INTERNATIONAL DISTRIBUTION
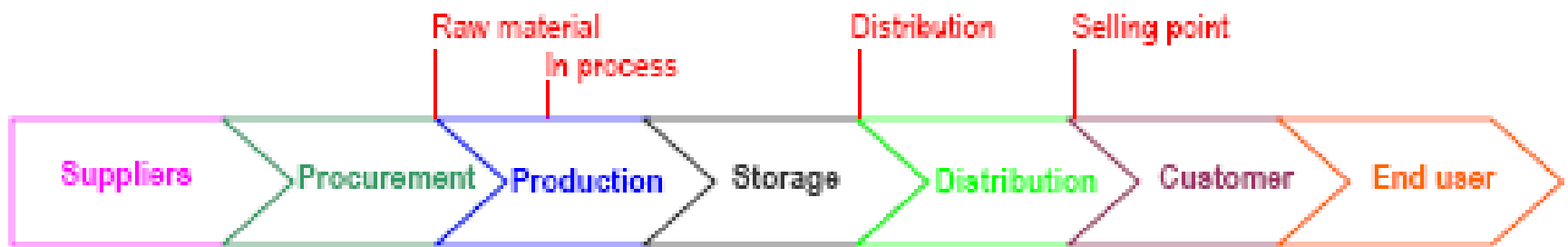
Frédéric Gauthier

Part I- global supply chain
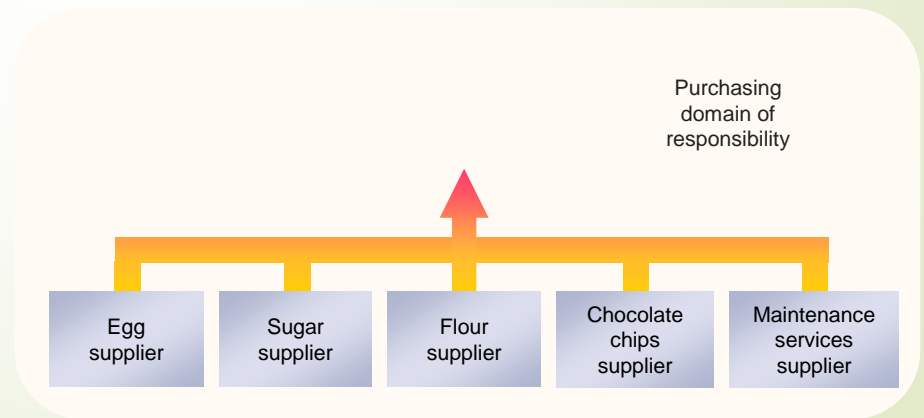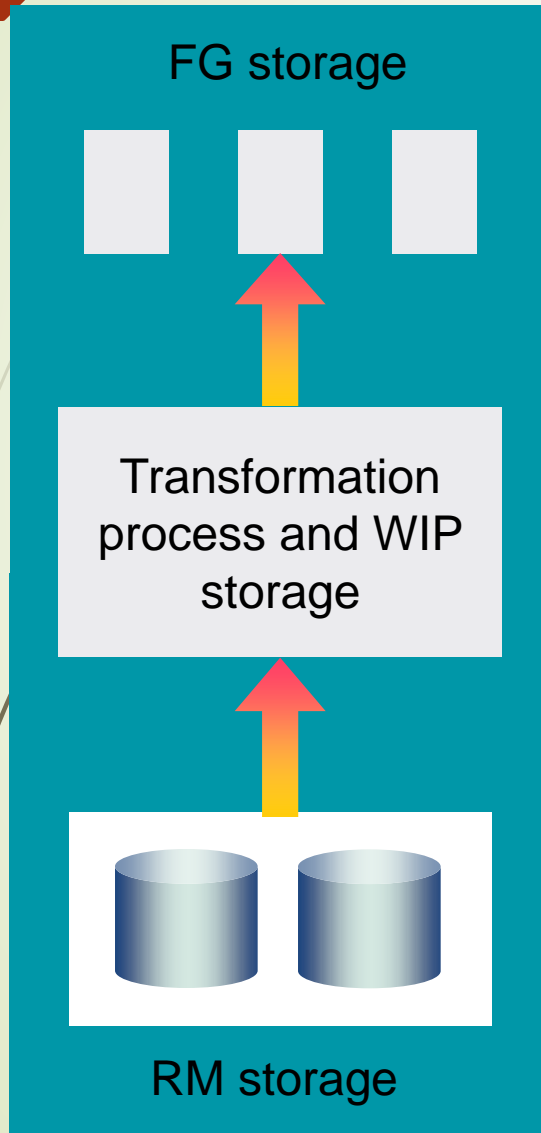
1- The bullwhip effect

2- From domestic to global supply chain

3- Vertical integration issues

Introduction

Supply chain answers to

Geographic distances

Forecasting difficulties

Infrastructural inadequacies

Explosion products variety

An example of a simple Supply Chain
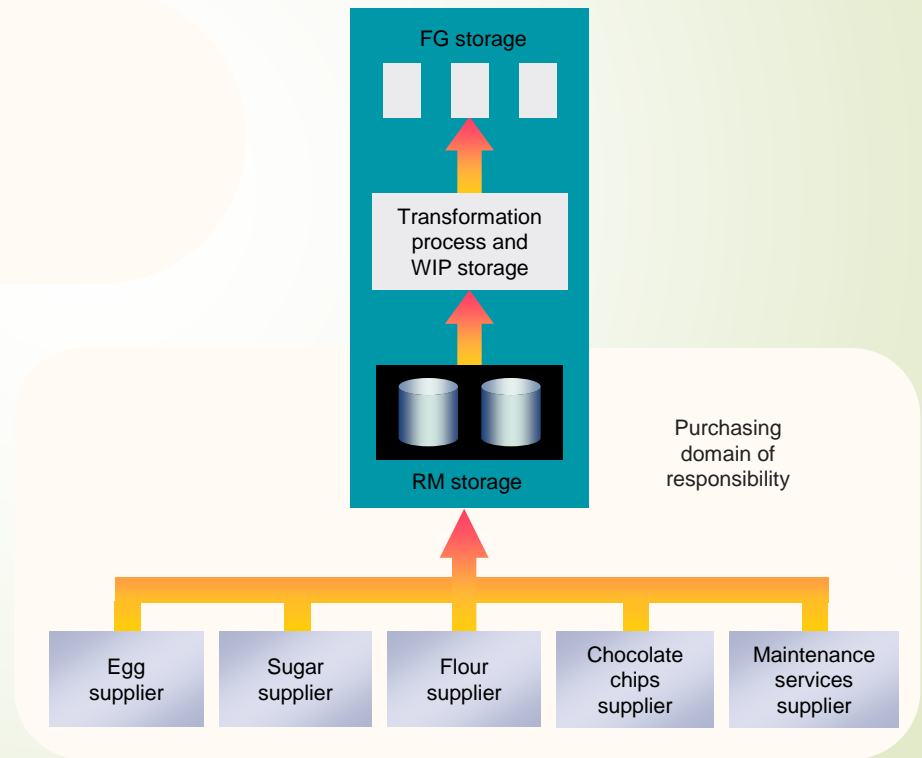
Materials Management

FG storage

Transformation process and WIP storage

RM storage

Purchasing domain of responsibility

| Egg supplier | Sugar supplier | Flour supplier | Chocolate chips supplier | Maintenance services supplier |

Materials Management

Production domain of responsibility

Purchasing domain of responsibility

FG storage

Transformation process and WIP storage

RM storage

| Egg supplier | Sugar supplier | Flour supplier | Chocolate chips supplier | Maintenance services supplier |
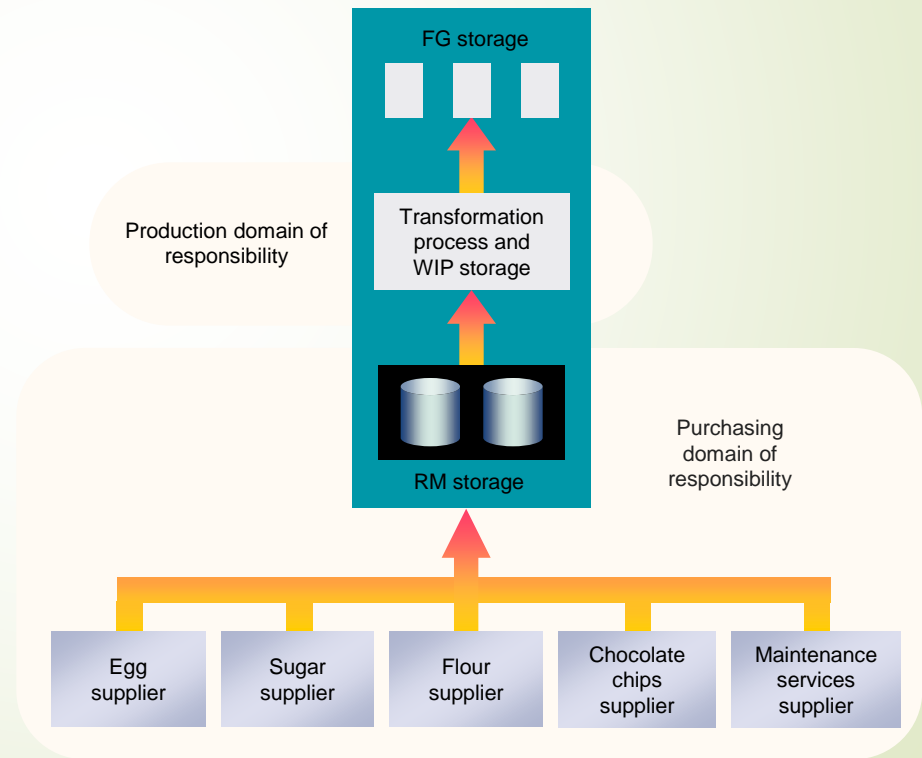
Materials Management

Materials Management

Supermarket A distribution center

Supermarket B distribution center

Distribution domain of responsibility

Transportation services supplier

FG storage

Transformation process and WIP storage

...main of ...sibility

RM storage

Purchasing domain of responsibility

Egg supplier

Sugar supplier

Flour supplier

Chocolate chips supplier

Maintenance services supplier
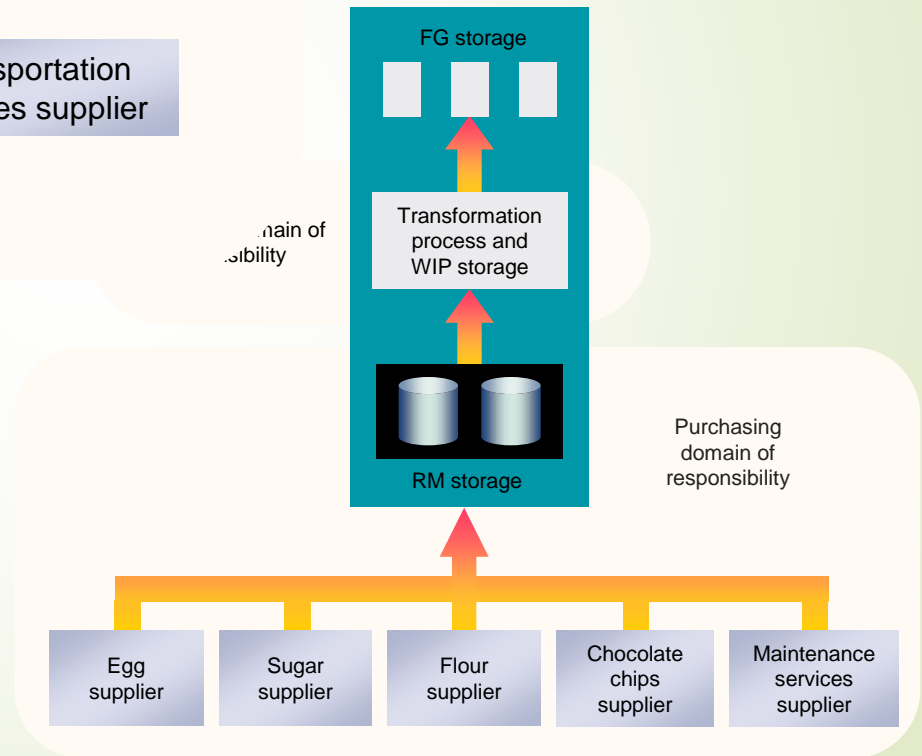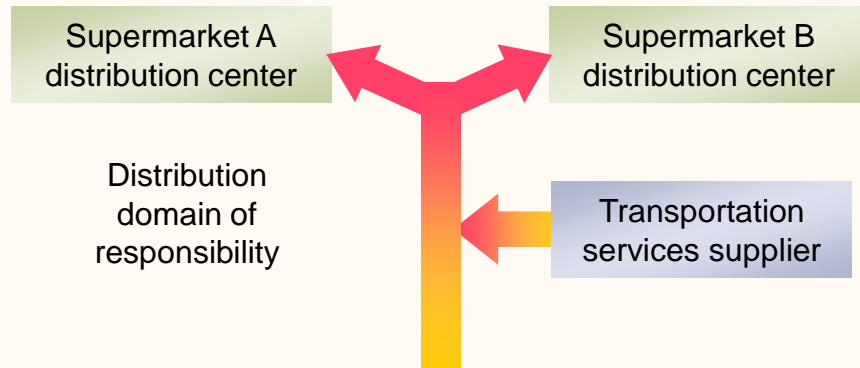
Materials Management

1- the bullwhip effect

- Upstream channel
- Bullwhip effect when demand distorsion
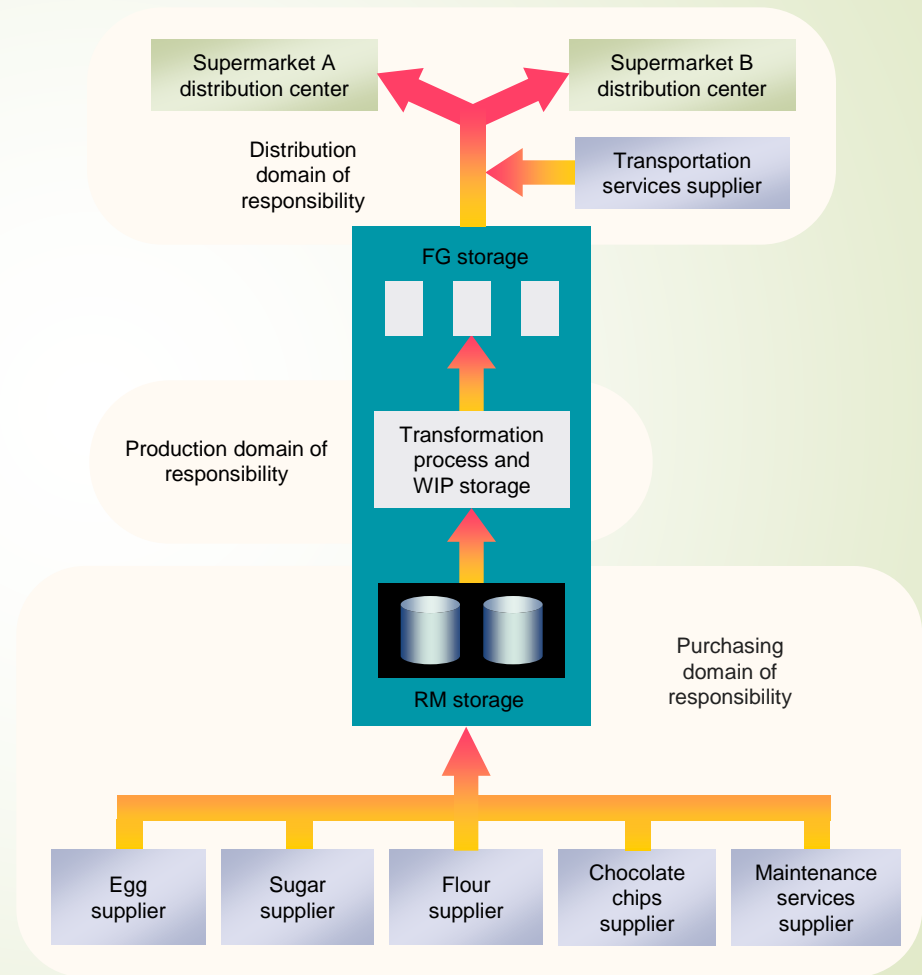- Time and distance factors
- Bullwhip effect and its behavioral causes
  - Individual decisions, a threat of product shortage
  - Types of incentives, shortage cost
  - Lead time reduction as a solution
  - Order batching
  - Price fluctuation, price promotion
 - Rationing and shortage gaming

Bullwhip

TABLE S11.1   **The Bullwhip Effect**

CAUSE	REMEDY
Demand forecast errors (cumulative uncertainty in the supply chain)	Share demand information throughout the supply chain.
Order batching (large, infrequent orders leading suppliers to order even larger amounts)	Channel coordination: Determine lot sizes as though the full supply chain was one company.
Price fluctuations (buying in advance of demand to take advantage of low prices, discounts, or sales)	Price stabilization (everyday low prices).
Shortage gaming (hoarding supplies for fear of a supply shortage)	Allocate orders based on past demand.

$$\text{Bullwhip} = \frac{\text{Variance of orders}}{\text{Variance of demand}} = \frac{\sigma^2_{\text{orders}}}{\sigma^2_{\text{demand}}} \qquad (S11\text{-}2)$$
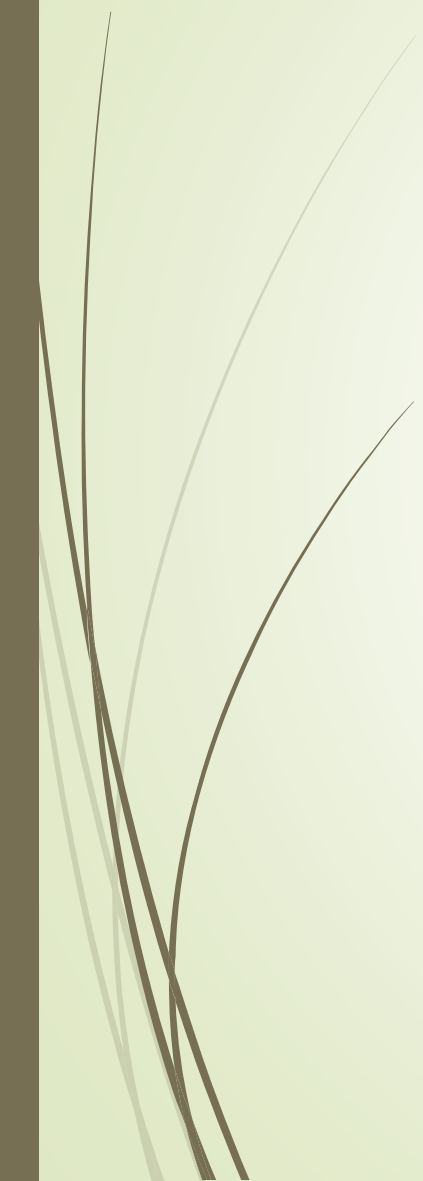
Variance *amplification* (i.e., the bullwhip effect) is present if the bullwhip measure is greater than 1. This means the size of a company's orders fluctuate more than the size of its incoming demand. If the measure equals 1, then no amplification is present. A value less than 1 would imply a *smoothing* or *dampening* scenario as orders move up the supply chain toward suppliers.

Distributor Orders to Factory

Retail Orders to Distributor
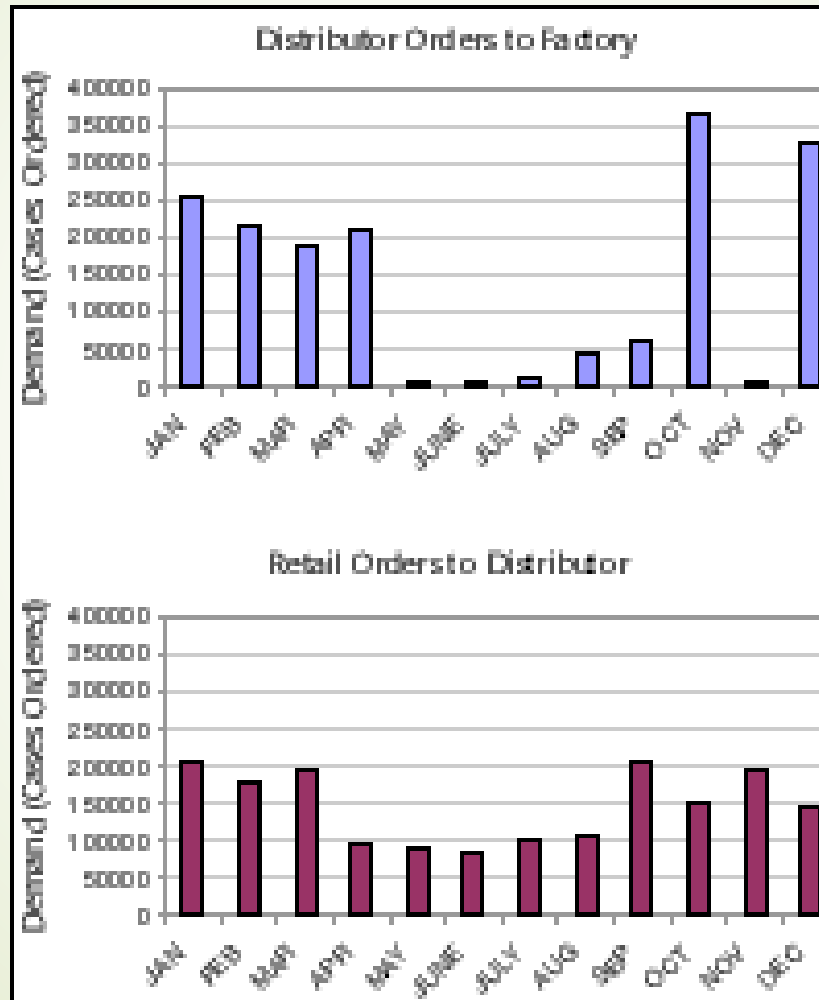
Click to enlarge

Supply chain example

- Raw material 1 week

- Production 1 week

- Distribution 1 week

- 10 cases moving to 20 cases and 10 cases in the pipe line ….

Increasing Variability in the Supply Chain: The Bullwhip Effect
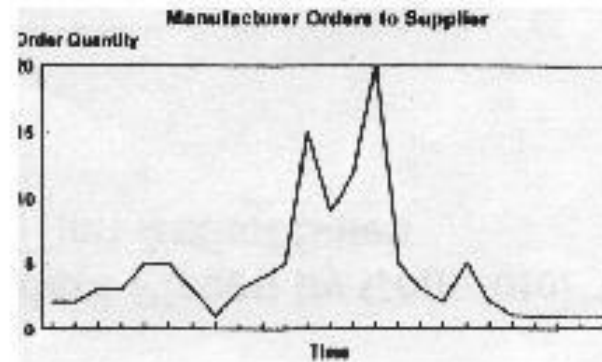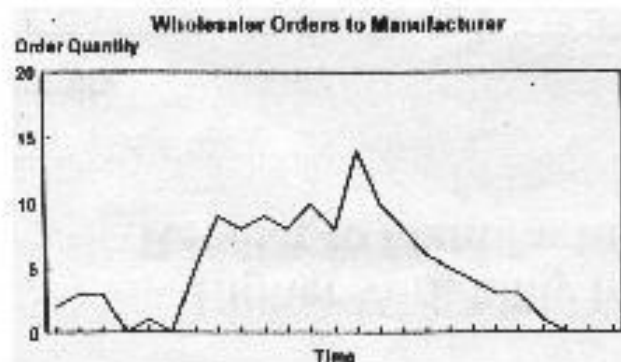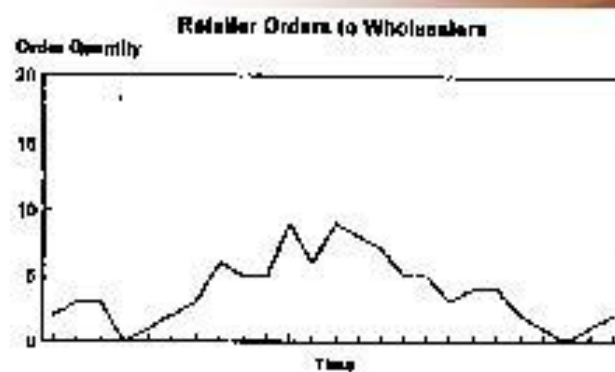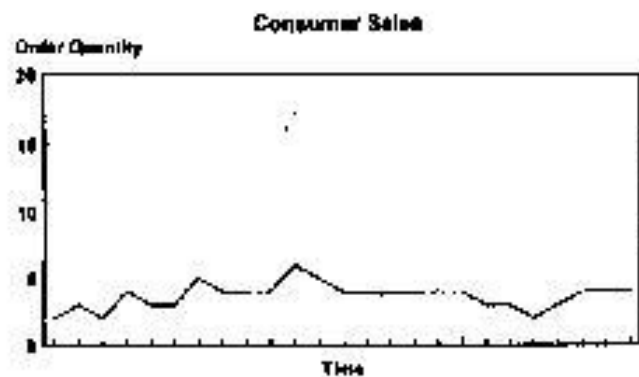
Order Variability in the Supply Chain
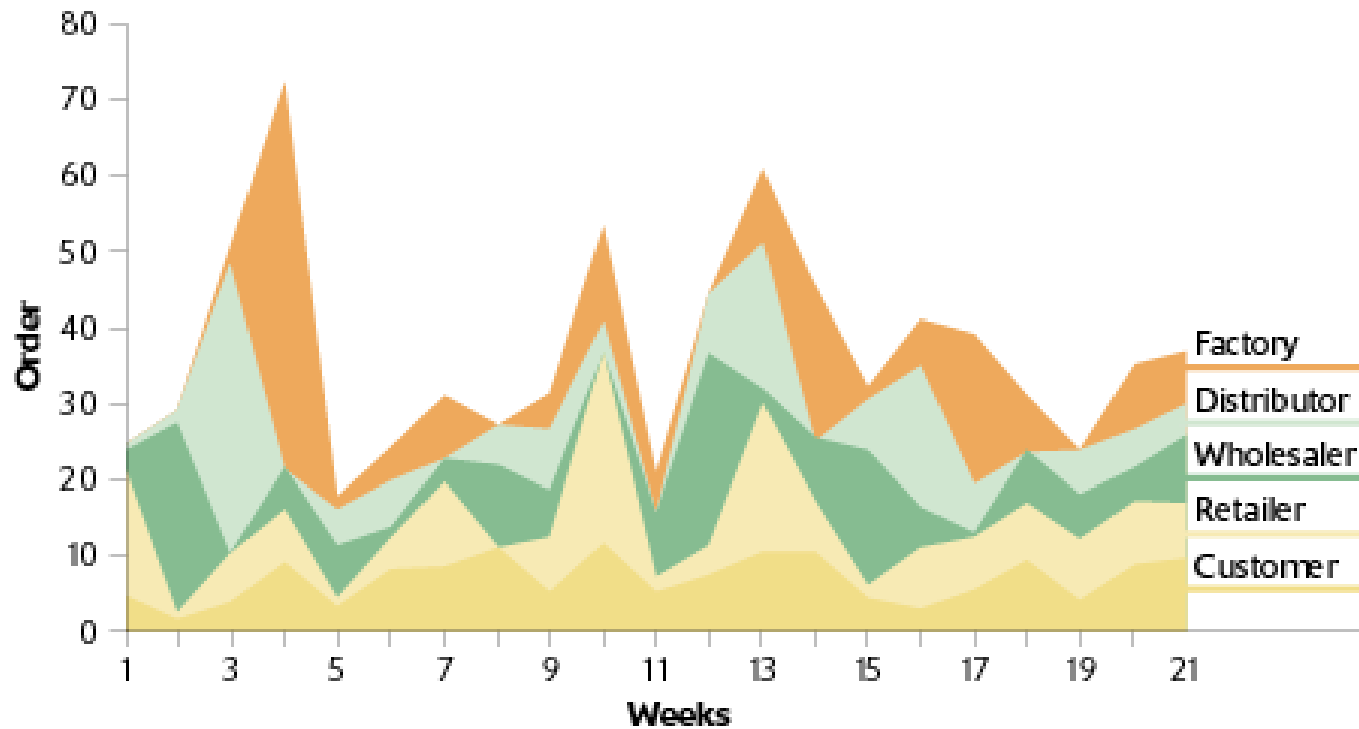
From domestic to global supply chain

- Substantial geographic distances, long transport lead time is erratic
- Added forecasting difficulties and inaccuracies, coordonate promotion
- Exchange rates and other macro economic uncertainties
- Infrastructural inadequacies
- Lack of local process equipment and technologies, worker skills
- Inadequacies in transportation and telecommunications infrastructures
- Explosive dimensions of product varieties in global markets

3- vertical integration issues

Country environment

Market

Labor cost & skill

Local managerial capacity

Political risk

Import controls

Cultural compatibility

Competitive situation

Fragmented distribution channels
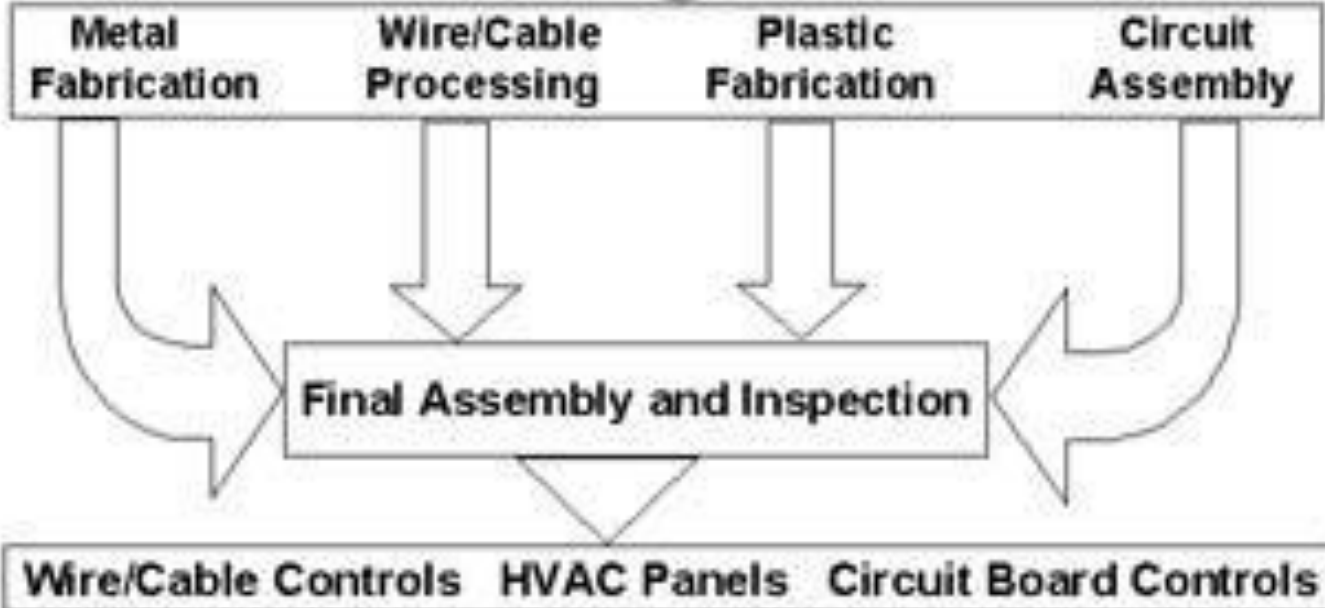
Company characteristics

Product

Brand differenciation
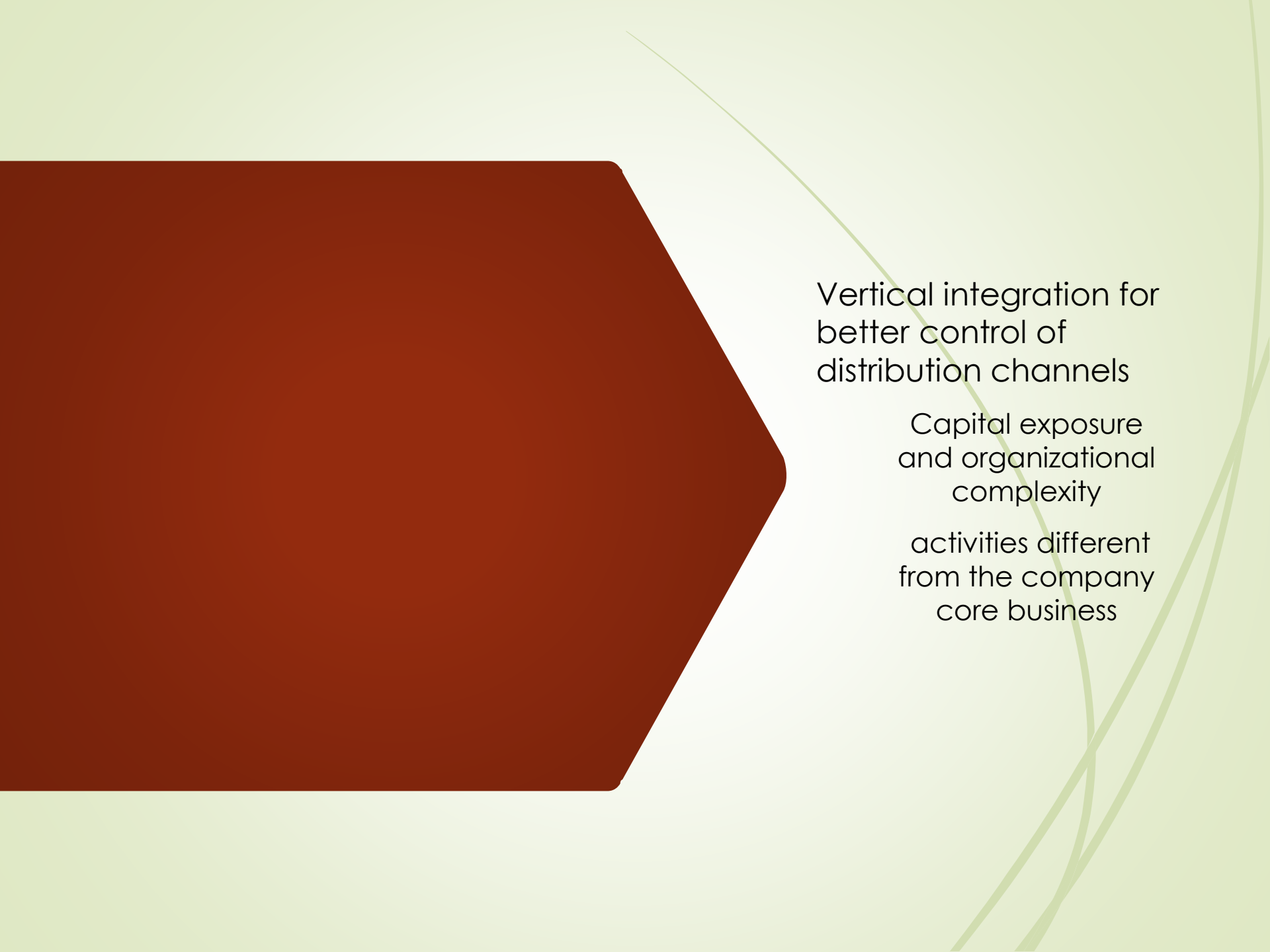
Service intensity

Technology

Stability

Complexity

resources

Vertical integration for better control of distribution channels

Capital exposure and organizational complexity

activities different from the company core business

Performance Indicators

Inventory as Percentage of Total Assets (with examples of exceptional performance)	
Manufacturer (Toyota 5%)	15%
Wholesale (Coca-Cola 2.9%)	34%
Restaurants (McDonald's .05%)	2.9%
Retail (Home Depot 25.7%)	27%

Percentage invested in inventory = (Average inventory investment / Total assets) × 100

TRACKING INVENTORY INVESTMENT

- Home Depot's management wishes to track its investment in inventory as one of its performance measures. Recently, Home Depot had $11.4 billion invested in inventory and total assets of $44.4 billion.

Determine the investment in inventory and total assets

Percent invested in inventory = (11.4/44.4) × 100 = 25.7%

- If Home Depot can drive its investment down to 20% of assets, how much money will it free up for other uses?

Performance indicators

Inventory turnover = Cost of goods sold /Average inventory investment

➤ PepsiCo, Inc., manufacturer and distributor of drinks, Frito-Lay, and Quaker Foods, provides the following in a recent annual report (shown here in $ billions). Determine PepsiCo's turnover.

Inventory turnover = Cost of goods sold / Average inventory investment
= 14.2/1.69 = 8.4

Net revenue		$32.5
Cost of goods sold		$14.2
Inventory:		
Raw material inventory	$.74	
Work-in-process inventory	$.11	
Finished goods inventory	$.84	
Total average inventory investment		$1.69

If Coca-Cola's cost of goods sold is $10.8 billion and inventory investment is $.76 billion, what is its inventory turnover?

Performance indicators

Weeks of supply = Average inventory investment/(Annual cost of goods sold/52 weeks)

- Using the PepsiCo data, management wants to know the weeks of supply.

We know that inventory investment is $1.69 billion and that weekly sales equal annual cost of goods sold ($14.2 billion) divided by 52 = $14.2/52 = $.273 billion

Weeks of supply = (Average inventory investment /Average weekly cost of goods sold) = 1.69/.273 = 6.19 weeks

- If Coca-Cola's average inventory investment is $.76 billion and its average weekly cost of goods sold is $.207 billion, what is the firm's weeks of supply?

Examples of Annual Inventory Turnover

FOOD, BEVERAGE, RETAIL	
Anheuser Busch	15
Coca-Cola	14
Home Depot	5
McDonald's	112
MANUFACTURING	
Dell Computer	90
Johnson Controls	22
Toyota (overall)	13
Nissan (assembly)	150

Comparisons

	TYPICAL FIRMS	BENCHMARK FIRMS
Order fill rate	71%	98%
Order fulfillment lead time (days)	7	3
Cash-to-cash cycle time (days)	100	30
Inventory days of supply	50	20

Source: Institute for Industrial Engineers

Part II – International distribution strategies
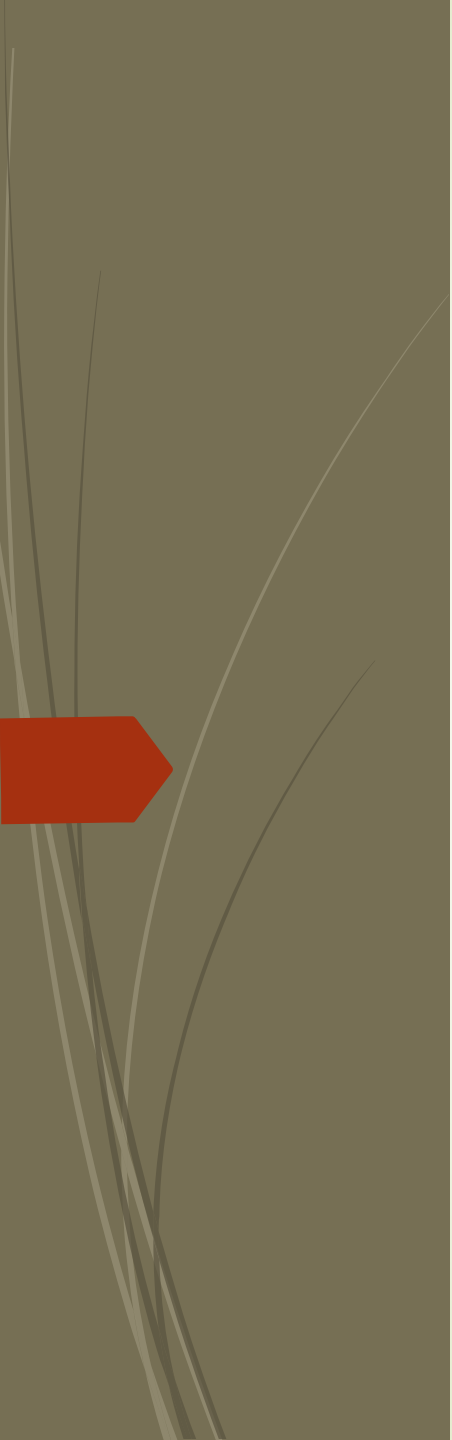
How to enter foreign markets

- Decision criteria for entry method
  - Number of markets
  - Penetration of markets
  - Market feedback
  - Control
  - Incremental marketing costs
  - Profit possibilities
  - Investment requirements
  - Administrative requirements

How to enter foreign markets

	A	and/or	B
	Production in Home Market		**Foreign Production Sources**
	Indirect Export	**Direct Export**	– Contract Manufacture
	– Trading Company	– Foreign Distributor	– Licensing
	– Export Management Company	– Agent	– Assembly
	– Piggyback, etc.	– Overseas Marketing Subsidiary	– Joint Venture
			– 100 Percent Ownership

- Personnel requirements

- Exposure to foreign problems

- Flexibility

- Risk

- A decision model

TABLE 10-1

Matrix for Comparing Alternative Methods of Market Entry

Evaluation Criteria	Entry Methods						
	Indirect Export	Direct Export	Marketing Subsidiary	Marketing Subsidiary—Local Assembly	Licensing	Joint Venture	Wholly Owned Operation
1. Number of Markets							
2. Market Penetration							
3. Market Feedback							
4. International Marketing Learning							
5. Control							
6. Marketing Costs							
7. Profits							
8. Investment							
9. Administration							
10. Personnel							
11. Foreign Problems							
12. Flexibility							
13. Risk							

Indirect exporting

- Foreign sales through domestic sales organization
- Potential advantage of an EMC

Cooperation in exporting

Export trading companies

- Piggyback
  - Method of operation

Direct exporting

- The task of export management

TABLE 10-3 **Outline for an Export Plan**

Part I: An Export Policy Commitment Statement

Part II: The Situation/Background Analysis

- Product
- Operations
- Personnel and export organization
- Resources of the firm
- Industry structure, competition, and demand

Part III: The Marketing Component

- Identification, evaluation, and selection of target markets
- Product selection and pricing
- Distribution method
- Terms and conditions
- Internal organization and procedures
- Sales goals: Profit (loss) forecasts

Part IV: Tactics: Action Steps

- Primary target countries
- Secondary target countries
- Indirect marketing efforts

Part V: An Export Budget
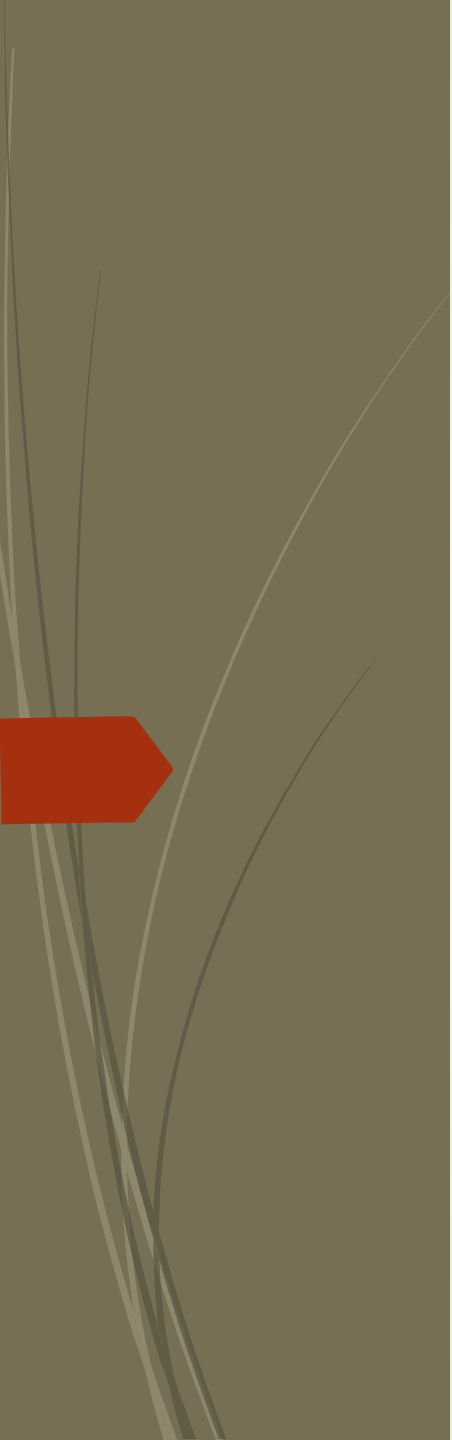
- Pro forma financial statements

Part VI: An Implementation Schedule

- Follow-up
- Periodic operational/management review (measuring results against plan)

Addenda: Background Data on Target Countries and Market

- Basic market statistics: Historical and projected
- Background facts
- Competitive environment

- Marketing through foreign distributors
- Foreign manufacturing as foreign-market entry

The Ten Commandments for Exporters

1. Get export counseling and develop a master international marketing plan.
2. Secure top management commitment to exporting.
3. Exercise sufficient care in selecting overseas distributors.
4. Don't depend only on unsolicited orders, but establish a basis for orderly export growth.
5. Don't neglect the export market when the domestic market is booming.
6. Treat international distributors on an equal basis with domestic counterparts.
7. Don't assume that domestic marketing techniques will be successful abroad.
8. Be willing to modify products to meet regulations or cultural preferences of other countries.
9. Print sales, service, and warranty messages in local languages.
10. Provide readily available servicing for your product.

- Approaches to foreign manufacture
  - assembly
  - Contract manufacturing
  - Licensing
    - Evaluating licensing
    - Managing
    - Joint ventures in foreign markets

MANUFACTURERS & INTERNATIONAL DISTRIBUTION

Available networks

Wholesaling in foreign markets

Service

Retailing in foreign markets

TABLE 11-1 Size of Retailers in Selected Countries

Country	Average Employment per Retailer	Country	Average Employment per Retailer
Pakistan	1	New Zealand	4
Iran	1	Australia	5
Italy	1	Germany	6
China	2	South Africa	7
Egypt	2	United Kingdom	7
Mexico	2	Venezuela	7
Spain	2	Canada	9
Brazil	4	Ghana	11
Japan	4	United States	11
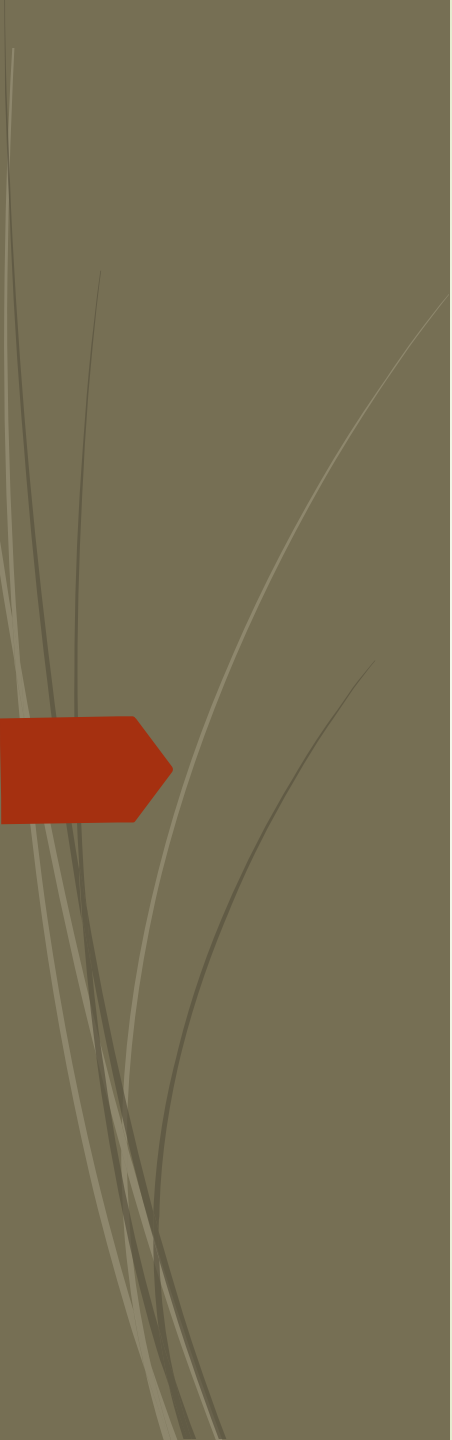
Retailing services

- Carrying inventory
- Product display
- Distribution trends in world markets
  - Four major distribution trends
  - Internationalization of retailing
  - Direct marketing
  - Discounting

Marketing through foreign distribution channels

- International or national patterns

- Direct versus indirect channels
- Selective versus intensive distribution
- Working with the channel
- Keeping channels up-to-date
  - Growth of a firm in a market
  - Large-scale retailing
  - Other changes

INTERNATIONAL DISTRIBUTION

Frédéric Gauthier

Structure of international distribution networks

Table 17.1 Value added in the vertical chain (% of retail price, estimated)

Actor in the vertical chain	Cars	Software	Petrol	Laser printers	Packaged goods
Supplier of raw materials/components	45	10	53	40	26
Manufacturer of finished goods	40	65	19	30	33
Distribution channel	15	25	28	30	41
Total	100	100	100	100	100

Source: Bucklin et al., 1996, p. 106. The figures in the table are based on research conducted by, among others, the Economist Intelligence Unity and McKinsey.

(a) Japan

Car makers affiliated parts makers
Independent parts makers
Repair parts makers

Car makers
Wholesalers
Special agents

Dealers
Cooperative sales companies
Second-level wholesalers

Subdealers
Retailers

Large users

Petrol stations

Car repair shops

End users

(b) USA

Manufacturer — 51% — Warehouse distributor — Jobber buying groups — Jobber — Installer — Customer

10%

18% — Mass merchandiser

21% — Repair specialist

—— Primary channel
—— Secondary channel

Figure 17.3 A hypothetical channel sequence in the Japanese consumer market
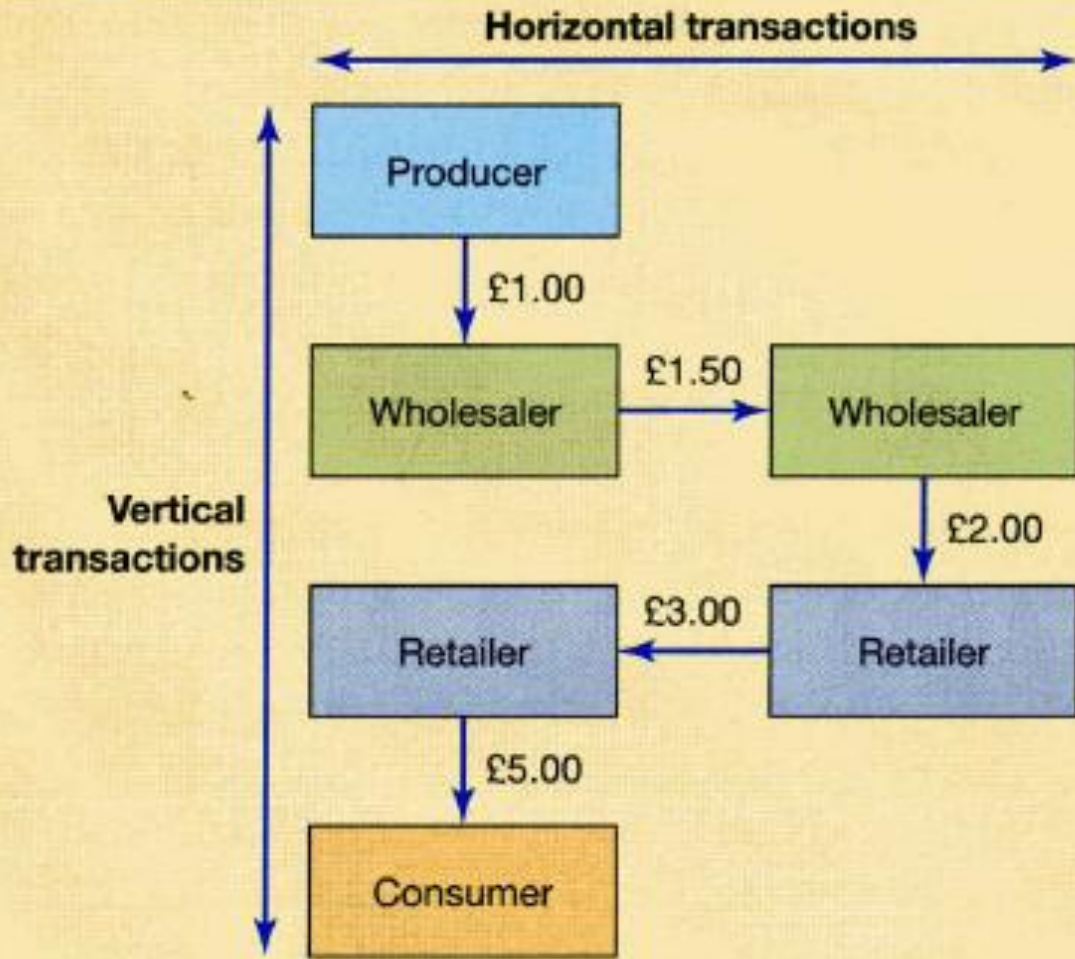
The structure of the channel

- Market coverage

Figure 17.4 Three strategies for market coverage
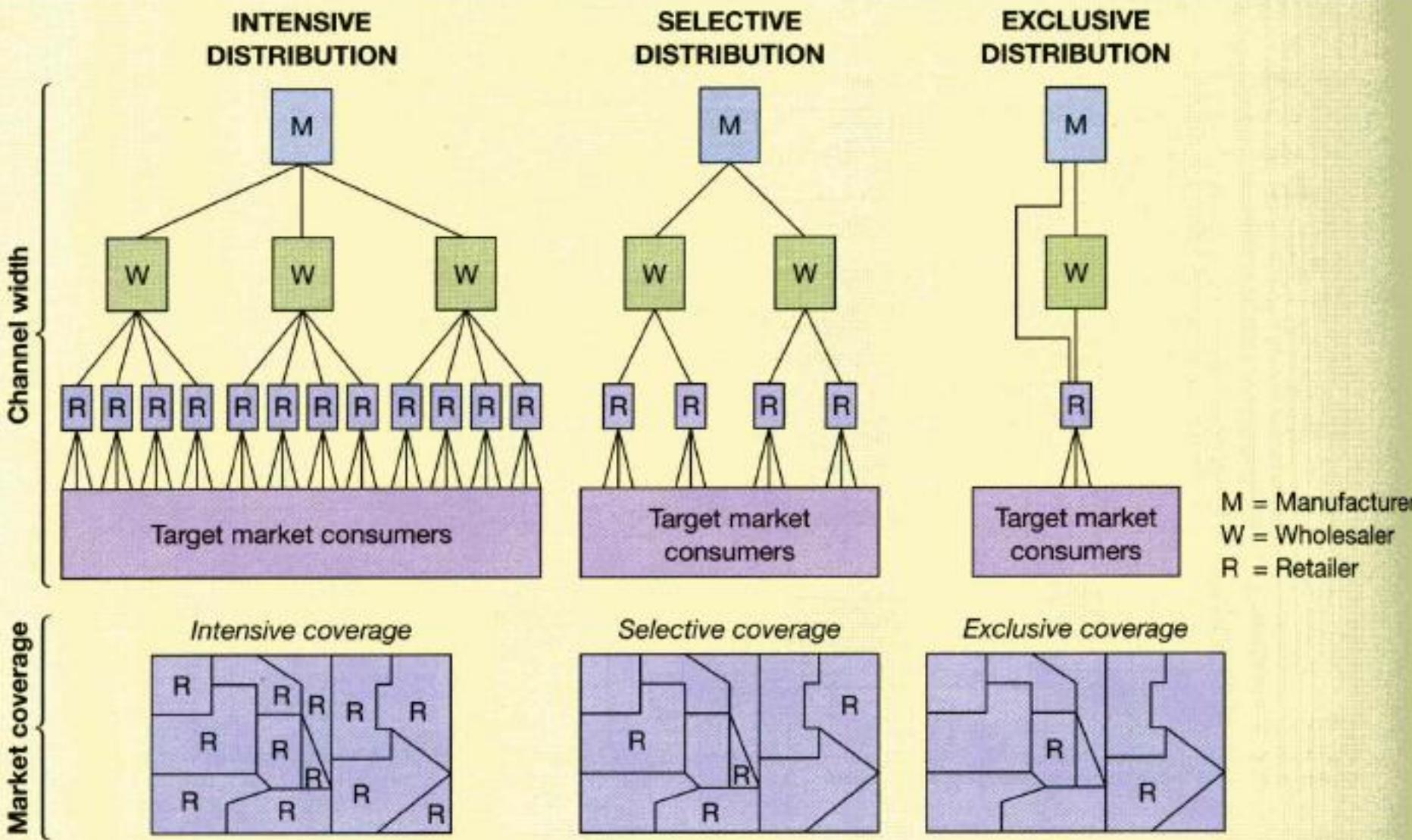
Figure 17.5 Factors influencing channel width

Factor	Channel width		
	Intensive distribution ←→	*Selective distribution* ←→	*Exclusive distribution*
Product type	Convenience products	←—————————→	Speciality products
Product life cycle stage	Mature products	←————————→	New products
Product price	Low-price products	←————————→	High-price products
Brand loyalty	Brand-preferred products	←————————→	Brand-insisted products
Purchase frequency	Frequently purchased products	←————————→	Infrequently purchased products
Product uniqueness	Common products	←————————→	Distinctive products
Selling requirement	Self-service products	←————————→	Personal-selling products
Technical complexity	Non-technical products	←————————→	Technical products
Service requirements	Limited-service products	←————————→	Extensive-service products

Figure 17.6 **Vertical integration**
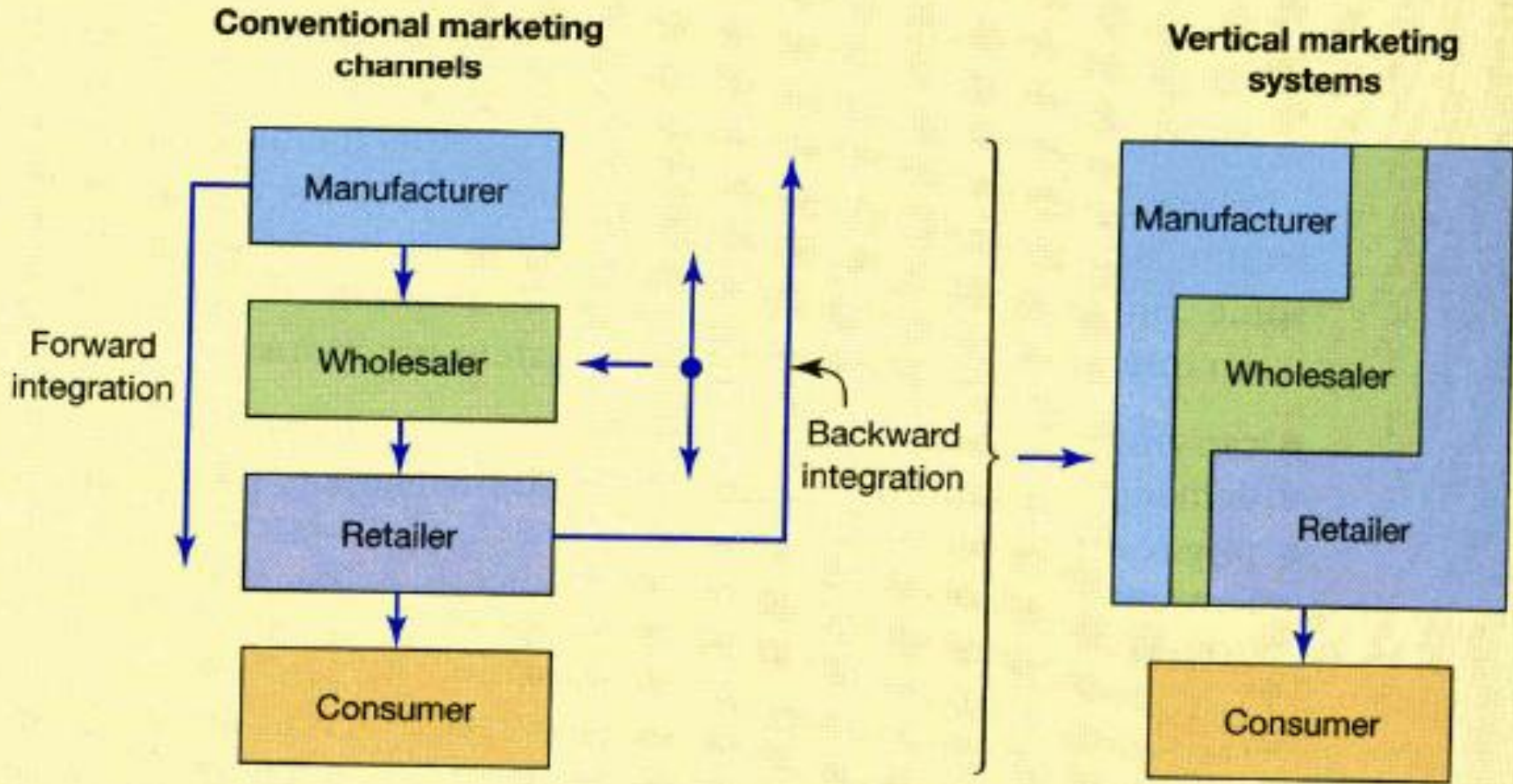
Criteria (no ranking implied)	Weight	Distributor 1		Distributor 2		Distributor 3	
		Rating	Score	Rating	Score	Rating	Score
Financial soundness and depth of channel member	4	5	20	4	16	3	12
Marketing management expertise and sophistication	5	4	20	3	15	2	10
Satisfactory trade, customer relations and contacts	3	4	12	3	9	3	9
Capability to provide adequate sales coverage	4	3	12	3	12	3	12
Overall positive reputation and image as a company	3	5	15	4	12	4	12
Product compatibility (synergy or conflict?)	3	3	9	4	12	4	12
Pertinent technical know-how at staff level	—	—	—	—	—	—	—
Adequate technical facilities and service support	—	—	—	—	—	—	—
Adequate infrastructure in staff and facilities	1	5	5	3	3	3	3
Proven performance record with client companies	2	4	8	3	6	3	6
Positive attitude towards the company's products	1	3	3	3	3	3	3
Mature outlook regarding the company's inevitable progression in market management	1	3	3	3	3	3	3
Excellent government relations	1	4	4	3	3	3	3
Score			111		94		85

Scales:

Rating	Weighting
5 Outstanding	5 Critical success factor
4 Above average	4 Prerequisite success factor
3 Average	3 Important success factor

Rating	Weighting
2 Below average	2 Of some importance
1 Unsatisfactory	1 Standard

- Grey markets and unofficial distribution channels
  - internet

Table 12.2 Indicative wholesaling patterns in selected countries

Country	Number of wholesalers (thousand)	Employees per wholesaler	Retailers per wholesaler	Population per wholesaler
Industrialised countries				
United States	416	13	5	564
Japan	429	10	4	274
Italy	120	5	8	473
United Kingdom	80	14	3	698
Belgium	57	3	2	174
Sweden	28	7	3	145
Austria	13	12	3	582
Israel (1980)	5	8	8	782
Newly industrialised countries				
Brazil	46	10	61	2,820
South Korea	46	4	21	878
Ireland	3	14	11	1,139
Chile	1	28	42	20,856
Developing countries				
India	116	–	32	5,612
Turkey	25	4	20	1,923
Egypt	2	24	1	25,596
Kenya	2	13	1	8,257
Centrally planned economies				
Soviet Union	1	120	481	174,922
Yugoslavia	1	124	70	20,000

Note: The above figures are only indicative, as more recent UN statistics do not differentiate between figures for wholesalers and retailers

Table 12.3 Size of retailers in selected countries

Country	Average employment per retailer	Country	Average employment per retailer
Pakistan	1.2	Japan	4.4
Belgium	1.2	Brazil	4.5
Spain	2.1	France	4.5
Mexico	2.2	Sweden	5.3
Israel	2.3	Venezuela	7.2
China	2.4	Canada	8.6
Argentina	3.8	Ghana	10.7
United Kingdom	3.9	United States	13.3
New Zealand	4.3	Germany	13.4

Source: © Euromonitor PLC.

Table 12.4 Indicative retailing patterns in selected countries

Country	Population (millions)	GNP per capita (US$)	Number of retailers (thousands)	Population per retailer
Industrialised countries				
United States	235	14,080	1,923	126
Japan	119	10,100	1,721	69
Italy	57	6,390	927	61
United Kingdom	56	9,180	232	243
Belgium	10	9,130	132	75
Sweden	8	12,440	76	110
Austria	8	9,230	38	200
Israel (1980)	4	5,270	40	103
Newly industrialised countries				
Brazil	130	1,870	2,817	46
South Korea	40	2,010	946	42
Ireland	4	4,990	32	108
Chile	12	1,890	24	492
Developing countries				
India (1980)	651	260	3,760	173
Turkey (1980)	44	1,250	492	96
Egypt	45	690	2	21,161
Kenya	19	340	3	5,667
Centrally planned economies				
Soviet Union (1980)	263	–	696	379
Yugoslavia	23	2,490	80	286

Note: The above figures are only indicative, as more recent UN statistics do not differentiate between figures for wholesalers and retailers.
Source: Adapted from Toyne and Walters (1993), and figures based on United Nations *Statistical Yearbook*, 1983–1984, pp. 866–90, and 1979–1980, pp. 404–19; and *Statistical Abstract of the United States* (1984), p. 799.
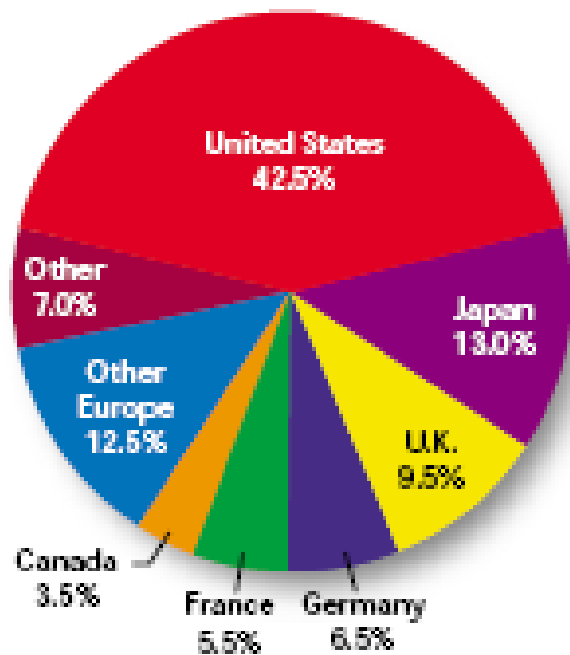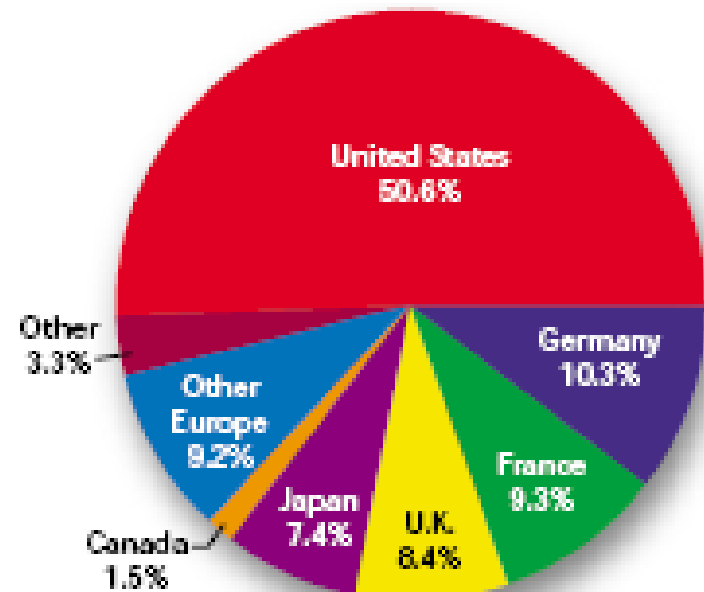
Evaluating retail globalization

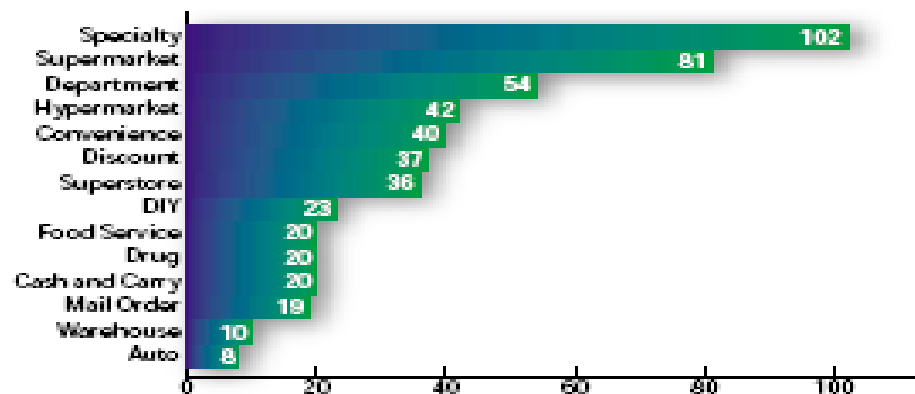- What are the keys to success in retail globalization ?
- Main trends

Top 200 Retailers, by Country of Origin

Top 200 Retailers, by Sales

Sector Composition of the Top 200 Retailers

Strongest Sales Increases					Strongest Profit Gains			

DT Rank	Country of Origin	Name of Company	5 yr Retail Sales CAGR% (Local Currency)
1	US	Amazon.com	92.8%
2	US	The Pantry	42.3%
3	Japan	Yamada Denki	37.0%
4	S Africa	Metcash	36.4%
5	S. Korea	Lotte Shopping	35.3%
6	Japan	Fast Retailing	35.2%
7	S. Korea	Shinsegae	31.9%
8	US	Bed Bath and Beyond	28.0%
9	US	Starbucks	27.5%
10	Spain	Mercadona	27.3%
11	Canada	Empire/Sobeys	27.0%
12	US	Dell	25.9%
13	Spain	Inditex	25.1%
14	Brazil	Pao de Acucar	24.9%
15	US	Kohl's	24.4%
16	US	Advance Auto Parts	23.2%
17	UK	The Big Food Group (Iceland)	22.3%
18	US	Lowe's	21.2%
19	US	Whole Foods Markets	20.7%
20	Sweden	Hennes & Mauritz	20.2%
21	US	Best Buy	20.2%
22	US	Albertsons	19.4%
23	US	Home Depot	19.2%
24	S. Africa	Pick 'n Pay Stores	19.0%
25	US	Charming Shoppes	18.9%

DT Rank	Country of Origin	Name of Company	5 yr Net Income CAGR% (Local Currency)
1	Japan	Daiei	156.8%
2	S. Korea	Shinsegae	89.8%
3	US	CVS	79.9%
4	US	Costco	72.4%
5	S. Korea	Lotte Shopping	71.5%
6	Japan	Fast Retailing	59.4%
7	Japan	Hankyu Department Stores	49.2%
8	US	Michaels Stores, Inc.	36.1%
9	US	Kohl's	35.5%
10	Japan	Aeon (Jusco)	35.4%
11	UK	Compass	35.1%
12	Japan	Izumi	33.6%
13	US	Bed Bath and Beyond	32.8%
14	S. Africa	Pick 'n Pay Stores	32.8%
15	US	Lowe's	32.7%
16	S Africa	Metcash	32.1%
17	US	Starbucks	31.4%
18	Spain	Mercadona	30.5%
19	Japan	Daimaru	30.2%
20	Spain	Inditex	30.1%
21	France	Pinault-Printemps-Redoute	29.6%
22	Japan	Yamada Denki	27.9%
23	Canada	Loblaw	27.9%
24	US	Staples	27.8%
25	Sweden	Hennes & Mauritz	27.5%