logistics made it more convenient for Jingdong Mall to know the specific details of the goods distribution and enhance distribution efficiency. The second main reason was that logistics service was going to become the competitive focus of the modern e-commerce industry, in Liu's opinion. Any company that failed in this domain would face greater failure in the fierce competition of the e-commerce market. It was not enough to use low prices to attract customers; the logistics service was also extremely important in attracting customers. Based on the importance of the logistics service, Jingdong chose to build its own logistics system (Liu, 2013; Liu, 2014; Li, 2015; Liu, 2014).

From Liu's interview report it appeared that he loved taking risks. There was no doubt that the self-built logistics system had some risks although it also had certain advantages at the same time. Different from Jack Ma's approach with Taobao Mall, Jingdong Mall's Liu preferred large risks and did not fear failure in the same way. By virtue of this kind of bravery in psychology, Liu dared to build Jingdong Mall's own logistics system.

#### **4.2.4 Semi-structured interview for Jingdong Mall**

An employee from the strategic leadership department of Jingdong Mall was interviewed with semi-structured questions and his answers are summarized as follows.

Regarding why Jingdong Mall chose to build its own logistics distribution system, Mr. Zhang replied that by providing faster and better service for customers, a good brand image would naturally be established. Mr. Zhang said that logistics distribution system is essential to good logistics service and cost-saving. For Jingdong Mall, finding ways to save cost is important due to the huge financial pressure of a self-built logistics.

According to Mr. Zhang, delivery speed is an important factor for better logistics service, and is closely related to the distribution network. Jingdong Mall's distribution network consists of a large number of associates. These associates include distribution centers, warehouses, sorting centers, etc. Jingdong Mall's distribution network is essential to a fast delivery. The location of distribution associates was selected through (BDA) big data analytics (IBM, 2012; SAS, 2016) of Jingdong Mall. The distribution network of Jingdong Mall contributed not only to fast delivery, but also to the savings of delivery cost.

Every company has its specific logistics information system. In the case of Jingdong Mall, logistics information system plays an important role in a self-built logistics. Thus, Jingdong Mall contracted a professional software company to develop its logistics information system. Logistics information system optimizes the logistics distribution network. Moreover, the logistic information system helps solve the problem of information asymmetry within the company. Accordingly, Jingdong Mall cultivated a large amount of professional logistics talents to operate its own logistics information system but its logistics talents were still not enough.

Logistics service is often the bottleneck for the development of e-commerce. Poor service from 3PL companies sometimes has negative impacts on the entire e-commerce service. This remains an obvious disadvantage of outsourced logistics. Therefore, in order to prevent the service from Jingdong Mall being affected by outsourcing the logistics tasks, it chose to establish its own logistics systems. In this way, the services of both e-commerce and logistics were completely controlled by Jingdong, and Jingdong had enough confidence to establish a good image in the minds of its customers. Zhang also mentioned that Liu still received many objections when he expressed his decision to have a self-built logistic system for Jingdong Mall. Though there are many advantages that come with a self-built logistics, people from within the Jingdong Mall thought that it also came with huge risks for Jingdong.

Concerning why Jingdong Mall did not choose to cooperate with third-party companies, Mr. Wang explained that Jingdong Mall was not satisfied with the services provided by those 3PL companies, so he did not want to cooperate with any of them. In order to improve the customer's experience continuously and deliver goods that were not

damaged, Jingdong chose to establish its own logistics system. Due to poor service quality from those 3PL companies, customers were rather dissatisfied with them. Furthermore, the dissatisfaction of customers aroused negative feelings about Jingdong Mall, and the company did not want to be affected by any logistics companies that provided poor services.

In addition, due to the rapid development of e-commerce, the price had already been quite transparent. The price difference between different e-commerce companies was not large. In fact, there were some companies that even used a price-match strategy to eliminate the price difference or reduce prices to be the same as other e-commerce companies if a customer found lower prices from another e-commerce company. The price war did not end until e-commerce companies had few profits. In other words, price was no longer an important competitive point; service was the new point of competition. The logistics service was a vital aspect overall, so Jingdong Mall chose not to cooperate with other 3PL companies. Instead, they chose a self-built logistics service to enhance their overall service quality. Moreover, the largest competitive strength of the Jingdong Mall was its fast delivery. Mr. Zhang points out that the fast delivery service was essential to the corporate image of the Jingdong Mall and the company did not want this positive corporate image to be destroyed by a third party company.

Concerning how the current logistics system influenced Jingdong's performance, Mr. Zhang answered that, thus far, Jingdong Mall's overall performance was generally good. One of the most important reasons for that good performance of the company was the reliable and fast logistics service. However, it was very hard to guarantee that Jingdong Mall would continue to have the same level of performance in the future. Based on the company's development trend, it was quite probable that Jingdong Mall's logistics service would continue to provide a boost for overall performance. Also, the self-built logistics system of Jingdong Mall still impacted the brand's publicity. The customer would continue to be satisfied by the service from Jingdong Mall, which remains an important factor leading to the rapid development and growth of Jingdong Mall. The self-built logistics system has made Jingdong Mall more influential and helped it gain more market share in the fierce competition of the e-commerce market.

## 5 Analysis

This Chapter will analyze the empirical data presented in the last chapter. It will simultaneously use within-case analysis and cross-case analyses in order to get a better analysis result.

### 5.1 within-case analysis

Based on the key concept of transaction cost theory, Jingdong and Taobao Mall were analyzed, respectively.

#### 5.1.1 Jingdong Mall

##### 1) Asset specificity

Asset specificity is the most important variable in transaction cost theory and one of the key reasons why Jingdong Mall chose a self-built logistics system.

Location selection of distribution centers, warehouses, and other company properties is based on Jingdong Mall' big data to construct. This big data was analyzed for Jingdong Mall, and the company's logistics distribution system was accordingly found to be most suitable. Therefore, the suitable or most efficient location saves logistics costs. The distribution center, warehouses, etc. of Jingdong Mall are inefficient if used for other purposes. They are transaction-specific investments for Jingdong Mall.

The physical assets of logistics, such as the goods van and other transportation tools, also have a significant influence on logistics costs. They cannot be easily sold to other companies once the companies no longer need them, as the rate of depreciation is rapid for most transportation tools. Thus, the value of the transportation tools is reduced. Therefore, transportation tools are specific logistics assets for e-commerce companies and have a significant influence on transaction costs.

The process knowledge of Jingdong Mall's logistics involves a distribution network, which consists of a distribution center, warehouses, sorting center, destination of goods, etc. Jingdong Mall arranges the shortest routes and delivers the goods to customers through its own distribution network. Accordingly, Jingdong Mall has specific transportation means and utilizes a specific combination of transportation methods.

Jingdong Mall used a professional software company to develop its own logistics information system. The logistics information system of Jingdong Mall is tailored according to its actual logistics situation and can satisfy Jingdong Mall's needs in many ways. As the Jingdong Mall grew, it was still lacking in logistic operations talent in warehouses, even though there were a significant number of employees. Logistics talents are transaction-specific for Jingdong Mall.

One of the purposes of a self-built logistics system is to improve the quality of logistics services for Jingdong Mall. Fast delivery and better service became a good brand image to Jingdong Mall. This logistics service provided by Jingdong Mall's self-built logistics is customized for Jingdong Mall, which plays a core roll in the growth of Jingdong.

Transaction-specific investments refer to the locations of the distribution center, warehouses, transportation tools, distribution network, logistics talent, and specific delivery services in e-commerce with respect to logistics. Accordingly, a logistics distribution system is a transaction-specific investment for e-commerce companies. Asset specificity can increase transaction costs. Logistics service is a specific service for e-commerce companies. It is consistent with what Liu said, namely, that self-built logistics could reduce transaction costs for Jingdong Mall. Therefore, Jingdong Mall chose an in-house logistics distribution system.

## **2) Transaction uncertainty**

Transaction uncertainty is caused by information asymmetry and human-bounded rationality. As a result of having self-built logistics, the transaction in the distribution process occurs within Jingdong Mall. Therefore, there is lower transaction uncertainty because the information flows within the company. The transaction costs arise from the internal management of Jingdong Mall. Reduction of information asymmetry leads to lower internal transaction cost through the logistics information system. Moreover, opportunism has not had a significant impact on transaction uncertainty due to interest community within the company. Therefore, transaction uncertainty is low. However, a self-built logistics system requires huge logistics employers to undertake. The number of logistics employees was about 60,000 in Jingdong Mall. And, as a result, the internal transaction cost increased. Jingdong Mall's C2C platform was closed in order to reduce management difficulty.



### **3) Transaction frequency**

In an e-commerce environment, transaction frequency is high. Jingdong Mall's transactions totaled 462.7 billion Yuan (\$74 billion) in 2015. Internal transaction frequency was definitely high in terms of the distribution process. As a result of self-built logistics, there were only internal transaction costs in the distribution process for Jingdong Mall. Those internal transaction costs are a type of management cost.

### **4) Governance mode**

Based on the above analysis, a logistics distribution system is transaction-specific for e-commerce companies. The transaction uncertainty is low because the transactions occur within the company. Although transaction frequency is high, the transaction costs can be reduced through effective management. Jingdong Mall can reduce its external transaction costs through self-built logistics. Self-built logistics will lead to lower external transaction costs, such as supervision costs, bargaining costs. Therefore, based on Jingdong Mall's real circumstances, the best choice is to adopt a self-built logistics system.

## **5.1.2 Taobao Mall**

### **1) Asset specificity**

3PL companies provide logistics services for non-logistics companies. Taobao Mall has established long-term cooperative relationships with 3PL companies for many years. Those professional 3PL companies have a large number of transaction-specific investments, such as the distribution center, logistics talent, distribution networks, etc. to serve Taobao Mall. These investments are specific to transactions between Taobao Mall and the professional 3PL companies. In this case, these professional 3PL companies are more dependent on Taobao Mall because transaction-specific investments would be difficult or less effective to transfer to other purposes. These asset investments were created specifically for the Taobao Mall account. Therefore, it makes the replacement cost far greater. This replacement cost is a type of transaction cost. The more the transaction-specific investments are worth, the higher the replacement costs for these 3PL companies. Accordingly, the opportunism from those 3PL companies has

not influenced the transaction cost, because the 3PL companies are dependent on Taobao Mall.

As for Taobao Mall, the same situation is true. Taobao Mall is also dependent on those 3PL companies, as they are the only companies that have the specialized logistics talent, distribution center, warehousing, etc. to serve Taobao Mall. It is impossible for Taobao Mall to find the same logistics service in the market, given that they have worked together for many years. This mutual need has become stronger and stronger. A bilateral dependency has formed gradually. The greater the bilateral dependency, the lower the transaction costs. After many years of deep cooperation between Taobao Mall and its 3PL providers, the transaction costs caused by information asymmetry have been reduced. According to transaction cost theory, higher asset specificity will lead to higher transaction costs, as it is hard to change the use of the specific assets. However, because of their mutual trust and bilateral dependency, Taobao Mall and its 3PL companies, have been strengthened. As a result, they are highly specified for each other, the higher the specificity, the lower the transaction costs for all parties involved.

## **2) Transaction Uncertainty**

Transaction uncertainty arises from human-bounded rationality and information asymmetry. Information asymmetry is low between Taobao Mall and its professional 3PL providers because they established a long-term strategic and cooperative partnership in e-commerce information flow. The uncertainties surrounding transactions between Taobao Mall and the professional 3PL companies are lower given the deep cooperation. In order to safeguard against transaction uncertainty and protect themselves, Taobao Mall and its 3PL providers implemented complex agreements at the beginning of the partnership. However, as mutual trust has increased, and transactions frequency becomes greater, the contract became simpler. The efficiency that was added will exert naturally for Taobao Mall and 3PL companies.

## **3) Transaction frequency**

In terms of the largest e-commerce companies in the market, Taobao Mall has the highest sales volume. The transaction frequency is very high in the distribution process. This leads to higher external transaction costs. The higher the transaction frequency, the higher the external transaction costs, such as supervision costs and bargaining costs.

#### 4) Governance mode

Due to Taobao Mall and its 3PL provider's deep cooperation for many years, the external transaction cost has become quite low. By virtue of this positive result, it is shown to be reasonable for Taobao Mall to adopt an outsourced logistics system.

### 5.2 Cross-case analysis

This section will compare the two companies to determine the similarities and differences. Table 2 presents the similarities and differences between Taobao Mall and Jingdong Mall based on the key concepts of transaction cost economics

	Transaction Cost Economics				Any other factors
	Asset specificity	Transaction frequency	Transaction uncertainty	Governance mode	Risk preference
Jingdong Mall (Self-built logistics)	High (Low transaction cost)	High (Higher internal transaction cost)	Low (Low transaction cost)	Hierarchical mode	High degree
Taobao Mall (Outsourced logistics)	Bilateral dependency (Low transaction cost)	High (Higher external transaction cost)	Low (Low transaction cost)	Market mode	Low degree

**Table 2. The similarities and differences between Taobao Mall and Jingdong Mall based on the key concepts of TCE**

Source: Made by Author

#### 5.2.1 Self-logistics and Outsourced logistics

There undoubtedly exist relevant transaction costs in the logistics distribution process. The logistics distribution process can be regarded as a transaction process. Transaction cost theory was applied to analyze self-built logistics and outsourced logistics distribution systems. For the search cost in the distribution process, the information transfer happened merely within the company for self-built logistics. However, the same thing happened between the two different companies for outsourced logistics. It

appears that the transaction costs of self-built logistics were lower. For the same reason, the information acquisition costs of self-built logistics were lower than the outsourced system. In terms of bargaining costs, self-built logistics happens in the different departments within the company and the departments are an interest community. Therefore, external transaction costs do not exist here. On the contrary, in the outsourced logistics distribution process, the transaction taker was another professional logistics company. Thus, bargaining costs in transactions did exist. As a result, the self-built logistics system won again. Moreover, concerning decision costs, only one party needed to make any decisions, namely the one with the logistics department in the self-built logistics distribution process. However, in the outsourced system, there were two decision-making parties. The company that needed this logistics service needed to make decisions on which professional logistics company to choose, and the logistics company needed to consider whether to accept the deal and the transaction price. Clearly, the decision cost in this transaction was higher with two decision-making parties. Thus, the decision costs of the self-built logistics system were lower than those in the outsourced system. As for supervision costs, supervision came from within the company using a self-built logistics distribution process. However, the company outsourcing its logistics service had to assign supervisors to monitor whether the professional logistics company fulfilled their responsibilities in accordance with the deal contract. There is no doubt that this cost will be greater in an outsourced logistics distribution process. Regarding default costs, the probability that an internal logistics department within a company would not abide by the transaction contract was much lower than the probability that an external logistics company would not abide by the contract. As a consequence, the default costs of the self-built logistics company were much lower than those for the outsourced one.

In terms of the internal transaction costs of the company, the self-built and outsourced logistics systems had different consequences. The internal transaction costs arose from the internal management of the company and were measurably different from the external transaction costs. For the self-built logistics distribution system, the logistics were part of the company's daily business. Therefore, corresponding management costs in this business did exist. Compared with the self-built logistics distribution system, the outsourced logistics definitely had less of a cost. The company that outsourced its logistics did not include logistics tasks in its daily operation, as the external professional

logistics company had taken over that role. Therefore, the internal management costs in the business that outsourced logistics was less than those of the self-built logistics company.

As shown in the table above, Jingdong Mall chose self-built logistics to reduce external transaction costs, given that logistics were highly specific for Jingdong Mall. Taobao Mall and its 3PL providers established a bilateral dependency. This situation led to lower transaction costs. Due to the high transaction frequency in the e-commerce environment, Jingdong Mall had large internal transaction costs, such as management costs in the distribution process, whereas Taobao Mall had external transaction costs, such as supervision and bargaining costs for the contract with the 3PL companies. In terms of transaction uncertainty, transactions occurred within the company for Jingdong Mall, and the transaction costs caused by transaction uncertainty were low. Transaction uncertainty between Taobao and its 3PL providers was also low due to mutual need, thereby lowering external transaction costs. Besides the variable factor of transaction frequency, asset specificity and transaction uncertainty did not significantly impact transaction costs for the two companies.

### 5.2.2 Jingdong Mall and Taobao Mall

**Proposition 1. A logistics distribution system is a transaction-specific investment for e-commerce companies.**

In the case of Jingdong Mall, there was some evidence to support Proposition 1. However, according to the second case of Taobao Mall, due to the presence of bilateral dependency and deep cooperation, Proposition 1 received only partial support from the two cases.

**Proposition 2. E-commerce companies should choose self-built logistics if high transaction frequency are expected in the distribution process.**

For Jingdong Mall, internal management costs increased as a result of higher transaction frequency in the distribution process. For Taobao Mall, the bargaining costs of contract modification also increased between Taobao Mall and its 3PL providers as a result of higher transaction frequency. Transaction costs increased regardless of whether e-commerce companies adopted the self-built logistics or outsourced logistics

model. Because transaction costs are difficult to measure, it cannot be concluded that e-commerce companies should choose self-built logistics based on transaction frequency. Therefore, Proposition 2 is not a valid proposition

**Proposition 3. E-commerce companies should choose self-built logistics in order to reduce transaction uncertainty in the distribution process.**

In the case of Jingdong Mall, there was low transaction uncertainty in the distribution process, because the logistics distribution system was managed by Jingdong Mall itself. Taobao Mall, on the other hand, cooperated with its 3PL companies by means of a contract. Contract modification and supervision costs increased overall transaction costs. However, due to the deep cooperation and bilateral dependency, transaction uncertainty became lower and lower. Therefore, transaction costs became lower, meaning that Proposition 3 is not a valid proposition.

**Proposition 4. E-commerce companies should choose the hierarchical mode for their logistics distribution system.**

Through the comparison of these two cases, it was seen that e-commerce companies do not need to choose the hierarchical mode for their logistics distribution system. Based on the key concept of TCE, due to relational adaptation, transaction costs are not significantly larger for the outsourced logistics system of Taobao Mall. Therefore Proposition 4 is questionable.

As seen by the propositions above, transaction cost theory does not explain why Taobao Mall chose an outsourced logistics distribution system. According to the previous chapter, from the viewpoint of Jack Ma, during the entire development process of Taobao Mall, it seemed that Taobao Mall had no chance to build its own logistics system. This was the result of many things, including e-commerce environmental issues, financial risk, and competition within the e-commerce logistics industry. Therefore, Taobao Mall wisely chose to cooperate with professional 3PL companies as a logistics strategy. Although Taobao Mall invested in a number of relevant logistics business, the company did not really involve itself with self-built logistics decision-making. If Taobao chose the self-built logistics strategy, it may have inevitably affected the interests of the 3PL companies. This would likely lead to the loss of the 3PL companies' support. As for Jingdong Mall, it was a relatively new and small e-commerce company

in 2007. However, Liu chose the self-built logistics strategy. The issues that Ma faced were mostly the same as Liu. Taobao Mall was bigger than Jingdong Mall at the time, which meant that Taobao Mall had more of an ability to build its own logistics distribution system. Even so, the CEO of Jingdong Mall still chose a self-built logistics distribution system, despite knowing that a self-built system would incur huge economic pressure and investment risk. In contrast, the CEO of Taobao Mall chose not to endure a huge risk by developing an in-house logistics distribution system. He refused to pursue something at which his company was not good. In short, the CEO of Jingdong Mall has a high degree of risk preference, while the CEO of Taobao Mall has a lower degree of risk preference.

## 6 Conclusion

Combining the research questions and objectives of this study, this chapter draws conclusions from the analysis of the previous chapter. Based on transaction cost theory and case studies of the two large e-commerce companies, the reasons why Jingdong Mall and Taobao Mall chose different logistics distribution system have been identified.

The two largest e-commerce companies both showed impressive performances with different governance modes in terms of logistics distribution systems. The key concept of transaction cost theory explained that Jingdong Mall chose a self-built logistics system in order to reduce its transaction costs. However, for Taobao Mall, the key concept of transaction cost theory could not explain why Taobao Mall chose an outsourced logistics distribution system. This study revealed that relational adaptation drove Taobao Mall to choose an outsourced logistics distribution system. This is similar to the previous findings of Yang et al. (2012), which suggested that relational adaptation makes outsourcing more effective. Furthermore, Taobao Mall also chose an outsourced logistics system before relational adaptation and bilateral dependency were established. From the analysis of empirical findings, it was found that different degrees of risk preference between the two CEOs had a significant impact on their choice of logistics distribution systems for their respective e-commerce companies. This is why Taobao Mall and Jingdong Mall, the two largest e-commerce companies, presently have two different logistics distribution systems.



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## Appendix 1

### Interview guide

#### Background information (Taobao Mall/ Jingdong Mall)

1. Name:
2. Education:
3. Job Position:
4. How long have you worked there?

#### Semi-structured interview of Jingdong Mall

1. Why did Jingdong Mall choose to build its own Logistics distribution system?
  - a) How does distribution center influence self-built logistics?
  - b) How does transportation tools influence self-built logistics?
  - c) How does distribution network influence self-built logistics?
  - d) How does logistics talent influence self-built logistics?
  - e) How are logistics services now?
2. What factors led to the decision?
3. Why didn't Jingdong Mall choose to cooperate with 3PL Company?
4. How does the selected logistics distribution system influence their performance now?
5. Do you think Jingdong Mall will still have logistics distribution system in house in the future? Why?

#### Semi-structured interview of Taobao Mall

1. Why did Taobao Mall choose to cooperate with 3PL Company?
  - a) How does distribution center influence outsourced logistics?
  - b) How does transportation tools influence outsourced logistics?
  - c) How does distribution network influence outsourced logistics?
  - d) How does logistics talent influence outsourced logistics?
  - e) How are logistics services now?
2. What factors led to the decision?
3. Why didn't Taobao Mall choose to build its own Logistics distribution system?
4. How does the selected logistics distribution system influence their performance now?
5. Do you think Taobao Mall will still choose outsource logistics distribution system in the future? Why?

## List of acronyms

TCE: Transaction cost economics

B2C: Business-to-Consumer

C2C: Consumer-to-Consumer

BDA: Big data analytics

3PL: Third Party Logistics