Fresh fruits and vegetables distribution system in China -
Analysis on the feasibility of Agricultural super-docking

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Title: Fresh fruits and vegetables distribution system in China - Analysis on the feasibility of Agricultural super-docking

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Background: Along with the rapid economic development in China, some associating problems emerged, such as inflation. Especially for the daily consuming fresh fruits and vegetables (FFV), the price goes up at very fast speed, which draws a lot of public attention on it. Farmers are discouraged and hurt by the low vegetable prices. However, end consumers are complaining about the high vegetable prices. A consensus is reached that the problem behind this phenomenon exists in the "distribution links".

Aim: How is the current status of FFV distribution system of supermarkets in China? What factors do influence the efficiency and cost of the system? How is the implementation of ASD in China and what are the advantages and barriers? Should it be implemented widely? If yes, what are our recommendations to improve it?

Definition: Agricultural super-docking is a new method of supply and distribution of fresh agricultural products from farmers to supermarkets directly, by signing an agreement of intent between farmers and merchants, in order to build an efficient platform for quality agricultural products to enter the supermarkets. The essence of ASD is to dock the thousands of small farmers and the different supermarkets to build an integrated production and marketing chain to gain benefit for merchants, farmers and consumers at the same time.

Completion and results: It is a complex task to improve the efficiency of FFV distribution system of supermarkets in China and there is a long way to go to implement ASD successfully and widely since this market is at the starting stage and immature. To implement ASD successfully and widely, professional FFV third-party distribution centers should be constructed, as well as exchanging information norm.

Five appropriate search terms: China, Supermarkets distribution, Fresh fruits and vegetables, Agricultural super-docking, Farmers' co-operatives.
Preface

On 1st May, 2011, "Yangzi Evening News" published a article named "Hard to earn money' said by farmers, vegetables transporters and sellers from Shouguang to Nanjing. At the beginning of the article, news was reported that a farmer named Jin Han suicide in his bedroom, facing the situation that his grown vegetables could not be sold on 16 April. This event show farmers are discouraged and hurt by the low vegetable prices. However, end consumers are complaining about the high vegetable prices. The phenomenon is paid close attention nationally as "vegetables are bargained away cheaply from farmers, but are sold with a much high prices to customers". According to the article, a consensus are reached that the problem behind this phenomenon exists in the "distribution links". The reporters tracked the process of vegetables from farmers in Shouguang to retailers in Nanjing. Shouguang, a small city in Shandong province, is one of the biggest vegetable planting and sales bases. The majority of "Foreign vegetables" are from this small city. To display the situation more visual, the picture below are presented to describe the common links of traditional distribution system.

As shown in the picture, "Yangzi Evening News" tracked the 4 stages. The first stage is from farmers, which is not shown in the picture, to farmers' co-operative. Prices for and corresponding costs at each stage will be presented according to the report. The price
will be presented just for one kind of vegetables.

In stage1, purchase price is 4.2Kr/kg for tomato. Labor costs are 2000Kr for 20 person to carry the vegetables on the truck. In stage2, transport cost is 4500Kr from Shouguang to Nanjing wholesale distribution market. Enter fee and booth fee of the market is 1800Kr in total. Besides those, there are some other fees related to the market, but it is difficult to calculate by each time. In stage3, the wholesale price of tomato is 4.4Kr/kg. In stage4 retail price of tomato is 5Kr/kg. Besides the costs presented above, some other costs are not presented because they are calculated monthly, seasonally or annually, instead of timely.
Acknowledgement

As the thesis is almost finished but not complete, we are willing to show our gratitude to all those kind people who ever helped us during the whole process of our study and research, because without their generous and continuous help, it's impossible for us to achieve this far of our thesis.

First and foremost, we have to thank our main supervisor, Åsa-Karin Engstrand, who tremendously provide our thesis with professional guide, precious of time and support. Especially her earnest and meticulous read and comments on so many versions of our thesis manuscript have been of immense value; use and help.

Also a great thank to our interviewee, Mr. Wang, who work in “Yonghui Supermarkets”. We are appreciated for his time and supports. Without him we couldn’t collect our comprehensive empirical information.

Last but not least, we are also so obliged to Peter Gustavsson ; Jörgen Ijung and Marie Bengtsson, for giving us a lot of instructions and suggestions about academic research and writing at the very the beginning. And these instructions as guides for navigation run throughout our thesis study.
Abstract

Along with the rapid economic development in China, some associating problems emerged, such as inflation. Especially for the daily consuming fresh fruits and vegetables (FFV), the price goes up at very fast speed, which draws a lot of public attention on it. And one main driving force of this is the inefficient distribution system of FFV among farmers, supermarkets, consumers and many others interlinks. Thus, Chinese government invented and encouraged a new distribution method: agricultural super-docking (ASD), which directly connect supermarkets and farm-cooperatives to cut down the excessive costs of FFV in the distribution. This thesis is aiming at through analyzing the problem of Chinese supermarket FFV distribution right now and results from interviewing some supermarket who has already implemented ASD, to conclude the barriers and recommendations of implementing ASD, and then judge the feasibility of ASD's application and expansion in Chinese supermarkets' business in the future.

Key words:
China, Supermarkets distribution, Fresh fruits and vegetables, Agricultural super-docking
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1. Introduction

1.1 Background

In China, there are two major markets where customers can buy fresh fruits and vegetables, and the relative smaller scale one called "street market". In the street markets, some local farmers sell their farming’s themselves, however, most sellers in this market are retail merchant, who are purchasing those fresh vegetables and fruits from famers or the local wholesaler. Comparatively, the other more popular agricultural products' market is supermarkets. And in our thesis paper, we will just focus on the distribution channel of fresh fruits and vegetables in Chinese supermarkets.

Traditionally, quality is the most concerned issue for the fresh agricultural products. The supermarkets emphasizing on quality is particularly noticeable to consumers in country contexts where official quality standards are low, not enforced or distrusted (García Martinez and Poole, 2004; Tan Loc, 2002). However, in the past recent years, the increasing price of agricultural products as a heating topic in China has been discussed by various groups of people, which include customers, media, governmental officials, and relating scholars. Until 2010, the prices of agricultural products reach a new peak which the public can't accept and complain a lot.

Thus, among all criticism sounds, the traditional distribution of supermarkets on agricultural products was questioned most by public. Some local governments also claim the wholesaler ,retailer and many other interlinks in the agricultural products'
distribution needs to cut down to in case the final products' price are too high. Thereby, the emphasis on slim margins and high quality has created new opportunities as well as new challenges for farmers and supermarkets (Cacho, 2003).

1.2 Problem statement

As stated in "Yangzi Evening News", farmers are discouraged and hurt by the low vegetable prices. However, end consumers are complaining about the high vegetable prices. The phenomenon in China is paid close attention nationally that "vegetables are bargained away cheaply from farmers, but are sold with a much high prices to customers". According to the article (Li, 2011), a consensus are reached that the problem behind this phenomenon exists in the "distribution links". There are over many intermediate links between growers and supermarkets in China, which leads to the high distribution costs for supermarkets and eventually higher prices for customers. In the traditional agricultural products distribution system, there are many intermediate links from farmers to supermarkets, which includes farmers’ co-operative societies, wholesale markets, inter-dealers, etc.

Moreover, it is difficult for supermarkets to manage the products quality and safety. One of the seasons is the unstable partnership between supermarkets and wholesalers, even between wholesalers and growers. Another reason is the immature wholesaler market that is weak in inspection and supervision upon the product quality and safety (Zhao, 2007).

Furthermore, facilities backwardness is also a problem of current FFV distribution system in China. Loading and uploading of goods are basically done by manpower (Anon., 2010). Storage facilities are backward, especially in places of origin, which hampers the distribution effectiveness of fruits and vegetables that has distinctive seasonal and regional characteristics. At present, proportion is quite low for the
application of advanced refrigeration equipment in China (Chinese Agricultural information network, 2007 cited in Zhao, 2007, p.19). This leads to high loss problem and poor processing capability partly.

At the end of 2010, the government proposed and carried out a countermeasure trying to solve the distribution links' problems and cut down the vegetables price in the final markets, which is the Agricultural Super Docking (ASD). The essence of this solution is very simple: adopting a new distribution model of agricultural products to reduce the over many intermediate links. Referring to the model of agricultural super-docking, this simply explains that supermarkets corporate with and purchase fresh vegetables and fruits directly from farmer’s cooperatives.

In fact, ASD once was implemented by some developed countries, like Japan and US. Though ASD has been developed into a highly sophisticated and well-developed distribution model in US and Japan, there are still some barriers and challenges to implement ASD in China.

**1.3 Purpose**

We will pay considerable attention on fresh fruits and vegetables distribution system, which is defined mainly on the docking between Chinese farm-cooperative and supermarkets in our master thesis.

In fact, our objective is to analyze the feasibility of ASD implementation on fresh fruits and vegetables distribution in China. To achieve our final goal more easily, we would study and research also from following perspective:

- Analysis the FFV distribution system of supermarkets in China
- Analysis the implementation of ASD in China
● Investigate limitations of the ASD implementation
● Present some recommendations

1.4 Methodology

Unlike China, some other countries do not have such phenomenon, in which countries the vegetable prices are quite stable, even in a long time, like US and Japan. On one hand, we will have case study of La Montanita Co-op to analyze, because the vegetable distribution system in La Montanita Co-op is similar with the model of ASD. During the case studies, we will focus on the FFV distribution systems. Like, how do they deal with the FFV supplement? On the other hand, ASD has been implemented in some areas of China this year. We will do a interview among the supermarkets which have implemented ASD to analysis the implementation of ASD in China. After the case study and interview, we will compare the situations to analyze and conclude. Then, we hope some accommodations will be presented to improve the efficiency of FFV distribution system in China.

1.5 Disposition

This paper contains eight sectors in total. We will briefly introduce them one after another here.

Chapter 1: "Introduction" would state the general background and problem of our research theme, as well as what and how we want to achieve through our thesis.

Chapter 2: "literature review" looks back the relevant literature, like distribution, distribution management, fruits and vegetables distribution and ASD distribution, which help our further study with more academic knowledge
Chapter 3: "Methodology" displays a clear structure of our thesis which avoids us deviating our research direction and missing important work.

Chapter 4: "empirical study" focus on the field study, which through our interview on Yonghui supermarket to get more genuine and practical information for our thesis.

Chapter 5: "Analysis" extends our own independent views and study through combining and comparing both of the literature and empirical part materials. we will also analyze and compare Chinese ASD with La Montanita Co-op's CDC (Cooperative Distribution Center).

Chapter 6: "Recommendation" provides several suggestions and countermeasures to solve the barriers and problems in our analysis on implementation of ASD in China.

Chapter 7: "Limitation" shows all the drawbacks and regrets which we can't manage in our thesis.

Chapter 8: "Conclusions" went through the whole thesis and give a comprehensive summary of it.
2. Literature review

2.1 Distribution

2.1.1 Definition

The definition of distribution varies from different perspectives and between different people. In China, the definitions of distribution have been unified into one for all the undergraduate textbooks for institutions of higher learning. The definition is as following. From the perspective of the implementation of distribution, it means equipping with goods and delivering them to the users in the most rational way, according to the order of the users' need in distribution center or logistic joint (Ding And Zhang, 2002). According to Ding and Zhang (2002), this concept includes three key points as following. Firstly, distribution is delivery actually. However, there are differences between distribution and the general delivery. Distribution is the high level of delivery in the form, because the general delivery could be an occasional action. However, distribution is a fixed form, or even an institutional form with established channel and a set of equipment, management strength and technical strength. Another difference between distribution and delivery is that distribution achieves a certain scale by effective sorting and picking and other cargo handling work. Distribution takes the advantage of economies of scale to achieve lower shipping costs. Thirdly, distribution serves users' requirements as the starting point. Distribution centers benefit on the basis of satisfying users' need.
2.1.2 Classification of distribution

Distribution could be classified in different ways. Classified by distribution organized form, it includes traditional distribution, centralized distribution and joint distribution (Ding and Zhang, 2002).

2.1.2.1 Traditional distribution

Traditional distribution is kind of goods delivery business especially for the small or sporadic amount of goods or temporary needs by commercial retail sales networks (Ding and Zhang, 2002). This kind of distribution is suitable for delivering goods with a wide variety and a small quantity in a short distance.

Numbers of distribution centers will be set according to the geographical distribution of users. Traditional distribution is characterized by low outbound transportation cost, but high inbound transportation cost. It is also characterized by high management cost, dispersed inventory, but relatively short lead time for users.

![Figure 2-1 Traditional distribution system](image-url)

Source: Ding and Zhang, 2002
2.1.2.2 Centralized Distribution

Centralized distribution means that a distribution center, which is specialized in distribution business, deliver goods to numbers of users (Ding and Zhang, 2002). Due to the large scale and highly professional, the distribution centers can establish a tight relationship with many users. Moreover, economic benefit of centralized distribution is obvious because of the large number of varieties and large quantities.

Centralized distribution has following advantages (Ding and Zhang, 2002). Firstly, it reduces the organizational total inventory because the organizations just have inventory in the distribution center which largely decreases the use of stock funds. The stock funds are quite high especially in the home appliance retailers since the single items are of high value, off period is short and they can be used for a long time. Secondly, since the organization have no stock, except in the distribution center, there is more area for sales and the operating costs can be reduced. Thirdly, it can lower the transportation cost. Centralized distribution could reduce the transportation from the warehouse to the stores. Meanwhile, it can optimize the vehicle routes and improve efficiency in the use of carrier vehicles. Of course there are more advantages of centralized distribution. But just the three points above are presented since there are many more of them (Ding And Zhang, 2002).

Centralized distribution is very suitable for low-cost home appliance chain operations. As the development of market competition, more and more enterprises will develop or create such a distribution pattern sharing the distribution centers, in order to reduce total operating costs effectively.
2.1.2.3 Joint distribution

Joint distribution is distribution activities which are implemented jointly by several organizations under the coordinated control and programme in the distribution centers (Ding and Zhang, 2002). It includes two forms of operation as following (Ding and Zhang, 2002). One is that one distribution firm is responsible for the many users' distribution business. The firm overall arranges the delivery time, frequency, route and the quantity of goods according to the users' need. The other one is that goods from many different users are mixed in the same vehicle in the link of delivery and deliver goods to each doorstep according to users' requirement or to a receipt place which are joint set by most or all the users.

From the perspective of users, joint distribution has following two advantages (Ding and Zhang, 2002). On one hand, it can achieve economies of scale and improve the efficiency of current operation. It also saves the resources of the enterprise since the companies don’t need to invest a lot of money, equipment, land and labor. On the other hand, companies can focus on core businesses, then accelerate the firm's growth and diffusion, expand the market range and eliminate the existing sales network, to build a coexistence environment.
From the perspective of society as a whole, joint distribution has advantages as follows: reduce the traffic volume and the traffic impact of the phenomenon of unloading in downtown, and then improve transportation conditions (Ding And Zhang, 2002). What's more, through centralized processing, it improves the vehicle loading rate, saves logistic processing space and human resource and improves the logistics environment.

![Joint distribution system](image)

Figure 2-3 Joint distribution system

Source: Ding and Zhang, 2002

### 2.1.3 Distribution in logistics, supply chain and marketing

Traditionally, distribution is a very important component of Logistics and Supply chain management. However, after we read the relating reference, we found that the concept of distribution, logistic and supply chain are very easy to confuse. Especially in Chinese literature, these three words are even alternative used some times. So we do believe that it's necessary to button down the relationships and concepts of distribution, logistics and supply chain before our further intensive study.
2.1.3.1 Distribution in supply chain management

Distribution in supply chain management refers to the distribution of a product from one industry to another. It could be factory to supplier, supplier to retailer, or retailer to end customer. As Abuzar (2006) said “Frequently there is a chain of intermediaries; each passing the product down the chain to the next organization, before it finally reaches the consumer or end-user. This process is known as the 'distribution chain' or the 'channel.' Each of the elements in these chains will have their own specific needs, which the producer must take into account, along with those of the all-important end-user.”(Abuzar, 2006)

2.1.3.2 Distribution and logistics

Moreover, distribution has been seen as dealing with logistics all the time. “Logistics is the process of planning, implementing and controlling the efficient, cost-effective flow and storage of raw materials, in-process inventory, finished goods and related information from point of origin to point of consumption for the purpose of conforming to customer requirements.”(Waters, 2003, P27) In some circumstances; researchers even always use these two words interchangeably. For example, people use a number of different terms for warehouses, with the most common being distribution centers and logistics centers.; and you might also hear about distribution resource planning and logistics resources planning in the MRP(material requirements planning) approach. So we should be careful as these terms can refer to specific parts of the supply chain or slightly different activities, when people talk about ‘distribution management’ , we should be clear about whether they mean transport, physical distribution, the whole of logistics, or some other function.

For example, according to Waters (2003), Logistic is responsible for the movement and storage of materials as they move through the supply chain in organizations and firms
by a series of activities, and actually distribution is just usually considered as one of them. And in logistics, “distribution is a general term for the activities that deliver finished goods to customers, including outward transport. It is often aligned with marketing and forms an important link with downstream activities” (Waters, 2003). Here the distribution Waters mentioned is “physical distribution”.

2.1.3.3 Distribution and marketing

Referring the relationship between distribution and marketing, we found that different authors hold different opinions. Some people to use the term distribution to include marketing; however, it is common practice for most scholars to use the term marketing to include distribution. They take distribution as one of the four aspects of marketing’s 4Ps, Place. (Cole, Fulton, and Lusk, 2005)

“Place” refers to the distribution channels used to get your product to your customers. Where your product is will greatly influence how you distribute it. If, for example, you own a small retail store or offer a service to your local community, then you are at the end of the distribution chain, and so you will be supplying directly to the customer. Businesses that create or assemble a product will have two options: selling directly to consumers or selling to a vendor (Cole, Fulton, and Lusk, 2005). Moreover, based on different market coverage, distribution is divided into three types. They are respectively intensive distribution; selective distribution and exclusive distribution.

Intensive distribution is widely used in as many places as possible, usually at low prices. Large companies always market on a national level with this type of distribution. This method is suitable for those convenience products that consumers buy regularly and spend little time shopping for, like chewing gum- increase sales with widespread distribution (Cole, Fulton, and Lusk, 2005).
Selective distribution narrows channels to a few businesses. High class products are usually sold through retailers that only sell upscale products. With this method, it could be easier to establish royal relationships with customers. Products have advantage on quality and uniqueness tends to fit better with selective distribution.

Exclusive distribution restricts distribution to a single reseller. Companies just have sole resellers who, in turn, might sell only your products. In this way, company would promote their product with prestige and specialty, though may have the risk of sacrifice sales volume.

**2.1.4 Distribution Management**

According to (Micu Adrian, et al., 2008), there are two major strategies to communicate value to their target customers, they are push strategies and pull strategies respectively.

**2.1.4.1 Push and pull strategies**

Push strategy focus on the communication of the supplier’s next time immediate customer, it depends on channel intermediaries to carry the value message through the rest of the channel. Push strategies are essential when the supplier's product and its differential value are not apparent to target customers, or when its value delivery cannot be easily made salient to target customers.

Instead, the focus of pull strategy’s communication is on the end customer or a channel member closer to the end customer, and push strategy carry value directly to their target customers. Pull strategies "presell" the offering to the target customers, who then go to channel intermediaries with brand-specific demands.

However, one thing need to be noticed, the disadvantage of push strategies is they
depend on the distribution channel to convey the value of products or service to customers (Micu Adrian, et al., 2008). So push strategies may need managing and developing the value-marketing skills of the entire distribution channel and under some particular circumstances, it also has to take the risk having the channel not convey the value theme.

2.1.4.2 Selection between "push" and "pull"

Indeed, the selection between "push" and "pull" strategy is difficult; both of them are suitable in different industry life cycle. Even though push strategies require both costly incentives for the retail channel firms and limited distribution, in introductory and growth markets, channel intermediaries must invest substantial resources in targeting potential customers and communicating value in return for uncertain sales that may occur later. In this case, suppliers have to share a large portion of their sales price with channel partners as an incentive for the selling effort. Moreover, when sales are uncertain or do not follow quickly, manufacturers generally will pay high fees for promotional efforts, such as cooperative advertising and in-store demonstrations.

Comparatively, pull strategies are preferred in most mature markets. Because push strategies are cost-effective for high-volume and mass-marketed products, and they give the supplier the ability to control over the value of products’ message. In addition, the mass-market channel partners like Wal-Mart, grocery chains, and drugstores prefer pull strategies despite lower margins, they make their money-moving inventory more efficiently but not by selling. Moreover, a pull strategy creates a stronger brand identity that increases loyalty.

The selection of the appropriate channel communication strategy also has a strong impact on successful pricing-strategy implementation (Micu Adrian, et al., 2008). This impact is even more manifested in the ability of suppliers to communicate their value
delivery to target customers. We will demonstrate that in the later chapter.

Ross.e Jones told us that “there is no single distribution system in existence that can be applied universally to all types of business.” (Jones, Ross E.1961). However, he also stated three key points to open the door to a better distribution management in general, which respectively are preparation; management thinking and company needs.

More specifically, a qualified distribution manager has to be a hybrid executive. He has to be acquainted with many specialties but would never think as, or become involved with the infinite details of, a specialist. He needs to know just enough to understanding but not researching.

As Greene said the range of information of a distribution manager should include “traffic, sales, marketing, cost accounting, production techniques, industrial engineering, materials handling, packaging, warehousing, business law, economics and office management practices. Such basics as English and geography are assumed.” (Greene, 1961)

Moreover, the same principle applies to a distribution manager’s background knowledge. They need to know enough of sales and marketing to understand the company's goals, and to provide efficient distribution facilities to keep pace with consumer demands; and they also need to be aware of manufacturing techniques to help the plant work out assembly schedules and lead times, as well as know which products should be shipped in bulk or concentrated form and packaged in the distribution area. More importantly, the distribution manager should learn other departments’ objectives and basic procedures. These can be obtained by friendly relations with those department heads (Greene, 1961).
3. Methodology

3.1 Qualitative research

Most research could be divided into qualitative research strategy and quantitative research strategy (Cavana, Delahaye and Sekaran, 2001).

After reading the relating reference and articles, we found two major reasons to support us should adopt the qualitative research strategy on our thesis.

First, qualitative researchers are aiming to understand human behaviors and the reasons behind that influencing such behaviors. Regarding to our thesis, we try to find the problems which causing the price gap of fresh vegetables and fruits between upstream and downstream in the whole distribution system of supermarkets in China, and then provide some constructive ideas through our study and analysis. And during the period, we plan to conduct an embedded research on all the interactions among different sections in the whole distribution system, which will be involved with many human behaviors.

Moreover, qualitative research strategy is always purposive but not random. So does the case we plan to choose. The reason we select them because they are consistent with our topic and also easy for us find relating comprehensive information.
3.2 Realism and interpretivism

Research paradigms construct a structure in the large. And the most accepted four research paradigms are respectively positivism, interpretivism, constructivism and realism, each of them has different features as following described (Nogeste, 2006).

Positivists are theory driven, they implement those fixed and already defined research plans in order to prove the truth of those predefined hypothesis.

Interpretivist researchers believe what they want to believe. Moreover, the interpretivist researchers understand the social constructed meaning by an individual or a group of individuals (Cavana, Delahaye and Sekaran, 2001).

Constructivism always thinks there could be plenty reasonable explanation for every single piece of information. In addition, the constructers are always researching based on too many “social theory” but a particular area (Nogeste, 2006).
It’s very difficult to position our research only in a single paradigm, the reasons as follows. In our research process, we will collect and use some data from empirical work to conduct our research, we also plan to find and analyze real cases which are corresponding to our theme. So we are not suitable for positivism. Moreover, we only highly focus on the FFV distribution of Chinese supermarket, neither of other regions and disciplines, so we are definitely not a constructivism either. However, besides we learnt from previous literature; accept various authors’ understanding and even borrow their ideas to help our analysis, then digest and finally get our own conclusion, we also acquire information from field work. In the empirical part of our thesis, we would refer Mr. Wang, who as our interviewee, provide us some brand new and comprehensive views for helping our further research and study. Thereby, taking all above points into consideration, we believe that our research paradigm is in the middle of between realism and interpretivism.

### 3.3 Inductive & Deductive Approach

After the analysis of research paradigm, we come to second step of research strategy framework, the selection of research approach. Traditionally, inductive and deductive are the two most accepted research approaches by public. A deductive approach firstly develops a theory or hypothesis which is then proved by the collected data, however, inductive approach use those collecting data to create new theory (Saunders, Lewis and Thornhil, 2003). In our thesis, we plan to use and analyze those data collecting both from our empirical work and literature study; and then get our own conclusion. Therefore, again, we decided picking both sides of the inductive approach and deductive approach as our research approaches.
3.4 Grounded Theory and Case Study

Relating to the research methodology of our thesis, we decide to use the combination of grounded theory and case study, and the reason as follows.

According to Saunders, Lewis and Thornhil(2003), the grounded theory punctuates the development of theory. The researchers who use the methodology develop their own theories through direct contact with the field study and without pre-theorizing. Moreover, the grounded theory methodology basically matches inductive research approach or the combination of inductive research approach and deductive approach. (Saunders, Lewis and Thornhil, 2003, p93) And in our thesis, we already discussed in the last paragraph that we will get our conclusion through the analysis of empirical work and literal study but our own pre-assumptions, then we located or research approach in the between of induction and deduction part, which are all corresponding with grounded theory methodology.

Moreover, referring to the case study research, it includes field study relating the practical problem in the real life context that using multiple sources of evidence (Saunders, Lewis and Thornhil, 2003). In our thesis, we are also aiming at applying the theories and knowledge learning from previous study and combing our own empirical work and analysis to provide some constructive thoughts to solve the real life problems.

3.5 Meetings with Individuals and Reference to Documentation

Finally, coming to the data collection methods, we decide use the meeting with individuals and reference to documentation in our thesis. Due to our limited time; connection and ability of acquiring resource, we just interviewed and collecting information from one distributing department manager assistant who are working in one
branch of “Yonghui” supermarkets in Beijing, and also only found one case to conduct our comparative analysis, which is the “La Montanita Co-op” as our secondary data. However, we have absolute faith and guarantee regarding the genuine quality of all the information showed in our thesis, all the data we found either from our own interviewing record or their official website and other authoritative relating reference. The following table showed schedule and ways of how and when we conducting the empirical work.

<table>
<thead>
<tr>
<th>Interviewee</th>
<th>Title / Position</th>
<th>Location</th>
<th>Interview Method</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Wang</td>
<td>Department manager assistant</td>
<td>Beijing</td>
<td>Interview</td>
<td>2011-3-17</td>
</tr>
<tr>
<td>Mr. Wang</td>
<td>Department manager assistant</td>
<td>Beijing</td>
<td>Telephone</td>
<td>2011-3-24</td>
</tr>
</tbody>
</table>

Table 3-1 Schedule of interviews
4. Empirical study

4.1 Fresh fruits and vegetable distribution

Since our research theme is on FFV (fresh fruits and vegetables) price gap in the distribution system of supermarkets in China, so besides analyzing the FFV distribution system, we also try to learn and distinct the major costs and their reasons in the process of FFV distribution in supermarkets of China.

4.1.1 Procurement in FFV distribution system

Distribution and channel chain is becoming a critical factor relating to guarantee the reliable source of fresh fruits and vegetables to urban supermarkets from farmers in the rapid developing global economy, especially in East Asia. For most supermarkets, procurement is prior concern in the FFV distribution channel.

FFV procurement basically requires high frequency, constant delivery and stable quality. And delivery arrangements between growers and supermarkets are usually based on easily obvious output characteristics, such as volume, size and color. Besides, some detailed specifications are also need to be attentive, like input applications and packaging, etc.

Considering the nature of perishable agricultural products and differences in quality and volumes both intra- and inter-seasonally, all supermarkets want to keep their products
fresh. So Quality control became a necessary issue for achieving the “best in fresh” ambition. However, since buyers regularly face problems in monitoring the freshness, safety and shelf-life of the produce. Pesticide residues and phytosanitary aspects are difficult to detect but affect business relationships between sellers and buyers. In order to guarantee reliable supply, retailers search for sustainable partnerships with producers that reduce such information and screening costs and reinforce mutual trust amongst chain agents in the distribution channel (Hueth et al., 1999).

**4.1.2 Two procurement regimes: Wholesale purchase and PSA**

There are two different procurement regimes in the FFV distribution system, they respectively are wholesale purchase and PSA (preferred – supplier arrangements). And supermarkets would switch their purchasing partners between these two regimes for their needs in different situations.

“Wholesale purchase and preferred-supplier arrangements can be characterised according to their transaction cost and supply management requirements in terms of scale and investments”(Ruers Ruben et al., 2007). The switch from wholesale purchase towards preferred-supplier arrangements can thus be understood as an endogenous response to changes in the real versus transaction costs structure.
Preferred supplier arrangements involve higher fixed and variable production and handling costs but save on governance costs and reduce exposure to risks from substandard quality and out-of-time delivery (Dolan and Humphrey, 2000).

The shift from wholesale purchase towards preferred supplier arrangements is strongly influenced by changes in consumers’ preferences and adjustments in supermarket formats. Once urban consumers begin to value quality, freshness and safety as important attributes for the selection of vegetables, supermarkets look for a selective group of producers that are able to guarantee the delivery of these products. This is also accompanied by input delivery and technical assistance services that impel producers to upgrade quality of their products (Hueth et al., 1999).

Labeling and certification could also be introduced in order to safeguard consumers’ trust. During this stage, specialized wholesalers are likely to be excluded from the delivery process (Reardon and Timmer, 2005). Meanwhile, local supermarkets are adjusting their formats in order to control the vegetables department at a centerpiece of their operations. Permanent supply of fresh vegetables is considered to be a major
strategy to attract clients on daily basis. Hence, distribution system integration asks suppliers to guarantee constant delivery at a stable quality. Moreover, attention is given to product innovation as part of the strategy to respond to the consumers’ variety-seeking behavior (Ahmadi-Esfahani and Stanmore, 1997), expanding the assortment with pesticides-free and organic products.

Besides, relational contracts and mutual trust are more important for creating commitment and reducing opportunistic behavior in China.

Depending on the real and transaction cost structure, particular procurement regimes will be preferred. Wholesale purchase is maintained when the required investments are high compared to the expected gains in distribution management costs. Delivery through preferred supplier arrangements (PSA) is likely to occur only when a substantial reduction in distribution governance costs can be reached that overbalances the increase in real production costs. Accordingly, PSA delivery will be easier to establish when traded volumes become larger; it could spread out fixed investments over more transactions and recover the costs over a longer period (White, 2000).

4.2 Distribution efficiency and FFV prices

In China, a major factor leading to the high FFV prices is the inefficient distribution (Li, 2011). Besides distribution efficiency, some other key factors are crucial for FFV prices as well, which will be presented at first. Afterwards, we will focus on distribution efficiency and FFV prices. Therefore key factors influencing FFV distribution cost will be presented following the first part.

4.2.1 Key factors influencing FFV prices in China

Retail prices for identical commodities often differ in different neighborhoods of a given city. Even FFV prices in a given city are always unstable. Key factors influencing
FFV prices are going to be presented, including seasonality in supply/climate, consumer demands/tastes, production costs, higher business cost, and distribution efficiency.

### 4.2.1.1 Seasonality in Supply/Climate

Vegetable production not only varies from year to year, but also from season to season. In the tropics, vegetable supplies are reduced in wet summer because of high temperature, continuous and intensive flooding, and poor field drainage. In temperate zone, in countries such as China, Japan, Korea, and in northern Pakistan and India, vegetable supplies are largely decreased because the drop in temperature froste the plants (Ali, 2000). Since last spring, China had some abnormality in the weather of China, such as drought in southern areas, frost disaster in northern part, all of which contribute to the large rise in vegetable and fruits prices. Climate is an important factor in vegetable and fruits production, which affect the vegetable and fruits prices indirectly.

Vegetables do show seasonality, both in price and availability.

![Seasonality in Fruits and Vegetables in Taiwan, Average of 1974-92](image)

Figure 4-1 Seasonality in fruits and vegetable prices in Taiwan, average of 1974-92

Source: Official data from Taipei Municipal Government
The degree of seasonality in fruits and vegetable prices usually depends on consumers' preference for vegetables and fruits. If the preference is high, it indicates that consumers are willing to purchase vegetables and fruits with a premium price during the short supply time (Ali, 2000).

4.2.1.2 Consumer Demands/Tastes

Nowadays, market is more and more customer-driven, especially when consumers are having high expectations and varies preferences, which makes exacting demands (Osvald and Stirn, 2008). Consumers not only expect a more wide range of products, but also products that are highly safe and good quality. Moreover, the changing lifestyles increase the cost of FFV since consumers are now more willing to purchase FFVs which are pre-packed and prepared (Osvald and Stirn, 2008). These add to the cost.

Compared with European countries, consumers in Asian hold distinct cultural values deeply in the fresh food sector (Goldman, Ramaswami and Krider, 2002). According to Figure (2004 cited in Cadilhon, et al., 2006, p.33):

"For consumers in Asian markets, 'fresh' food means 'as close as possible to the live animal or plant'. Chilled and frozen meat, fish or fresh products are associated with a period of storage that thus makes the food un-'fresh', such that chilled food is not considered 'fresh' by many Asian consumers"

According to my own (Xuhong Deng) experiences living in China for more than 20 years, chilled and frozen vegetables are not common, even very rare in supermarkets in China. Chilled and frozen products are not considered to be fresh by us. Even after I come to European, I usually buy "fresh" vegetables, instead of chilled and frozen vegetables. Because of this, FFV quality is more difficult to be guaranteed and the loss value of quality is usually high during transportation, especially long-distance
transportation. However, most of the time, FFV have to be transported from one place to another place because of FFV seasonality. Thus, higher requirements are needed regarding the transportation equipment. Therefore, these diverse cultural values also affect distribution cost, which influence the FFV prices as well.

4.2.1.3 Higher production Costs

According to the fruits and vegetables pricing study from Forfás(2004), the cost of producing fruits and vegetables is higher in Ireland than in other European countries because of the small scale of the growers. In the report, it says:

"smaller farm sizes in Ireland contribute to lower unit areas being grown by Irish growers which means higher overheads and variable costs per hectare e.g. one carrot grower in the UK can be the size of the entire Irish carrot sector. "(Forfás, 2004, p.10)

The situation in China is quite similar with that in Ireland. In China, the majority of growers are small in size, not mass production. It contributes to the high production costs.

4.2.1.4 Higher Business Costs

One significant cost is transport. In China, highways are not free for use. In contrast, high fees are charged for the use of highways. A limit of weight is set for different kinds of vehicles. Exceed the limit, additional fees are charged for the part of overweight, which are expensive. Overweight is quite common for freight truck in China. Moreover, recently, oil prices raised several times in China, which leads to the large increase in transportation cost. Additionally, a lot of vegetables are transported to the north from south. Besides, because of the smaller farm sizes and traditional distribution, the vehicle routes are usually not optimized and the loading rate of the carrier vehicles is low and
inefficient. It increases the transportation costs as well. Therefore, the increase in transport costs is one reason for rising prices.

Moreover, in China there are many intermediate links between growers and retailers. At each links, the business costs lead to the growth of the final FFV prices. For instance, the entrance fee and booth fee of the transaction markets are charged from growers, vendors or wholesalers if they want to sell vegetables in the markets. As reported in "Yangzi Evening News", the entrance fee and booth fee of the transaction markets are high and unreasonable. Even the ices used to keep the vegetables fresh have to be taken into account. One thing needs to be noted here that FFV cannot be traded anywhere except the specified trading markets. Sometimes if some farmers just want to sell a small scale of vegetables, they have to take a risk of fines to trade outside the market only in order to save the entrance fee of the transaction markets, which could mean a lot for the farmers. However, the fines by trade outside the market are quite high, which could be higher than the total value of the farmers' vegetables. Therefore, majority of them dare not to take the risk and have to pay the fees related to the markets. All the fees add to the vegetable prices.

Furthermore, fresh fruits and vegetables are perishable, especially vegetables. The joint links extend the time to transit from the growers to consumers, which leads to the loss of quality and waste of resources. The FFV prices increases since the transaction costs at each stage add to the cost of the supermarkets.

Besides the transport costs and transaction costs, there are other business costs, for example, the labor costs, management costs. In short, under these unpredictable and uncontrollable circumstances, a sophisticated and high efficient FFV distribution system is need to cut down FFV prices. So far, there is a long way there. Much efforts and practices are needed for improvements.
4.2.2 Key factors influencing FFV distribution cost

In the past, many food marketers concentrated on largely on volume, with the goals of sales growth and market share instead of cost objectives (Larson, 1997). According to Larson (1997), when they evaluated promotions, they used an incremental volume criterion instead of profitability. Distribution inefficiencies were not a major concern. Nowadays, cost leadership is a competitive strategy. Distribution efficiency is closely related to the FFV prices.

4.2.2.1 Vehicle routing problem (VRP)

Vehicle routes influence the total distribution cost directly. Many researches were presented to optimal the vehicle routes. According to Park(2000), the transportation time between two places not only depends on the route, but also the time of the day. The viewpoint regarding the vehicle routing problem with time windows and time-dependent travel-times (VRPTWTD) was introduced by Malandraki and Daskin (1992) at the first time. Afterwards, Bentner, Bauer, Oberair, and Morgenstern (2001) presented a simulated annealing and threshold-accepting algorithms to deal with the time-dependent problems. The solution has considered a zone in the city center with traffic jams in the afternoon.

Besides, in the famine relief areas, Hwang(1999) introduced an effective distribution model to determine optimal patterns of food supply and inventory allocation based on minimizing the deprivation and starving instead of travel distance or time.

Vehicle routing problem could account for a large percentage of the distribution cost and is closely related to the FVV prices.
4.2.2.2 Perishability

In all the models presented above, the travel-time between the customers was constant. However, in most of real-world distribution problems, the fluctuations of the travel-time should be taken into account in distribution because travel-time is crucial for the distribution of perishable goods due to the possible extended time that the goods spend on the vehicles caused by fluctuations (Osvald and Stirn, 2008). Perishable goods must be transported as soon as possible under controlled conditions in order to maintain quality and minimize the loss of commercial value (Beilock, 1981). Moreover, the specific degradation of quality during transport was not considered in the above models. According to Osvald and Stirn(2008 p.285),

"The difficulty in preserving the nutritional characteristics of fresh food-stuffs during transportation presents a direct problem to food distributors where the perishability of the produce requires it to be handled in ways not necessarily conducive to the traditional view of cost effective distribution activities. Fresh vegetables provide a representative example of perishable goods; the nutrition value and taste are at their best directly after harvesting, decreasing as time elapses until the food is spoilt."

Therefore, the lost commercial value, caused by the loss of quality during transportation, represents a significant distribution cost, besides the basic distribution costs regarding the volume of vehicles used, total travel-time and travel-distance. What's more, as mentioned above, for consumers in Asian markets, 'fresh' food means 'as close as possible to the live animal or plant' and chilled food is not considered 'fresh'. As a result, more advanced transportation techniques and better logistical coordination are needed in order to reduce the loss of quality as much as possible. All these add to the distribution cost and raise final FFV prices to consumers.


4.2.2.3 Information

Information between growers and consumers affects the distribution system in two diverse ways. On one hand, for consumers, information about quality of FFV is ambiguous due to the unsophisticated market mechanism in China. High quality means not just fresh, which means as close as possible to the live animal or plant for Asia consumers, but also less nuisance, like low pesticide residues on FFVs. In China, many consumers do not know well about the nuisanceless vegetables and organic vegetables, neither do many farmers. As a result, the real high quality may be supplanted by the "fresh" FFVs. Therefore, the whole pricing system might be influenced.

On the other hand, in present food distribution system, growers have difficulties to get the information about the real consumers' needs and the changes of the needs. One of the reasons behind this is caused by the over many intermediate links between the growers and consumers, which delays the information flow and generate inaccurate information (Anon., 2010). Another cause is the miss of high quality data including the market supplies and needs. Without high quality data, farmers may have difficulty evaluating alternative contracts, managing risks, and planning future production (Larson, 1997). As to the above reasons, it is usually imbalance between market supplies and market needs, which affect the FFV prices as well.
4.3 Current supermarket FFV distribution system in China

4.3.1 Two stages of development of FFV business in supermarkets

According to a "Survey report on Supermarket fresh Logistics Distribution centers" (Ministry of Commerce, 2006), there are two different operation models during the development of FFV business in supermarkets. At the beginning, the original models are rental counters and joint operation. Afterwards, with the maturity of the supermarket industry, supermarkets started to operate the FFV business by themselves. The two model will be followed to present more details.

4.3.1.1 Original model: rental counters and joint operation

At the beginning, it is complicated to manage the procurement, delivery, storage and loss control due to the restrictions, such as management capability and equipment, and so on (Ministry of Commerce, 2006). Therefore, at that time, supermarket chains rent out the FFV counters or let joint firms operate the FFV business, instead of operating FFV business themselves. Under this model, supermarket chains profit from the rent or commission according to the sales. Three advantages of this model could be reached (Ministry of Commerce, 2006). Firstly, more varieties of products could be provided. Secondly, the difficulty of management is reduced. Finally, the profits are relatively stable. One disadvantage is that the profit is relatively low.

Presently, minority of medium and small-scale supermarkets still adopt this model for
FFV business (Ministry of Commerce, 2006).

### 4.3.1.2 Basic model: self-operation

With the maturity of the supermarket industry, supermarkets have become one of the most important places to purchase daily consumer products for consumers. Moreover, more and more supermarkets began to seek a stable supplier, enhance channel management and control FFV sales (Ministry of Commerce, 2006). Therefore, Supermarkets operate FFV business by themselves in order to control FFV variety, price, quality and management better, and to further increase profit (Ministry of Commerce, 2006). According to the report (2006), advantage of this model is high profits relatively and it is the most common mode adopted by majority of supermarkets presently.

According to diverse supply chains after procurement, self-operation is divided into two different modes.

On one hand, after procurement from producing place or farmers wholesale markets, the fresh products are transported to each supermarket directly and then, stored and sold in the supermarket (Ministry of Commerce, 2006). In this mode, each supermarket is responsible for procurement, transportation and storage by itself. According to the report (2006), it has following advantage and disadvantages. By doing so, they have more autonomy upon the FFV management and control. However, the distribution cost is relatively high caused by procurement, transportation, storage, and vast loss during process. Moreover, it is hard to gain economics of scale and the stability of FFV variety and quality cannot be guaranteed.

On the other hand, after procurement, the fresh products are transported to centralized distribution centers, which might be owned by the supermarket firm or a third part (Ministry of Commerce, 2006). The centralized distribution centers centralize the needs
of all their customers to procure, transport, store and reprocess unify, and then, distribute them to each supermarket according to their needs (Ministry of Commerce, 2006). According to the report (2006), this mode has following advantage and disadvantage as well. This mode reduces and shortens the distribution chain and realizes the value of FFV better, via professional equipment, technology and management skill. However, it has high requirements on firms' financial capacity and management capability.

So far, there are few third-party distribution centers special for FFV in China.

**4.3.2 Current state of supermarket FFV distribution system**

At present, 80% to 95% of FFV is sold via supermarkets in developed countries (Ministry of Commerce, 2006). But the ratio is just 6% in China. According to the experiences from developed countries, sales of FFV are a major source of profit in supermarkets. In Japan, the gross profit of FFV business is up to 25% in supermarkets (Cai, 1996).

In China, the overall growing area of FFV is quite large, but the family unit acreage per household is small. Different seasons and different varieties of FFV are cultivated throughout the whole country. So, FFV usually needs to be transported from one place to another place after being concentrated from the small-scale and distributed production farmers, which is a process from traditional to centralize. Afterwards, when products are sold to consumers, it goes through a process from centralized to decentralize. Therefore, Current supermarket FFV supply chains are wide at the beginning and the end, but narrow in the middle.

According to the "Survey report on Supermarket fresh Logistics Distribution centers"(2006), current state of supermarket FFV distribution system has following
characters.

Firstly, the ratio of construction and use of distribution centers are low in China. According to the annual survey statistics in 2005, the application rate of distribution centers in normal temperature is about 95% in the main 100 consumer goods retailers. But the ratio of construction and use of FFV distribution centers is lower than 10%, and most of the FFV distributions centers possess have limited equipment and distribution capability. The usage of FFV distribution system is lower than 3% in overall supermarket industry.

Secondly, supermarkets focus on distribution systems increasingly. According to the report, more attention has been paid to construct FFV distribution centers, which has been become an important independent department. And 78% of the centers are directly in charge of the general managers and deputy general managers. 62% of the interviewed firms, which have not used FFV distribution system, show interests on applying the system in supermarkets and 5% of the firms have started to consider about applying or have implemented the system.

**FFV distribution centers belongs to**

![Chart showing distribution centers by role](image)

Figure 4-2 Domination of FFV distribution centers

Source: Ministry of Commerce, 2006
Thirdly, cold chain technology is better used in current supermarket FFV distribution system. Fruits and vegetables need to be specially transported, stored and sold due to their special characters, such as perishability and frangibility. Cold chain logistics provides the low temperature environment during transportation, storage and distribution, and then guarantee the quality and decrease the loss during delivery. Although cold chain technology is relatively better used in current supermarket FFV distribution system, cold chain logistic is also one of the main problem in FFV distribution system.

Besides the main characters mentioned above, there are still other characters. For instance, related policies and regulations are immature, which is a limitation for the development of FFV distribution system (Zhang And Du, 2010). Moreover, the supply channels are unstable. Most of the supermarkets have not established a stable partnership with their suppliers. Some of them even procure products from local wholesaler market simply. In sum, standardized FFV distribution system has not been formed in China.

4.3.3 Problems of current FFV distribution system

4.3.3.1 Facilities backwardness

Distribution inefficiency is one of the main problems of distribution system in China. One factor leading to the inefficiency is facilities backwardness in distribution centers. Modern distribution center needs high capital investment and long payback period. As a result, original warehouses are transformed into distribution centers directly by some of the firms. Those distribution centers are especially in a shortage of machinery and automated facilities. Loading and uploading of goods are basically done by manpower (Anon., 2010). What's more, storage facilities are backward, especially in places of origin, which hampers the distribution effectiveness of fruits and vegetables that has distinctive seasonal and regional characteristics. At present, proportion is quite low for
the application of advanced refrigeration equipment. According to the speech of Zhengcai Sun, the minister of Agriculture, on National Agricultural Conference(2007.12.22), the current ratio is only 10% for fruits processing, less than 20% for fruits storage, and a quarter of fruits are loss because of rotting annually(Chinese Agricultural information network, 2007 cited in Zhao, 2007, p.19).

4.3.3.2 High loss problem

To keep fruits and vegetables fresh during distribution is main problem. FFV is rich of water, easily spoiled and short of shelf time, which largely limit the transportation and transaction time. Therefore, it requires highly upon the transportation efficiency. However, due to the undeveloped distribution facilities and equipment, the loss of quality is high during distribution and sales process. According to statistics, the loss rate of fruits and vegetables reaches to 25% to 35%, while the loss rates are respectively blow 5% in developed countries, 1% to 2% in United States (Fang, 2002)

According to the Survey report on Supermarket fresh Logistics Distribution centers (2006), loss of fruits and vegetables mainly lies in processes of transportation, sorting, storage and shipping.

![Handling of fresh foods' loss](image.png)

Figure 4-3 Handling of fresh food's loss
Source: Ministry of Commerce, 2006
4.3.3.3 Quality and safety control problem

Usually, fruits and vegetables in supermarkets are less fresh than that from farmers market because farmers commonly sell them directly after harvesting from the FFV gardens, which is a weakness of supermarket. Product quality cannot be well guaranteed by supermarkets. One of the seasons is the unstable partnership between supermarkets and wholesalers, even between wholesalers and growers, as mentioned above.

Moreover, product quality and safety testing facilities and systems are not standardized and well established, not matter in wholesale market or supermarket industry (Zhao, 2007). On one hand, as a main intermediate link in the FFV distribution system in China, Wholesaler market is immature and weak in inspection and supervision upon the product quality and safety (Zhao, 2007). It is common that products with poor and high quality are managed and sold in the same way. Those make it difficult for supermarkets to manage the products quality and safety. One the other hand, retailers are highly traditional and small in size generally, which makes the control cost of quality and safety relatively high (Zhao, 2007).
4.3.3.4 High distribution cost

All the problems mentioned above are factors increasing the distribution cost. Another main factor is the over many intermediate links and lack of better link between multi-modal transports. Finally, most of supermarkets are small in scale and hard to achieve economies of scale. Thus, input and output ratio is low. However, under the condition of lack of third-party logistics, supermarkets mainly rely on delivery by suppliers, which lead that logistics cost remains high (Zhang And Du, 2010).

4.3.3.5 Imperfect Information system & poor processing capability

Majority of supermarkets have not established a complete distribution management information system (Anon., 2010). Large amount of information is still handled by hand. Furthermore, information processing capability is poor and need to be improved. Although some firms have set up an information system, only a small part of its function has been exploited. The inner local network of the enterprises has not realized electronic data interchange and the information collected by POS is lack of depth processing (Anon., 2010). Information feedback is not timely as well. As a result, those affect the flexibility of supermarkets to adapt to changing customer needs.

4.4 Agricultural super docking (ASD)

4.4.1 The meaning of Agricultural Super Docking

ASD is a new method of supply and distribution of fresh agricultural products from farmers to supermarkets directly, by signing an agreement of intent between farmers and merchants, in order to build an efficient platform for quality agricultural products to enter the supermarkets (Chen, 2011. Review 1st). The essence of ASD is to dock the
thousands of small farmers and the different supermarkets to build an integrated production and marketing chain to gain benefit for merchants, farmers and consumers at the same time (Chen, 2011. Review 1st). Referring to the model of ASD, supermarkets corporate with and purchase fresh agricultural products directly from farmers’ co-operative societies. Therefore, the vegetable price could be cut down by reducing the intermediate links.

4.4.2 Advantages of ASD

The advantages of ASD are presented from two aspects, which are the benefits related to the reducing of intermediate links and to the product quality.

On one hand, it reduces the business costs of intermediate links (Chen, 2011. Review 1st). In the model of agricultural docking, as shown in picture 1, supermarkets cooperate with and purchase directly from the farmers or the farmers’ co-operative societies, by which the intermediate links are reduced largely. Correspondingly, the costs related to the intermediate markets could be reduced. For example, as reported in "Yangzi Evening News"(Li, 2011), in stage 3, there are enter fee and booth fee of the wholesale distribution market, which are 1800Kr per a truck. Besides those fees, there are still some other fees related to the wholesale distribution market. What's more, according to the report (Li, 2011), the ice used for keep the vegetables fresh are in charged in varieties of fees as well. When the truck enter the market, the weight of the ice also account into the product weight, which are charged 60Kr per ton. Such of those unreasonable charges could be avoided as well. Without doubt, the profits of wholesalers in each intermediate could be removed. Thus, the FFV prices could be lower than before. Therefore, for supermarkets, the procurement costs decreased a lot.
On the other hand, it could improve the quality of the fresh agricultural products (Chen, 2011. Review 1st). In the traditional distribution model, farmers and supermarkets are connected by wholesalers. In this model, farmers are responsible for all the plant process and transportation of vegetables from farm land to local wholesalers (Chen, 2011. Review 1st). Farmers decide the variety and quantity of vegetables they want to plant, according to their own experience. However, for agricultural super docking, farmers could produce agricultural products safely based on the quest of supermarket regarding the variety and quantity of the products (Chen, 2011. Review 1st). During the production process, merchants may provide services to guide the production from the perspective of technology and related knowledge via corporation with another agency or by some other ways (Chen, 2011. Review 1st). Before production, a contract has been sign between the supermarket and farmers. Therefore, after the production, the farmers don't need to worry about if the products could be sold.

### 4.4.3 The barriers of implementing ASD

Though ASD could bring plentiful benefits, in reality, there are still too many strict requirements and factors in operation and management to affect its smooth docking.

So far as supermarkets are concerned is the volume and specifies of agricultural products. Usually, large supermarket companies have to purchasing large volume and
various specifies of products to meet their large quantity of customers. However, due to the ASD is still in practicing phase in China, most Chinese farm-cooperatives don't have such capability to meet the requirements of supermarkets in terms of volume and specifies right now. Hereby, supermarkets have to find dozens of farm-cooperatives locating in different area too reach their qualified procurement scheme.

Moreover, since right now in China there are very few specialized professional third-party distribution centers for fresh agricultural products. Thereby, for small and medium sized supermarkets, the ASD is even harder to implement, because most of them are short of independent docking channel. The inputs of establish a complete independent distribution channel is overwhelming expensive, especially for fresh agricultural products, they require more advanced and specialized appliance and professional well-trained staff to manage fresh agricultural products in production, refrigeration, storage, transportation respectively.

On the other hand, considering farmers' self-factors, it also could be a difficulty for implementing efficient ASD. Due to the regional uneven education among urban areas and rural areas in China, most peasants are relatively low-educated, which cause a educational gap of quality and culture between farmers and supermarkets' staff. And this phenomenon leads to negative results respectively in communication and cooperation credibility. First, supermarkets and farmers have different and divergent primary goals in ASD. Farmers consider nothing but selling their own farming products as many as possible to get their personal maximum of profit. Conversely, supermarkets focus more on quality and various specifies of agricultural products that they are purchasing, because they need to meet marketing demand, more importantly, they have to be responsible for their consumers' food safety. However, it's very difficult that the supermarkets could utterly correct and change the farmers' hundreds years of traditional thought of producing for the excessive of quantity but quality of their products. In addition, due to the farmers' personal low-quality, most of them don’t have strong
initiative to accept new knowledge and apply advanced technology. Thus, the farmers' lack of understanding and using the information technology, which increase the difficulty of efficient exchanging information and electronic transaction between farm-cooperatives and supermarkets.(Chen, 2011. Review 4th)

4.5 Case description

**NB:** In this sub-chapter, all the information we used around Yonghui's introduction and history is all from Yonghui Supermarkets' official website: http://www.yonghui.com.cn/.

4.5.1 Yonghui supermarket in China

As we already introduced above, agricultural super docking is a novel but heating phenomenon in China, all the companies who adopted “ASD” have the following features: all over the country's store network and billions of Yuan annual sales volume, moreover, they are all operating professional FFV distribution with farm-cooperatives: agricultural bases or direct docking bases.

According to our research, we found there several major players in China supermarkets industry who are carrying out “agricultural super docking”, which included some international huge supermarkets, like Wal-Mart stores who owned 214 large-scale franchise in China and Carrefour who operating 180 chains, the annual sales of both of them are nearly 400 million. Definitely, some native enterprise sense and seized this huge “gold mine”, like our investigation focus, Yonghui supermarkets, who are currently owing 148 supermarkets across the whole country and expected its sales to reach 150 billion yuan in 2011.

Yonghui is right now co-controlled by Zhang Xuan Song, Zhang Henning brothers, as
the company's chairman and president respectively. It started as a small supermarket in Fuzhou province, and it was established only with 100 million registered capitals in April 2001. However, since then, Yonghui Supermarket has been the rapid expanded in terms of scale, till the end of June 2010, Yonghui owned 135 supermarkets and one distribution center, which including three stores involved in real estate owned, and leased the remaining 132 stores were acquired. Besides the supermarkets, it should be noted that Yonghui possessed 85 convenience stores, franchise stores in Fuzhou, Fujian Province. The total business area of Yonghui was approximately 839,649 square meters.

Therefore, integrating the perspectives of representativeness, relevancy and availability relating to our research study, finally, we found “Yonghui” as our investigating object and get its permission of interview.

4.6 Interview Record

Mr. Wang, who is the manager assistant of agricultural products management department in Yonghui supermarkets’ branch ---Hengji store in Beijing accepted our interview on March, 17th and 24th 2011.

We asked many questions relating to fresh fruits and vegetables ‘distribution management of supermarkets, and then we summarized the dialogue and turn them in to literal writings as below in order to read and understand.

4.6.1 Marketing

According to Mr. Wang, we learnt that FFV is a special kind of products in supermarkets’ business, especially from the perspective of marketing demand. In this industry, the FFV market is just like a piece of "Chicken rib, tasteless when eaten but a pity to throw away. However, because the profit of the whole market is relatively low
compared with the other items in supermarkets, it could not be abandoned due to the significance of attracting more customers for supermarkets. As to the demand of this market, without doubt, it is quite high since there are large numbers of people who need to eat FFV every day in Beijing. Moreover, Mr. Wang also gave us some specific number, he said for the current situation in supermarket industry; the profit of FFV is about 12-15% in average, sometimes even lower than 12%. However, as mentioned above, it is crucial to increase the flow of customers in order to promote the sales of other products.

4.6.2 Yonghui and ASD

Along with interview’s advance, we learnt that Yonghui is doing better in FFV sales than most of its competitors in supermarkets industry, as well as the reason behind. Even though Mr. Wang told us that the sales of FFV in Yonghui is still unstable since the distribution they are using is too new to control, it is still in the trial process. However, in the short run, for a novel adopting system, they are very glad and satisfied with their FFV sales which are higher than most of their competitors.

The special character of Yonghui in managing FFV is its different procuring channel. Yonghui is trying a new distribution method on FFV which named “agricultural super docking” (ASD). The FFV supply of Yonghui is decided by the species of products. Either of them is from the farmer co-operatives or is still from the wholesalers in traditional way. And in this way, some of Yonghui’s FFV products are cheaper than other supermarkets in the same region. Because this new ASD distribution system of Yonghui is trying on some FFV, help they purchase some FFV products from the farms co-operatives directly, instead of from the traditional wholesalers. With adoption of the new method, Yonghui have more autonomy in setting the price.
Specifically, since Yonghui make FFV purchase from farmers co-operatives directly, many intermediate links would be reduced compared with procurement from wholesalers. In traditional distribution model, the flows of FFV go through much more links as follow: Farmers- local agents- local markets- regional stock markets- wholesaler- supermarket suppliers- supermarket. Therefore, ASD reduces our procurement cost largely by cutting down these intermediate links. We also learnt from Mr. Wang, judging from the current situation, besides lowering the cost of FFV products, the sales of FFV have increased; prices are lower and quality is as good as before.

4.6.3 ASD strict requirements on transportation

The only issue became more complicated for Yonghui is the transportation of FFV, as well as the loss and responsibility during the transportation. Mr. Wang told us that the before they adopted ASD, in traditional supermarkets’ distribution of FFV, the loss caused by transportation is charged by wholesalers when we corporate with them; and the loss during the sales process in the supermarket is shared responsibility for both of the supermarkets and wholesalers. However, right now Yonghui are responsible for all the losses caused by transportation and even during the sales process, because the farmers can’t afford it. But the positive side is that Yonghui has always been attaching importance to transportation and management in distribution system. They have their own distribution center with exquisite equipment and well trained transporting employees. Therefore, they are confident with their ability in controlling quality and managing loss in FFV distribution.

In fact, not just for Yonghui, the ASD through procuring FFV from the farms co-operatives, supermarkets have more power in price setting. The truth is the adoption of ASD makes farmers, supermarket and consumers a triple-wining situation.
4.6.4 The barrier of adopting ASD

Every coin has its two sides, since the ASD has so many advantages outweighing the traditional distribution system, there have to be some barriers and price to pay for the adoption of it.

Firstly, ASD has very strict requirements for the distribution; the inputs are especially large. For Yonghui supermarket, it’s not a particular problem, but for most small and medium size supermarkets, they may not be capable of affording such high cost. Overall, the threshold of entering ASD is relatively high.

Since Yonghui is in the practicing phase of ASD, the entire new distribution system is not mature yet, there are still a variety of vegetables cannot be applied in this method. Therefore they have to continue cooperating with wholesalers on some of the FFV’s purchase, but they have already been trying to exploring and negotiating new FFV species with more farms co-operatives.

Moreover, both of supermarkets and farms co-operatives need time to prove and overcome the worries of credibility and risk in this new ASD distribution.

Theoretically, ASD provides a more transparent, genuine and efficient platform of information on FFV. However, in practice, due to the educational gap between supermarkets’ employees and the farmers, they have to increase the intimacy and communication to be against these insufficient, missing and misunderstanding information-exchanging. For Yonghui, they are expected to improve the situation in the years to come.

The worse situation is the farmers have troubles and worries in using electronic technique in both exchanging information and money in ASD distribution. Comparing
electronic transaction, they prefer ready money business; also they like face to face talking experience and narratives rather than using E-mail or tele-meeting with statistics and charts. All of above problems no doubt increase supermarkets’ employees’ working load. Right now, Yonghui are still thinking and working on how to train their employee and farmers to corporate more smoothly and comfortably.

4.6.5 Local governmental politics and attitudes of ASD

However, according to Mr. Wang, it seems the government shows a very supportive attitude on this new distribution, so the handling of the documents and procedures of ASD is not difficult at all. In 2010, the local government even economically assists those supermarkets who are implementing ASD. But due to ASD is too novel to apply. There are no precedents before; most supermarkets are still in “waiting and observing” phase in China.

4.6.6 Farmers' benefits

Special urgent situation (like SARS) caused massive and critical demand on particular products has been a serious problem that all supermarkets pay attention all the time. So ASD also needs to overcome it. Because on time delivery is very important for FFV distribution, the only counter solution for us is making the exchanging information with farms co-operatives and farmers as accurate and timely as possible, only in such case, supermarkets can be more responsive to those sudden crisis. And in relating to ensure the farmers’ benefits, Yonghui also come up with some “lowest guaranteeing price” on FFV.

Speaking of those farmers’ benefits, ASD could bring the farmer even more. Besides they don’t have to worry about their FFV’s sales, they also could get a better reasonable price of their crops. Moreover, they will acquire more useful beforehand marketing
information, then make more corresponding wise plans for the next years’ farming and finally avoid wasting more of their physical and economical inputs.

### 4.6.7 ASD's developing trend in future

As we already mentioned above, the major problems of ASD are the insufficient information exchanging among our supermarkets, the farms co-operatives, farmers and the relative scarcity of varieties on FFV in ASD. Thus, for every single vegetable’s procuring, Yonghui is supplied many farms co-operatives. Because considering either of quantity or species relating Chinese farming’s geographical distribution, it’s impossible that only one farm co-operative would meet our demands of marketing.

Mr. Wang told us, since Yonghui supermarkets have achieved results on FFV products so far, they are thinking about expanding ASD’s application in more kinds of products, like meat and seafood. And basing on their experience and observation, plus the local government support, they believe and have faith that more and more supermarkets will like start trying ASD distribution in future.

### 4.6.8 SWOT interviewing questions' design

In fact, we design our interview questions in the light of SWOT analysis, because we want to analyze a company’s position with their special distribution features on FFV products in supermarkets industry in China. Thus, SWOT analysis could provide us a suitable tool and comprehensive direction for our further research from strength, weakness, opportunity and threat perspective respectively. However, in order to making those questions more sense to the interviewee, we didn’t ask these questions on the SWOT matrix sequence. However, you still can get it through the questions in appendix and table below.
5. Analysis

5.1 Cost drivers in FFV distribution

As mentioned before, FFV prices are high and keep rising. But the profit margin of supermarkets is quite low. According to the interviewed department manager of Yonghui supermarket,

"As for supermarket, the FFV market is like a piece of "Chicken rib"-tasteless when eaten but a pity to throw away. Because the profit of the whole market is relatively low compared with the other items in supermarkets. However, it could not be abandoned because it is crucial to attract more customers for supermarkets." (Mr. Wang, 110317)

5.1.1 Procurement cost

It was the common situation for most of supermarkets before implementation of ASD. The manager told us that most of supermarkets aim to not lose money in the FFV market, instead of making profit. However, referring to the supermarkets in most developed countries, Japan and America for instance, FFV sales could be the most profit
part in supermarkets. Then, what are the cost drivers after implementation of ASD?

For most supermarkets, procurement is prior concern in the FFV distribution channel. FFV procurement basically requires high frequency, constant delivery and stable quality. We mentioned two different procurement regimes in the FFV distribution system, which respectively are wholesale purchase and PSA (preferred supplier arrangements). Wholesale purchase is identified by us to be the procurement regime in the traditional distribution system for supermarket in China. Because in the traditional distribution system, by cooperation with wholesalers, real costs of procurement is relatively low for supermarkets, including low variable input costs and low intense of fixed costs. However, by adopting this procurement regime, supermarkets are difficult to guarantee the high quality of products. Moreover, they are largely restricted by wholesalers in terms of prices and profits, which determine little space for supermarkets to improve their FFV business to be very promising. In our perspectives, the above two limitations account for at least 80% of the drawbacks of the traditional procurement regime.

Therefore, the bargaining power of supermarkets has changed, as well as the bargaining power of suppliers. The bargaining power of suppliers has to be analyzed from two perspectives. On one hand, in the traditional distribution model, wholesalers are usually suppliers. Supermarkets depend largely on wholesalers. They almost cannot access to any information about FFV producers. There are many buyers and few dominant suppliers. The wholesale prices are determined by wholesalers. Thus, the bargaining power of suppliers is quite high in traditional distribution model. On the other hand, in the ASD model, PS refers to growers or farmers' cooperative society. Compared with the situation before, the bargaining power of growers or farmers' cooperative society is much higher. They plant as much FFV as agreed in advance and supply them to supermarkets directly based on some certain agreement. In sum, the bargaining power of wholesalers becomes lower. But the bargaining power of growers or farmers’ cooperative society becomes higher. Referring to the bargaining power of supermarkets,
by adopting procurement regime of PSA, the most important improvement is that supermarkets are more in charge of the procurement cost and retail prices, compared with traditional procurement. What's more, in ASD model, supermarkets communicate much more with growers and are easier to control the FFV quality. Therefore, the bargaining power of supermarkets is much stronger than before. The bargaining power of supermarkets and suppliers are largely related to the procurement cost.

With changes in consumers’ preferences and adjustments in supermarket formats, urban consumers begin to value quality; freshness and safety are important attributes for the selection of vegetables. Supermarkets look for a selective group of producers that are able to guarantee the delivery of high quality products. Then PSA (preferred supplier arrangements) are more adopted in ASD model. PSA involve higher fixed and variable production and handling costs but reduce exposure to risks from substandard quality and out-of-time delivery. By adopting this procurement regime, the transaction costs are relatively low and supermarkets could benefit from economies of scale. Compared with traditional procurement, the most important improvement is that supermarkets are more in charge of the procurement cost and retail prices.

5.1.2 Cost of transferring information in fresh agricultural products’ distribution

After study and analyze the relating literature and real empirical cases, we find out that the lack and asymmetrical a variety of information of the end-market demand and supply of agricultural products, not only cause the blindness of farming producers’ decisions and low-returns, meanwhile, but also make the customers unsatisfied with the farming products and low-will to pay a higher price on them. Therefore, how to exchange accurate, comprehensive, timely and symmetry of agricultural products’ information between the farming base and end-market is a critical factor of cost drivers
in FFV distribution. (Hu, 2010)

Among many factors of affecting Chinese farmers income’s increasing, the ineffective exchange and gap of information between the suppliers of agricultural products and the ultimate consumer and end-market demand is the most important one. Agricultural production, transport, selling and other links in FFV’s distribution are forward from production-oriented into demand-oriented through information technology and realizing the direct docking between the farming base and agricultural consuming markets through ASD. As a result which Mr. Wang told us, ASD achieves the maximum of “triple-wins” situation among farmers, supermarkets and consumers, and finally upgrading the whole society and Chinese living standards.

Hence, we analyzed the influence of ineffective and inaccurate information of fresh agricultural products of consuming end-markets in China as follow.

Firstly, lack of professional organizing end-markets’ information leading the farming producers obtain infective market data.

Farmers’ limited education and Knowledge of capacity as well as rural bad physical conditions of information delivery constraints their ability of acquiring effective market information in the course of participating the agricultural products’ trade. Especially when farmers are facing relative higher informational search costs, the agricultural data they obtain are always incomplete and asymmetrical (Hu, 2010). In such cases, the party who has complete information and informational advantage would the use of the gap of agricultural products’ price to manipulate the entire agricultural market. Accordingly, the risk would transfer to the farmers who have disadvantage access to information of agricultural market.

The lack and asymmetrical of end-market information would result in asymmetry of
agricultural products market. Worse, it would undermine the necessary continuity and stability in agricultural investment, and then exacerbate the loss of agricultural production costs, finally bring the blindness of making decision and low-profits to the farming producers. (Hu, 2010)

Secondly, the asymmetry of agricultural products’ information would cause adverse selection and moral hazard; moreover it would damage the benefits of consumers.

The asymmetry of agricultural products’ information refers to in the agricultural products’ market, the seller and the buyer obtain asymmetrical data of the transaction object in relating to the inner quality, nature, price and many other factors of agricultural products (Hu, 2010). Since the agricultural products have the characteristic of searching, experiencing and crediting goods, all these natures could lead to adverse selection and moral hazard in the process of consumption of agricultural products. The interaction of these two kinds of behaviors will eventually result in low-quality agricultural products drive the high-quality agricultural products out of the agricultural products’ market and consumers accordingly consuming those inferior goods. Thus it again damages the benefits of consumers by make consumers not satisfied with the products or pay a higher price for them.

Thirdly, it’s the failure of achieving in optimal allocation of agricultural production resources.

The essence of optimizing allocation of resources is making better use of all different kinds of information which scattering in the entire society. In order to provide a better environment for making the economic decision and achieve the consistency between market demand and the allocation of production resources. However, when farmers couldn’t obtain the accurate, timely and effectively agricultural market information, information-oriented feature cannot fully reflect in the production process and then
affect the efficiency of allocation of resources. And this is the problem the Chinese agricultural products distribution system is facing at present.

Besides the impacts, we also learned the actual actions of ASD would effectively manage the transferring information of fresh agricultural products of consuming end-markets in China.

ASD would lead the agricultural end-markets information’s docking. The end-markets refers to the where agricultural products could meet their final consumers, which could include retail markets, wholesale markets, farming base direct markets and etc. The information of agricultural end-markets consist farming products’ information of both of buyer and seller in relating to collection, storage, distribution and all other kinds of trade and service. Through ASD, the supplier and buyer of agricultural products could have more communication and connection on the end-markets information. Thus, maintain the consistency of activities and even in the whole distribution system. Finally realizing the end-markets information of agricultural products’ symmetry and complete. In our study, through the establishment of a set of processes, norms and protecting mechanism on agricultural end-markets information’s docking would providing more effective service for both of farmers and supermarkets.

In our final suggestion sector, we will state the specific counter solutions on through agricultural products end-market information’s docking.
5.2 SWOT analysis

Objective: ASD implementation in Yonghui supermarket

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<tr>
<th>Strengths</th>
<th>Weaknesses</th>
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<tbody>
<tr>
<td>• Brand</td>
<td>• Distribution technical staff needed</td>
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<tr>
<td>• Financial capability</td>
<td>• Higher responsibility</td>
</tr>
<tr>
<td>• Existing customers</td>
<td>• Additional distribution cost</td>
</tr>
<tr>
<td>• Higher quality &amp; varieties of FFV</td>
<td>• High investment</td>
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<tr>
<td>• Lower prices of FFV</td>
<td>• Backward modern management technique</td>
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<tr>
<td>• Own-operation distribution center</td>
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<td>• Cold-chain technology</td>
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<td>• Relatively high-tech equipment</td>
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<th>Opportunities</th>
<th>Threats</th>
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<tr>
<td>• Government support</td>
<td>• Rare professional FFV third-party distribution center</td>
</tr>
<tr>
<td>• Higher bargaining power</td>
<td>• Low educational farmers</td>
</tr>
<tr>
<td>• Better supplier relationship</td>
<td>• Market need seasonal</td>
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<tr>
<td>• More enthusiasm of farmers</td>
<td>• The first practitioners in China</td>
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<tr>
<td>• High price sensitivity of consumers</td>
<td>• Unstandardized market system and regulations</td>
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<tr>
<td>• Lower threat of new entrants</td>
<td>• High rate of unemployment</td>
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Table 5-1 SWOT analysis on ASD implementation

We interviewed the manager of FFV department of Yonghui supermarket. As stated, 21 questions are designed according to SWOT analysis ahead of time. According to information from the manager and secondary data, we summarized the points of strengths, weaknesses, opportunities and threats of Yonghui supermarket to implement
ASD as a strategy for FFV department. Although the points are listed above, short explanations will be presented for each box.

**Strengths**

Yonghui has developed more than 200 large and medium-sized supermarkets in Beijing, Chongqing, Fujian, Anhui and other provinces and cities. The business area of Yonghui exceeds 1000,000 square meters in China. In 2010, Yonghui ranked the top 30 in the top 100 national chain enterprises, top 10 in the top 100 fast moving consumer goods chain enterprises. Yonghui take advantages of strong brand, financial capability and its own large existing customers. Besides, by cooperation with farmer's co-operatives, Yonghui is able to provide higher quality and more varieties of FFV, which is better to satisfy consumers' values of quality, freshness and safety. Not even high quality, FFV products in Yonghui are cheaper than other supermarkets. The reasons are presented by the manager as follows:

*With adoption of ASD, we have more autonomy in setting the price and many intermediate links would be reduced compared with procurement from wholesalers. Therefore, ASD reduces our procurement cost largely by cutting down these intermediate links.* (Mr. Wang, 110317)

Moreover, it has its own-operation distribution center with some distribution equipment, which is not possessed by most of the medium and small-sized supermarkets, even for some large and medium-sized supermarkets.

**Weaknesses**

As there is no precedent of ASD implementation in China, there are no related management staffs to guide the implementation of ASD. Additional, although Yonghui has high-tech distribution equipment, which is above the average level, compared with competitors in China, the equipment are not comprehensive and advanced enough. However, Yonghui still has invested a lot on the infrastructure distribution equipment.
Moreover, in ASD model, Yonghui has to be responsible for the FFV transportation and the loss caused during transportation and sales. Thus, there is higher responsibility for supermarket, compared with cooperation with wholesalers. Correspondingly, some part of the distribution costs are added to supermarkets.

**Opportunities**

First of all, FFV problems has attracted much attention of not only consumers and related FFV market player, but also government and mass medium, all of which are strongly eager to solve the problems. Therefore, ASD as a solution are strongly recommended to be implemented. As said by the manager:

*The Government shows a very supportive attitude on this new distribution, so the handling of the documents and procedures of ASD is not difficult at all. In 2010, the local government even economically assists those supermarkets who are implementing ASD. (Mr. Wang, 110317)*

Moreover, in the part of Porter's five forces analysis, we illustrated that the bargaining power of supermarkets are higher in ASD model and more pricing power could be reached in ASD model. Besides, in the perspective of farmers, they are more positive to plant FFV and income will be increased. As said by the manager:

*Farmers don’t have to worry about their FFV’s sales; they also could get a better reasonable price of their crops. Moreover, they will acquire more useful beforehand marketing information, then make more corresponding wise plans for the next years’ farming and finally avoid wasting more of their physical and economical inputs. (Mr. Wang, 110317)*

In the perspective of consumers, they are high sensitive of FFV prices now since FFV prices keep rising for a long time and there is no trend that it will come down. Therefore, mentally they will support the supermarkets that implement ASD actively and be much attracted by supermarkets with a lower FFV prices.
Finally, ASD lowers the threat of new entrants as analyzed in Porter's five forces. Also, as said by the manager:

*ASD has very strict requirements for the distribution; the inputs are especially large. For most small and medium size supermarkets, they may not be capable of affording such high cost. Overall, the threshold of entering ASD is relatively high (Mr. Wang, 11031).*

All of the points above create opportunities for Yonghui or supermarkets implementing ASD successfully, to be the market leader in the FFV field.

**Threats**

To implement ASD widely, professional third-party distribution centers, especially for FFV, are need since huge investments are needed to build own distribution center. For most small and medium-size supermarkets, they may not be capable of affording such high cost. Thus, construction of professional FFV third-party distribution centers is crucial to implement ASD extensively. However, these kinds of centers are scarce. Most of the farmers or employees in the farmer's co-operatives are lower educated. Lower educational farmers are also threats for ASD implementation, which are reflected in two aspects: communication and trust in high-tech. On one hand, communication problems exist sometimes, especially regarding the professional terms. According to the manager:

*Theoretically, ASD provides us a more transparent, genuine and efficient platform of information on FFV. However, in practice, due to the educational gap between our employees and the farmers, we have to increase our intimacy and communication to be against these insufficient, missing and misunderstanding information-exchanging. We are expected to improve the situation (Mr. Wang, 11031).*

On the other hand, most of the growers in China have problems to trust the high-teches
since they know little about them. This causes some problems when supermarkets cooperate with growers. According to the manager:

*Comparing electronic transaction, they prefer ready money business; also they like face to face talking experience and narratives rather than using E-mail or tele-meeting with statistics and charts. All of above problems no doubt increase our employees’ working load (Mr. Wang, 110317.)*

One of main threats is that there are no practitioners of ASD in China before, although similar model has been practiced well for a long time. At the starting point of ASD practicing phase in China, the distribution system and the regulations are not standardized and immature. Also, there is a big problem that might be caused if ASD is widely implemented nationally. It is that large amounts of people will laid off, for example, large number of small wholesalers, who should also be considered and protected. Their livelihoods issue is a major problem.

### 5.3 Interplay between farm-cooperatives and supermarkets

Through the interview of Yonghui supermarkets’ branch ---Hengji store in Beijing, we learned that one major problem that most supermarkets who adopting ASD are facing is the relative scarcity of varieties on fresh fruits and vegetables. Connecting to this phenomenon to the distribution and marketing concept, it's not difficult to understand the inter-selection between supermarkets and farm-cooperatives. In our literature part, we already stated that from the marketing perspective, distribution channels are to get the product to the customers. Since ASD have cut so many interlinks in the whole distribution chain, so the farmers could sell their FFV products only through one vendor: supermarkets, which are at the end of the distribution chain and would supply directly to the customer.
Base on different market coverage, distribution is divided into three types. They are intensive distribution; selective distribution and exclusive distribution respectively. (Cole, Fulton, and Lusk, 2005).

As we in empirical part discussed, the traditional distribution of FFV in China go through many intermediates, from all kinds of wholesalers to regional retailers, then get to the supermarkets or street markets where finally can reach the consumers. According to our literature study, if we take the farm-cooperatives as companies, the traditional marketing channel of FFV was applying the intensive distribution. Farmers want to dispose of their products in as many channels as possible irrespective of reputation, credibility and even price, because they are afraid of overstocking these perishable fruits and vegetables and creating loss.

Conversely, agricultural super-docking has more limitations on choosing the intermediates in their distribution channel. Farm-cooperatives would choose more credible supermarkets with good reputation and higher purchasing price of FFV. to sell their products. And vice versa, supermarkets also will select those farm-cooperatives who would provide good quality and stable quantity of FFV to be their docking objectives.

However, considering either of quantity or species relating Chinese farming’s geographical distribution, it’s very difficult that only one farm co-operative would meet one supermarket’s' marketing demands of FFV products. Taking Yonghui as an example, for every single vegetable’s procuring, Yonghui is supplied many farms co-operative. Thus, Exclusive distribution restricts distribution to a single reseller is basically impossible realized in FFV business in China.

Moreover, relating to distribution management, we found that ASD is suited to both of
pull strategies and push strategies in view of it only has one interlink, supermarkets. AS we stated in our above literature, "push strategy focus on the communication of the supplier’s next time immediate customer, it depends on channel intermediaries to carry the value message through the rest of the channel." and comparatively, "the focus of pull strategy’s communication is on the end customer or a channel member closer to the end customer, and carry value directly to their target customers."

Although the ultimate objective of ASD narrowing down the distribution chain's interlinks is for reducing the price gap of FFV between the farmers and consumers. However, thorough adopting ASD, it really help manage the whole distribution chain more easily and convey the value of products more accurately. Farm-cooperatives and supermarkets' direct docking make them understand and trading off each other demand and information more effective without any extra conveying or advertising fees.

5.4 The importance of food quality and safety in fresh agricultural products’ distribution

According to our empirical research, we learnt that "agricultural super-docking" is neither the simple supermarkets’ procurement from the farming base, or the establishment of procuring relationship with farmers. Because “agriculture” is not specifically refer to the peasants, farming base or farming-cooperatives, but a long-term and stable integrating entity among supermarkets and all kinds of agricultural key issues, such as the planting and operating in the farming base; and capacity, quality and stability in the agricultural products’ supply, etc.

Therefore, besides the economic benefits, we should focus more on the social influence which agricultural super docking would lead. Supermarkets should pay more attention especially on their customers, they have to be responsible for their consumers’ benefits,
and in relation to the FFV, supermarkets' duty not only in enriching the species of fresh fruits and vegetables, but also guarantee the foods' quality and safe. Nowadays, market is more and more customer-driven, especially when consumers are having high expectations and varies preferences, which makes exacting demands (Osvald and Stirn, 2008). Consumers not only expect a more wide range of products, but also products that are highly safe and good quality.

Currently, the available Chinese domestic standards in agricultural production mainly include pollution-free food standards, green food standards and organic food standards which have been proposed by the National Agricultural Technical Extension and Service Center (NATESC), the China Green Food Development Center (CGFDC) and the China Organic Food Certification Center (COFCC), respectively. (Zhou, 2005)

In recent years, China has frequently experienced food safety scares due to problems related to pesticide residues. (Zhou, 2005) Therefore, the Chinese government is encouraging the adoption of food safety and quality standards by agricultural Cooperatives to ensure improved quality of the farming foods produced. Because the adoption of food safety and quality standards by China’s agricultural cooperatives serves as an important approach for monitoring production practices of the numerous small-scale farmers and thus ensuring food quality in the products produced by them.

As is known to everyone, the peasants control the most nation’s agricultural economy themselves, the overwhelming majority of agricultural products in China are been yielded and managed by every single individual farming family. However, due to the farmers’ personal low-quality, most of them don’t have strong initiative to accept new knowledge and apply advanced technology. Therefore, the single household farming and the excessive of quantity but quality of agricultural products have become the one of the biggest barriers of applying ASD.
As we mentioned in literature, supermarkets industry has very strict standard requirements on farming, picking, sortation and packing of fresh agricultural products. For instance, the national agricultural regulation on some vegetables can be harvested only after more than 7 days of using pesticides and some even need to be more than a couple of week (Hu, 2010). Besides the quality requirement, it’s very common that supermarkets have specified demand of weight and shape of Fresh fruits and vegetables. Through market research, we found that some supermarkets require each potato’s weight is over 150 grams; and each watermelon’s weight is around 4 kilogram to 5 kilogram. Otherwise, the shape of FFV in supermarkets’ shelves would be vary largely and ugly. (Hu, 2010)

Moreover, to meet the requirements of standardized production, industrialized management, chain store operations and socialized distribution, those hyper-supermarkets, like our interviewing objective, Yonghui, operate unified distribution, processing, storage, trading and transportation on fresh fruits and vegetables, as a result, shape the one stop chain among the farming base, wholesale market and FFV distribution. Since we already discussed, fresh fruits and vegetables are perishable, especially vegetables. The joint links extend the time to transit from the growers to consumers, which lead to the loss of quality and waste of resources. However, during the whole ASD distribution process, from procurement to sale, these markets implement totally closed cold chain control management in order to ensure the best quality of their fresh agricultural products and consumers’ food safety, and reducing the avoiding losses. Perishable goods must be transported as soon as possible under controlled conditions in order to maintain quality and minimize the loss of commercial value (Dolan and Humphrey, 2000).

'Fresh' food means 'as close as possible to the live animal or plant' and chilled food is not considered 'fresh'. As a result, more advanced transportation techniques and better logistical coordination are needed in order to reduce the loss of quality as much as
possible. All these add to the distribution cost and raise final FFV prices to consumers

Some supermarkets are interested in ASD, because it could lower their FFV purchasing cost. However, in fact, supermarkets would achieve price advantage only through the establishment of their own distribution centers, and really live up to the unified procurement, testing, processing, cold chain distribution. Otherwise, the outdated and unqualified logistic equipment will make ASD just in name but reality.

Of course, the investment of distribution center is too large to afford for those small and medium sized supermarkets, they don’t have enough capital to construct their own farming base and modern integrating logistic center, let alone the difficulties of reconfiguring the infrastructure, selecting location and training crew. (Hu, 2010)

5.5 Comparative case analysis of La Montanita Co-op

Started in 1976 in one location, La Montanita Co-op is a community-owned, consumer cooperative with four locations in New Mexico: Gallup, Santa Fe, Valley, Nob Hill. With over 1100 local products from approximately 400 local producers and 20% of total purchases and sales in local food, the Co-op is a leader in the local foods movement (Richman And Pepinsky, 2008). All stores offer fresh organic produce, bulk foods, local organic beef, lamb and other meats and cheeses, fair trade products and a wide variety of natural and organic groceries, freshly prepared deli foods, natural body care, vitamins and supplements(Richman And Pepinsky, 2008). Many of these products are organic, some are not, but all come from local farms and ranches. "In the 1980s and 1990s La Montanita shaped its image by becoming an activist co-op, which helped propel them into what has become a successful model for the store. Since then, they have continued to develop their niche as a small, neighborhood-based, community store that supplies as much local, organic food as possible to their customers."(Richman and Pepinsky, 2008)
According to the La Montanita's website, today, "La Montanita is over 13,000 member households strong, with a 9 person Board of Directors elected to represent the membership. The Co-op employs over 200 full and part-time staff with an emphasis on team management within each department, pays a living wage and provides a generous employee benefit package".

5.5.1 La Montanita value: Fresh, Fair, and Local

5.5.1.1 Fresh

"La Montanita believe fresh locally grown, unprocessed food provides the greatest nutritional value for your food dollar. Building relationships with small and mid sized family farmers committed to sustainable stewardship practices helps them provide the freshest high quality food available while strengthening the local economy." (http://www.lamontanita.coop/)

Though ASD is not as completely engaging in organic agricultural products as La Montanita does, however, customers in China also define and expect the "fresh" Vegetables and fruits as green as possible. Since ASD covers much wider regions than the La Montanita's organic products' distribution system, so it is very difficult to really put every single family farmers into the docking practice. However, ASD use farm-cooperatives as it’s the only intermediary to bring supermarkets and farmers closer. And both the essences of ASD in China and La Montanita's organic products distribution system are through the tight control and manage the prime supply end to guarantee the quality of their products in final market end.

5.5.1.2 Fair

"La Montanita believe in fair and just dealings at every level of our cooperative, from the soil and
the farmer to the consumer: "La Montanita support a living wage, just benefits and working conditions for their staff, local farmers, farm-workers and producers." (http://www.lamontanita.coop)

In relating to the fairness of La Montanita, Chinese ASD almost achieved the exact effect so far. Through the genuine and transparent exchanging information, and reasonable basis of price of FFV, ASD reached farmers, supermarket and consumers' triple-winning situation. Besides the consumer could get the cheaper price and supermarkets gain more profit on the same agricultural products; the farmers are the most beneficial party in ASD. As in appendix our interview dialogue stated since in ASD supermarkets procure FFV from the farms co-operatives directly, they have more power in price setting. And to be more responsive to some sudden crisis, they also carry out with the "lowest guaranteeing price" on FFV to ensure the farmers' benefits. Hence, we could tell the "lowest guaranteeing price" of ASD has the same purpose with La Montanitas' "living wage" from perspective of fairness.

5.5.1.3 Local

"La Montanita believe a strong local/regional economy based on a network of relationships between producers and consumers not only provides the safest, freshest food but is an important tool in the creation of a cooperative and sustainable future." (http://www.lamontanita.coop)

As we mentioned above in the fresh value, ASD covers much wider regions than the La Montanita's organic products' distribution system. And due to the massive different tastes of consumers and uneven geographical distribution of various fruits and vegetables, it is impossible supermarkets purchase locally or from the same region. However, according to our interview and analysis, we know that Chinese supermarkets are also trying to find and experimenting a long-term balance for ASD’s stable and sustainable development.
Through various activities, including the “Fresh, Fair and Local” advertising campaign, the Co-op has begun the process of educating communities and consumers on the value of local products as well as working to tell the unique and individual stories of Food-Shed farming partners.

### 5.5.2 Building a Regional Food-Shed

The project "regional Trade Food-Shed" continues Co-op's commitment to local farmers and producers. "food-shed" means the flow of food from the origin and processed area to the its consumed place. Recently, this term has been revived as a way of looking at and thinking about local and sustainable food systems. "The Co-op's Food-shed project adds ancient agricultural regions, including the Mimbres Valley in the Gila, the White Mountain area and other mountain valleys for a regional food-shed that encompasses a 300 mile radius around Albuquerque." Farmers and producers throughout this area can sell their products to Co-op locations directly. If not, Cooperative Distribution Center(CDC) can not only provide their warehouse for them to expand their markets and save on gas and transport costs, but also offers local producers post-harvest and production cooler/freezer space and storage. (http://www.lamontanita.coop/)

By February 2007 the Cooperative Distribution Center (CDC) has 6,000 sq. ft. of dry storage space which was outfitted with 1,500 sq. ft. of refrigerated space and 500 sq. ft. of freezer space in total. This facility and its staff are the foundation for their work with regional producers to establish a more sustainable food-shed in their regions. "This initiative is creating wholesale markets and providing product pick-up and distribution, supply delivery service and refrigerated storage for local farmers and producers." (http://www.lamontanita.coop/)

In this Food-Shed project, it is of great value for us to use for reference that Cooperative
Distribution Center (CDC) could be utilized by farmers and producers as well, besides the La Montanita Co-op itself. As we have already mentioned before, the professional third-party FFV distribution centers are not constructed in China. This industry is in quite early stage and hard for initial starting. One of the reasons behind that is firstly that the investments for starting the business are significant because of the constructions of the professional facilities and equipment. However, without those base installations, the distribution centers cannot work at all. In La Montanita Co-op, they provide distribution services for farmers and producers to expand their markets, which save the resources, for example gas, and reduce the transport costs. For some large-scale supermarkets in China, they have their own distribution center. But they are just for self-use.

### 5.5.3 Co-op Trade Initiative

The Co-op Trade Initiative furthers their support of local farmers, gardeners, ranchers and producers. This Initiative works to create wholesale opportunities for local producers whether they sell directly to the four co-op locations or utilize the Food-Shed’s Cooperative Distribution Center’s warehouse and trucking services. It also “closes the loop” by bringing needed supplies during product pick-up at farms and drop-off depots throughout the Rio Grande Valley region and related agricultural areas in a 300 mile radius around Albuquerque. (http://www.lamontanita.coop/)

As continuous education is a Cooperative principle the Co-op Trade Initiative works with growers to improve post-harvest handling and packing for the wholesale market. The Co-op also utilizes its resources to educate consumers on the true costs of local production and the importance of fair prices and just treatment of people and animals throughout the food production, distribution and consumption process. The Co-op Trade Initiative supports sustainable practices at every level of Co-op organization. (http://www.lamontanita.coop/)
The lessons to be drawn from this program are that the Co-op Trade Initiative works with growers to provide continuous education to improve post-harvest handling and packing for the wholesale market. According to the assistant manager in Yonghui supermarket,

"In practice, due to the educational gap between our employees and the farmers, we have to increase our intimacy and communication to be against these insufficient, missing and misunderstanding information-exchanging."

(Mr. Wang, 110317)

In China, majority of farmers are low educated. They know little about plant with scientific methods. In the traditional distribution model, farmers and supermarkets are connected by wholesalers. In this model, farmers are responsible for all the plant process and transportation of vegetables from farm land to local wholesalers. Their relationship is more like buyer and seller, instead of cooperation. However, in ASD model, farmers or farmers’ co-operative societies cooperate with supermarkets. Thus, La Montanita Co-op does quite well to provide continuous education for producers in the fields of post-harvest handling and packing, and so on. It could be successful experiences of us to go by to improve the quality of products and the efficiency of distribution.
6. Recommendations

Integrating the analysis of ASD implementation and secondary case study on La Montanita, we recommend four points to improve the implementation of ASD as following.

6.1 Construction of professional third-party FFV distribution centers

The professional third-party FFV distribution centers are not constructed in China. This industry is in quite early stage and hard for initial starting because of the significant investments for the professional facilities and equipment’s. Therefore, supermarkets that own their own distribution center are able to implement ASD successfully. However, such supermarkets just account for a small part. As a result, in order to implement ASD widely and solve the improve FFV distribution efficiency broadly, it is a necessary condition to construct professional third-part FFV distribution centers. Although it is time-consuming and capital-consuming, it is still required and essential to construct professional third-part FFV distribution centers, in order to solve related FFV industry problems essentially. Until then, most of the medium and small-scale supermarkets are unable to implement ASD.

6.2 Share of existing private FFV distribution centers

Besides construct professional third-part FFV distribution centers, a more efficient way to solve the problem is to share the existing private FFV distribution centers as much as possible. For instance, in La Montanita Co-op, they provide distribution services for farmers and producers to expand their markets, which save the resources, for example
gas, and reduce the transport costs. In China, some large supermarkets have already built their own distribution center for example, Yonghui supermarket. They are able to provide some distribution services for the others. For instance, if they just distribution for their own stores, the loading rate is low and some spaces on the delivery truck are vacant sometimes. If they provide distribution services to others, three advantages could be achieved. Firstly, it could be a source of profit for the supermarket. Secondly, ASD could be implemented for more supermarkets that don't have their own distribution centers. Finally, it could save resources, for example, gas, and reduce the transport costs.

### 6.3 Establishing exchanging information norm

In relating to the problem of insufficient, missing and misunderstanding information-exchanging between the farm-cooperatives and supermarkets, we analyzed and conclude some countermeasures as follow. First, they should strengthen the construction of ASD’s regulation. Both of supermarkets and farm-cooperatives have to clearly define the "leader" and "sequence" during the information-exchanging process, for example, the supermarkets only communicate with the farm-cooperatives, who is the representative of the farmers in the same region, then the farm-cooperatives summarize and convey the relating information with the farmers, and conversely, if the farmers have problems and suggestions to response to supermarkets, they also need farm-cooperatives' sort out and unify all kinds of information, then convey to the supermarkets.

### 6.4 Introducing information technology and strengthen farmers' education
Moreover, the supermarkets should assisting these farmers learn to use information technology physically and economically, which means besides the supermarkets arrange the relating training for farmers, they also need to buy some equipment and facilities for public farmers' use in ASD, such as computer and fax machine. We think it is a long-term investment, through these movements; the supermarkets would not only improve the farmers' ability of using information technology in ASD distribution, but also gain farmers' trust and establish a stable and sustainable cooperative relation. However, the farmers may not be willing to accept these "novel technology", so the supermarkets need to use some proper advertisement and propaganda to explain how efficient and convenient which the information technology could bring to farmers.

7. Limitations

7.1 The scarcity of interview experience

Since both of us don’t have the interviewing experience before, we don’t really know how to conduct a efficient interview. Even the interviewee could tell us we are green of asking questions, his warm and cooperative attitude really helped us a lot. Although we practiced much on interview and prepared so many questions, there were still a lot of “silent and awkward” moments. Therefore, due to our scarcity of interview experience, we know that we still have much room to improve on our interviewing abilities.
7.2 The limitation of telephone interview

Because our interviewee were really busy during the period we were in Beijing, we cannot ask all the preparing questions face to face one time. So we conducted a second interview through telephone, which limited and affected the quality of our acquiring information. Above all, in the telephone interview, we are lack of interaction with our interviewees, such as eye contact and body language. Secondly, it’s much easier to lose concentration for our interviewees when you interview someone through telephone, since you are not in his field of vision, he is inclined to feel too ease to focus on your questions. Finally, face-to-face interview usually leads a longer conversation, comparing to telephone interview. All the points above weaken our interviewing quality.

7.3 The limitation of comparative case analysis

We have to admit that the secondary data we found were not perfectly aiming at our research question, even though it is quite tight related. No matter how the case of La Montanita Co-op closed to the supermarkets who adopting ASD in China, it is still not as good matching as the information we get from our interview of Yonghui supermarkets.

Moreover, all the data we stated in the comparative case analysis are from the La Montanita Co-op's official website. However, we do know that use only one source to collect information is not supportive; convincing and comprehensive enough to study and analyze our research. But due to ASD is a novel phenomenon in China, it is very difficult to find an absolute fitting case to do the comparative analysis. La Montanita Co-op is the best option in our capacity of searching range, and still the source of La Montanita Co-op’s data is limited, which eventually left defect and regret in our thesis.
7.4 Limitation of results of thesis study’s universality

As we mentioned all the time, agricultural super-docking is too novel to put into practice massively, which is also triggered our interest to further study of this new distribution. However, every coin has its two sides, just because there are only relative minority of supermarkets in China adopted ASD, which accordingly limits the quantity of our researching objects. In our empirical part, we finally selected "Yonghui" supermarkets as the typical model to analyze ASD. Thereby, we can't say the analysis and recommendation in this thesis would be fitting perfectly to all the supermarkets who are trying ASD in China, however, we also believe our research of ASD could be helpful to a certain amount of supermarkets who have similar condition with "Yonghui" supermarkets.

8. Conclusion

In this paper, we start with literatures related to distribution, as well as the factors influencing FFV prices and distribution cost in China. Then, we illustrate Current state and problems of FFV distribution system in China. Drawing on the study conducted in Yonghui supermarket in China, integrating with related literatures, we analyzed the feasibility of ASD implementation on fresh fruits and vegetables distribution in China firstly by Porter's five forces analysis and SWOT analysis, secondly by analysis the importance of food quality and safety in fresh agricultural products’ distribution, and finally by analysis the importance of transferring information in fresh agricultural products’ distribution. Then, we present a secondary case study on La Montanita Co-op in New Mexico. At the end of this paper, integrating the analysis of ASD implementation and secondary case study on La Montanita, we recommend four points
to improve the implementation of ASD as following: construction of professional third-party FFV distribution centers, share of existing private FFV distribution centers, establishing exchanging information norm and introducing information technology and strengthen farmers' education.

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Appendix

Original interviewing dialogue

NB: The language we used during the whole interview is Chinese; we recorded and translated them into English as follow.

Time, place and mean: Beijing, 2011-3-17, face to face interview

1 How is the overall FFV market in Beijing now? And how is the demand in this market?

As for supermarket industry, the FFV market is just like a piece of "Chicken rib, tasteless when eaten but a pity to throw away. However, because the profit of the whole market is relatively low compared with the other items in supermarkets, it could not be abandoned due to the significance of attracting more customers for supermarkets.

As to the demand of this market, without doubt, it is quite high since there are large numbers of people who need to eat FFV every day in Beijing.

2 What is the potential of FFV in terms of profit could be achieved, compared with the other items in the supermarkets industry?

For the current situation in supermarket industry, the profit of FFV is about 12-15% in average, sometimes even lower than 12%. However, as mentioned above, it is crucial to increase the flow of customers in order to promote the sales of other products.

3 Where does your supermarket procure FFV from?

Our supermarket’s FFV supply is decided by the species of products. Either of them is from the farmer co-operatives or is still from the wholesalers in traditional way.
4 Generally speaking, how is your FFV sales compared with other competitors?

For now, our sales of FFV is still unstable since the distribution we are using is too new to control, it is in the trial process. However, in the short run, since we are adopting this method, our FFV sales higher than most of our competitors.

5 Then, how do you achieve such this advantage in sales?

It is because some of our FFV products are cheaper than other supermarkets.

6 What are the reasons behind the lower prices for those FFV products?

As we discussed above, we are trying a new distribution system for some FFV that named Agricultural Super Docking (ASD), which means we purchase some FFV products from the farms co-operatives directly, instead of from the traditional wholesalers. With adoption of the new method, we have more autonomy in setting the price.

7 Excuse me, why the prices of the FFV purchased from farmers’ co-operatives are lower than that from wholesalers? And how does ASD works? Will you explain these more specifically?

If we make FFV purchase from farmers co-operatives directly, many intermediate links would be reduced compared with procurement from wholesalers. In traditional distribution model, the flows of FFV go through much more links as follow: Farmers-local agents- local markets- regional stock markets- wholesaler- supermarket suppliers-supermarket. Therefore, ASD reduces our procurement cost largely by cutting down
these intermediate links.

8 well, after docking with farmers, are there any changes in terms of sales, prices and quality respectively compared with before? Judging from the current situation, sales have increased; prices are lower and quality is as good as before.

9 Another question about this ASD, who is in charge of the FFV transportations from farmers to supermarkets, is the farmer’s co-operatives or yourself?

We are responsible for the transportation.

10 Then, how do you guarantee the quality of FFV products and manage the loss during the transportation?

Our company has always been attaching importance to transportation and management in distribution system. We have our own distribution center with exquisite equipment and well trained transporting employees. Therefore, we are confident with our ability in controlling quality and managing loss in FFV distribution.

11 So do you mean if there is any loss, you will be responsible for this alone?

Before we adopted ASD, the loss caused by transportation is charged by wholesalers when we corporate with them; and the loss during the sales process in the supermarket is shared responsibility for both of us.

But right now, yes, we are responsible for all the losses caused by transportation and even during the sales process, the farmers can’t afford this.
**Time and place: Beijing, 2011-03-24, telephone interview**

12 Comparing to the traditional FFV distribution, does ASD make you more profit?

Yes, it does. As I mentioned, since we procure FFV from the farms co-operatives, we have more power in price setting. The truth is the adoption of ASD makes farmers, our supermarket and consumers triple-wining situation.

13 Well, then is there any other troubles and barriers you encountered during the period of adopting this new ASD distribution?

ASD has very strict requirements for the distribution; the inputs are especially large. For our supermarket, it's not a particular problem, but for most small and medium size supermarkets, they may not be capable of affording such high cost. Overall, the threshold of entering ASD is relatively high.

Since we are in the practicing phase of ASD, the entire new distribution system is not mature yet, there are still a variety of vegetables cannot be applied in this method. Therefore we have to continue cooperating with wholesalers on some of the FFV’s purchase, but we have been trying to exploring and negotiating new FFV species with more farms co-operatives.

Moreover, both of our supermarket and farms co-operatives need time to prove and overcome the worries of credibility and risk in this new ASD distribution.

Theoretically, ASD provides us a more transparent, genuine and efficient platform of information on FFV. However, in practice, due to the educational gap between our employees and the farmers, we have to increase our intimacy and communication to be against these insufficient, missing and misunderstanding information-exchanging. We
are expected to improve the situation.

The worse situation is the farmers have troubles and worries in using electronic technique in both exchanging information and money in ASD distribution. Comparing electronic transaction, they prefer ready money business; also they like face to face talking experience and narratives rather than using E-mail or tele-meeting with statistics and charts. All of above problems no doubt increase our employees’ working load. We are still thinking and working on how to train our employee and farmers to corporate more smoothly and comfortably.

14 Are there any permission needs to get from local government to adopt ASD?

The Government shows a very supportive attitude on this new distribution, so the handling of the documents and procedures of ASD is not difficult at all. In 2010, the local government even economically assists those supermarkets who are implementing ASD.

15 If the ASD distribution have so many advantages, why there are still more supermarkets using the traditional distribution? Besides the high cost of entering threshold, is there any other reason behind?

I think the major reason is ASD is too novel to apply. There are no precedents before; most supermarkets are still in “waiting and observing” phase.

16 Compared with the previous purchase from the wholesaler, in some special urgent situation (like SARS), could the ASD make delivery in time? If not, who will be responsible for this loss?

It is a serious problem we have been considering all the time, on time delivery is very
important for FFV distribution, the only counter solution for us is making the exchanging information with farms co-operatives and farmers as accurate and timely as possible, only in such case, we can be more responsive to those sudden crisis. And in relating to ensure the farmers’ benefits, we also come up with some “lowest guaranteeing price” on FFV.

17 Well, speaking of those farmers’ benefits, what else could they get from this new ASD distribution.

As I just said, besides they don’t have to worry about their FFV’s sales, they also could get a better reasonable price of their crops. Moreover, they will acquire more useful beforehand marketing information, then make more corresponding wise plans for the next years’ farming and finally avoid wasting more of their physical and economical inputs.

18 Regarding to this new distribution method, what is its biggest drawback and how to correct it?

As we already discussed before, the major problems are the insufficient information exchanging among our supermarkets, the farms co-operatives, farmers and the relative scarcity of varieties on FFV in ASD.

19 For every single vegetable’s procuring, are you supplied by only one or many farms co-operatives?

Well, “One supermarket-to-many farms co-operative’s FFV procurement in ASD is necessary. Considering either of quantity or species relating Chinese farming’s geographical distribution, it’s impossible that only one farms co-operatives would meet our demands of marketing.
20 Considering to the results you have achieved with ASD so far, besides FFV, are you willing to trying more other kinds of products with this distribution?

Definitely, yes! We do think about expanding ASD ‘s application in more kinds of products, like meat and seafood.

21 So do you think ASD will be popularized among supermarket industry eventually?

Basing on our experience and observation, plus the local government support, we have faith that more and more supermarkets will like start trying ASD distribution.