Retail Supply Chain Management
Objectives

- Analyze the key strategic issues in retail supply chain management
- Learn the development and current status of supply chain management in China’s transitional economy
- Gain insight into the challenges and opportunities in developing supply chain in China
- Understand the importance of supply chain management in retail success of MNREs in China
- Discuss how to develop strategic advantages through supply chain management in China for MNREs.
Outline

- Current Status of Supply Chain Management in China
- Retailer and Supplier relationship
- Cold Chain for Grocery Items
Fundamentals in Supply Chain Management

Illustration of Supply Chain (Levy and Weitz, 2004)
Information and Merchandise Flow
(Levy and Weitz, 2004)
Fundamentals in Supply Chain Management (Cont.)

- Strategic Importance of Supply Chain Management
  - Opportunity to Reduce Costs
  - Provide Value to Customers
  - Greater Sales, Higher Profit, and Improved Return on Investment
1. Current Status of Supply Chain Management in China
Objectives

- Learn the supply chain management practices of MNREs in China
- Understand the current status of the supply chain management of Chinese retailers
- Identify the major problems and opportunities in retail supply chain management in China
- Analyze the direction of the future development of supply chain management in China
Supply Chain Management of Metro in China

- **Metro**
  - Centralized purchasing and distribution
    - Frozen food and fresh food distribution center
    - Cold storage and dried food distribution center
    - Non-food merchandise distribution center
  - Information system
    - RFID (Radio Frequency Identification System)
Wal-Mart’s success is its information and supply chain management systems.

- **Advanced information system**
  - check all store inventories in the world in one hour.
  - Replenishment in 2 days

- **Transportation**
  - Own transportation vehicles.
  - Satellite system and GPS on all trucks.
Supply Chain Management in Walmart (Cont.)

- **Distribution Centers**
  - 110,000 square meters and .2 billion products
  - Different types of distribution centers: food, non-food, Sam’s club, apparel, imported products, and return products
  - 320 kilometers and 100 stores
  - Located in the center of the 100 stores
  - Less than one day transportation
  - Located at suburb
  - 85% merchandise go through distribution centers.
  - It has three distribution centers in China
Walmart in China

- Challenges for Walmart in China
  - Walmart’s advantages in information system and supply chain management haven’t been fully achieved in China.
    - Don’t have many stores
    - Lack of national suppliers
    - Underdeveloped transportation and supply chain system
    - Lack of information network with suppliers
Supply Chain Management of Carrefour in China

- Carrefour
  - suppliers’ distribution system + distribution center
    - More than 20 distribution centers
    - Localized purchasing and distribution
      - 85% products were locally purchased.
Information and Supply Chain Management System of Chinese Retailers

- Information and supply chain management systems in Chinese retailers fall behind.
  - Gome adopted supply chain management system in 2002.

- Traditionally rely on suppliers’ distribution system (2003)
  - 74% supplier distribution
  - 13% third party
  - 13% self distribution
Distribution centers

- Small
- Low level of modernization
  - Not fully computerized
  - Few warehouses with air conditioners and refrigerators
  - Short of specialized equipment and vehicles
- Lack of functions
  - Storage
- Low efficiency (Zheng and Yi, 2006)
  - Half of distribution facilities haven’t been fully utilized
  - The square feet of distribution centers/ those of stores is 1/3 for Chinese retailers; 1/10 for Walmart
  - Replenishment time for Chinese retailers is 15-20 days; 2 days for Wal-mart
The information system and supply chain system have developed quickly in recent years

- 1,500 distribution centers established by chain stores by the end of 2007
- It is common for a supermarket to have 60% of self distribution.
- Some retailers have its own fresh food distribution center and “cold chain”
Distribution System in China Retail Industry

- Fewer intermediates and channel is becoming flatter and wider
  - 60% are purchased from dealers
  - 40% are purchased directly from manufacturers
  - Larger retailers have a higher percentage of direct purchase; small retailers have a higher percentage of purchase from dealers
Distribution System in China Retail Industry

- **Market concentration is increasing** (China Supplier Research Center, 2009)
  - CR4 and CR8 for supermarket are 35.16% and 56.90% respectively in 2005
  - CR4 and CR8 for supermarket are 38.02% and 59.56% respectively in 2008

- **Retailers are gaining power** (China Supplier Research Center, 2009)
  - 82.05%, commission
  - 11.22%, buy
  - 6.73%, joint-running

- **Wholesalers become fewer and larger**
2. Retailer and Supplier Relationship
Objectives

- Understand the concept of slotting fee and its influence on retail industry
- Identify the major problems existing between retailers and their suppliers in China
- Learn the factors that influence buyer and supplier relationship in China
- Know the current status of the buyer and supplier relationship in China
Retailer and Supplier Relationship in China

- **Slotting fee (Allowance)**
  - A fee charged to suppliers by retailers in order to have their product placed on shelves.
  - Retailers may also charge promotional, advertising and stocking fees etc.

- Carrefour charges a variety of slotting fees.

- Wal-Mart announced that it does not charge any slotting fees from its suppliers in China at the beginning. However, it began to charge slotting fee later.
Examples of Carrefour’ slotting fees and other fees in China

<table>
<thead>
<tr>
<th>Items</th>
<th>Fees</th>
<th>Items</th>
<th>Fees</th>
</tr>
</thead>
<tbody>
<tr>
<td>French festivals</td>
<td>100,000 Yuan/year</td>
<td>Chinese festivals</td>
<td>300,000 Yuan/year,</td>
</tr>
<tr>
<td>New store opening</td>
<td>10,000-20,000 Yuan/year</td>
<td>Old store renovation</td>
<td>10,000-20,000 Yuan/year</td>
</tr>
<tr>
<td>Demonstration and posters</td>
<td>2,340/ store, 10 times/year;</td>
<td>End-cap</td>
<td>2,000/store</td>
</tr>
<tr>
<td>New product</td>
<td>1,000/store</td>
<td>Profit return</td>
<td>8% of sales</td>
</tr>
<tr>
<td>service fee</td>
<td>1.5%-2% sales</td>
<td>consulting fee</td>
<td>2% of sales</td>
</tr>
<tr>
<td>shelf management</td>
<td>2.5% of sales</td>
<td>unconditional return</td>
<td>3%-5% of sales</td>
</tr>
</tbody>
</table>
Retailer and Supplier relationship (Cont.)

- Effects of Slotting Fee
  - Benefits of suppliers, especially middle and smaller suppliers
    - Average 25%-28% sales
  - Consumers’ benefits
    - New product, quality, and variety
  - Nation’s benefits
  - Retail industry
Administrative Measures for Fair Transactions Between Retailers and Suppliers

- By Ministry of Commerce, National Development and Reform Commission, State Taxation Administration, State Administration of Industry & Commerce, and Ministry of Public Security and effective on 110/15/2006,

- Applicable to retailers with more than 10 million RMB Sales.

- Maximal fine is 30,000 RMB.
Administrative Measures for Fair Transactions Between Retailers and Suppliers

- Retailers should not conduct the following unfair transactions:
  - Refuse to accept products with no excuse, ask suppliers to pay for the damage to goods, ask for return profit, and request supplier to purchase certain product or service.

- Retailer should not charge fees in the following conditions
  - For signing or renewing a contract; charge fee on store bar code for products already having national approved bar codes; the fee for store bar code should not exceed its cost; store renovation or decoration; charge fees for festival, new store opening, store anniversary etc without any promotions; any other cost that are not directly related to the selling of products.

- Payment should be made in 60 days, and retailers should not delay its payment without reasonable excuses.
Challenges for Carrefour

- Its relationships with suppliers become worsen.
  - E.g., 11 famous domestic suppliers of roasted snacks resisted to provide products to Carrefour in order to against high slotting fees.
Retailer and Supplier Relationship (Cont.)

- Challenges for Walmart
  - Chinese suppliers do not give Walmart the lowest prices.
The Retailer and Supplier Relationship Survey (China Supplier Research Center, 2009)

- 426 valid questionnaires
- Retailers have greater power over suppliers

- Suppliers have no negotiation power, 77.67%
- Suppliers have greater negotiation power than retailers, 6.31%
- Retailers and suppliers have equal negotiation power, 10.68%
- Hard to say, 5.34%
Price Reduction During Negotiation

- <5%, 33.68%
- 5%-10%, 42.11%
- 10%-20%, 16.32%
- >20%, 7.89%
Contract Implementation

- Retailers implement contracts, 55.40%
- Retailers change contracts, 30.99%
- Retailers revoke contracts, 11.74%
- Both retailers and suppliers do not implement contracts, 1.88%
Payment Period

> 6 months, 9.27%

3-6 months, 16.56%

1-3 months, 47.02%

< 1 month, 27.15%
Profit Return

- >10%, 16.67%
- <3%, 15.15%
- 3%-5%, 36.87%
- 5%-10%, 31.31%
Satisfaction with Suppliers

- Strategic Cooperation: 3.87
- Marketing Cooperation: 4.43
- Supply Chain Cooperation: 3.63
- Customer Service: 3.57
Distribution System in China Retail Industry

- Products are mainly distributed by suppliers

- Distributed by Suppliers, 59.56%
- Distributed by Retailers, 31.87%
- Distributed by the Third Party, 8.57%
Supply Chain Management in Hongyan Supermarket

- **Background**
  - Located at Chengdu
  - 150 stores and 3,000 employees
Supply China Management in Hongyan Supermarket

- Distribution centers
  - Types
    - Food (limited cold chain) distribution center
    - Non-food distribution center
  - Equipment
    - Forklift (20), roll container (11), crane (2), platform lifter (34), tray (124)
  - Warehouse
    - Rented
Supply Chain Management in Hongyan Supermarket

- Transportation
  - 90% distributed by suppliers and 10% by self.
  - 7% self distribution for fresh food

- Information system
  - Replenishment is based on experience
    - Not enough in midseason and leave unused in off season
  - Bar code on 10% boxes and its bar codes do not connected to suppliers bar codes.
Supply Chain Management in Hongyan Supermarket

- Inventory
  - Average turnover is 21
  - Value of inventory is 4.3 Million RMB

<table>
<thead>
<tr>
<th></th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Store</td>
<td>20</td>
<td>23</td>
<td>29</td>
<td>36</td>
</tr>
<tr>
<td>Investment (Million)</td>
<td>1.7</td>
<td>2.3</td>
<td>3</td>
<td>4.4</td>
</tr>
</tbody>
</table>
Supply Chain Management in Hongyan Supermarket

- Combined Distribution
  - 50-70% for central cities
  - 30% for both cities and rural areas
  - The goal is “order today, delivered tomorrow”. However, products are often delivered after 48 hours or even 1 week.

<table>
<thead>
<tr>
<th></th>
<th>Distribution center /store (acreage)</th>
<th>Number of Stores/Number of distribution Center</th>
<th>Turnover (Day)</th>
<th>Distribution Radius (KM)</th>
<th>Transportation distance (KM)</th>
<th>Store/vehicle</th>
<th>Combined distribution rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hongyan</td>
<td>1:3</td>
<td>20</td>
<td>21</td>
<td>40</td>
<td>200</td>
<td>2</td>
<td>48%</td>
</tr>
<tr>
<td>Walmart</td>
<td>1:10</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3. *Cold Chain for Grocery Items*
Objectives

- Understand the importance of cold chain to retailers
- Learn the development and current status of cold chain in China
- Identify the major problems and opportunities in the development of cold chain in China
Cold Chain in China

- Cold chain is a temperature-controlled supply chain.
  - Uninterrupted series of storage and distribution activities which maintain a given temperature range.
  - It includes transportation, load and unload, processing, storage, and selling.

1: Information source: China Franchising & Chain Store Association (2009), Investigation Report on Supermarket Chains’ Fresh Food Supply Chain.
Why Cold Chain?

- Some products needs cold or frozen storage
  - Frozen food, milk, and tofu etc.

- Extend the shelf life of fresh food

- Prevent loss and improve food safety
  - 20%-30% food loss occurs in transportation or storage
# The Relationship between Temperature and Shelf Life

<table>
<thead>
<tr>
<th>Product</th>
<th>Transportation</th>
<th>Shelf Life (at 1 °C)</th>
<th>Shelf Life (at 3 °C)</th>
<th>Shelf Life (at 5 °C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meat</td>
<td>2.5 days</td>
<td>7 days</td>
<td>5.5 days</td>
<td>4.5 days</td>
</tr>
<tr>
<td>Sea Food</td>
<td>2.5 days</td>
<td>5 days</td>
<td>3 days</td>
<td>1 day</td>
</tr>
<tr>
<td>Strawberry</td>
<td>2.5 days</td>
<td>10 days</td>
<td>7 days</td>
<td>3 days</td>
</tr>
<tr>
<td>Salad</td>
<td>2.5 days</td>
<td>12.5 days</td>
<td>10.5 days</td>
<td>7.5 days</td>
</tr>
</tbody>
</table>
Why Cold Chain?

- Increase sales and profit
  - Jingkelong supermarket built up fresh food distribution center in 2006.
    - The sales and gross profit of vegetable and fruits increased 50% and 5% respectively
    - Gross profit of pork increased 4-6%
Supply Chain Management

Module

David F. Miller Center for Retailing Education and Research

Factory Food

No country has embraced the movement toward convenience food, packaged
frozen foods, or targeted markets more than the United States. People
who live in the U.S. spend more on food and buy more packaged
foods than people in any other country. This is not surprising,
since the United States is the leader in the production of
prepared food products. The United States also leads the
world in the production of frozen foods. In fact, the
United States produces more frozen foods than any
other country.

FRESH FOOD

Vegetables

Fruit

Eggs, nuts, and beans

Meat and seafood

Processed, frozen, or canned ready-to-eat
meats

Soup and snacks

Snacks and candy

Pasta

Bakery goods

Dairy products

TOTAL

United States

Spain

France

China

Japan

South Africa

Brazil

Russia

Total

001

218

203

105

88

88

88

205

161

68

81

78

132

55

229

MARTHA FAIRFIELD

METRICS

Factory Food


T. Colin Campbell, a nutritionist at Cornell
University, said that “there is a lot of money
being spent on convenience food, but it is
probably not good for health. People who buy
processed foods are likely to be less healthy
than those who buy fresh foods. It is
important to eat fresh foods, because they
contain more nutrients and fiber.”


The United States is the world’s largest producer of
frozen foods. In 2008, the United States produced
more than 30 million tons of frozen foods. The
United States is also the world’s largest importer
of frozen foods. In 2008, the United States
imported more than 10 million tons of frozen
foods.


The United States is the world’s leader in the
production of canned foods. In 2008, the
United States produced more than 30 million
tons of canned foods. The United States is also
the world’s largest importer of canned foods.
In 2008, the United States imported more than
10 million tons of canned foods.
Cold Chain in China

Overview

- Integrated cold chain is rare in China
  - Cold chain breaks when unloading products for 20-30 mins
- Food needs cold or frozen storage
  - 90% retailers use cold chain.
  - Cold chain is broken in some links.
- Fresh agricultural products
  - Mostly transported and sold in normal temperature.
- The rotting rate is 35% for fresh food; 10%-15% for meat and fish
  - 5% in developed country; 3% in the U.S
The Sources of Food Loss

- Transportation, 43%
- Sort & Pick, 29%
- Upload & Unload, 14%
- Others, 14%
Treatment for Food Loss

- Loss, 57%
- Re-processing, 29%
- Return, 14%
Centralized vs. Store Purchasing

- Centralized Purchasing: 89%
- Store Purchasing: 7%
- Both: 4%
Sources of Fresh Food

- Farmers, 16%
- Wholesalers, 29%
- Both, 55%
Temperature Check

- Surface Temperature, 23.08%
- Center Temperature, 27.47%
- Refrigerated Truck Temperature, 21.98%
- Touch and Sight, 35.16%
- Others, 3.30%
Distribution Centers of Supermarkets

- Already Have Fresh Food Distribution Center, 65%
- Fresh Food Distribution Centers are under Construction, 15%
- No Fresh Food Distribution Center, 20%
Distribution Center

- Fresh Food Distribution Center
  - Relatively small
    - <5,000 m², 75%
    - < 500 SKUs, 68%
  - Short of high quality refrigerated warehouse
  - Lack of functions
    - No processing, 57%
The Size of Distribution Centers

- <1,000 m²
- 1,000-5,000 m²
- 5,000-10,000 m²
- >10,000 m²
Transportation

- Mainly use suppliers or third party for distribution.

- 0.3% refrigerated trucks

- 15% fresh food was transported using refrigerated trucks in China; 90% in the developed countries

- 80%-90% fruits, vegetables, meats and aquatic products are transported using normal trucks.
Transportation (Cont.)

- 29.67% retailers own refrigerated trucks
- 36.26% use suppliers’ refrigerated trucks
- 13.19% use the third party refrigerated trucks rented by suppliers.
- 5.34% use the third party refrigerated trucks rented by supermarket.
Business Model for Selling Vegetables and Fruits

- Mainly Self-running, 43%
- Purely Self-running, 37%
- Mainly Joint-running/for Rent, 15%
- Purely Joint-running/for Rent, 5%
Consumers’ Preference regarding Different Retail Formats

- **2005**
  - Hypermarket: 28%
  - Supermarket: 58%
  - Convenience Store: 8%
  - Free Market: 6%

- **2007**
  - Hypermarket: 51%
  - Supermarket: 42%
  - Convenience Store: 4%
  - Free Market: 3%

- **2008**
  - Hypermarket: 46%
  - Supermarket: 44%
  - Convenience Store: 7%
  - Free Market: 3%
Sales of Fresh Food/Total Sales

- <10%, 40%
- 10%-20%, 45%
- >20%, 15%
Other Issues about Cold Chain in China

- No industry standard and regulation
- Management problems
  - Low efficient in loading and unloading
References
