Operations Management

MGT355

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Supply network management

What is supply chain management?

'Supply chain management is the management of the interconnection of organizations that relate to each other through upstream and downstream linkages between the processes that produce value to the ultimate consumer in the form of products and services'.

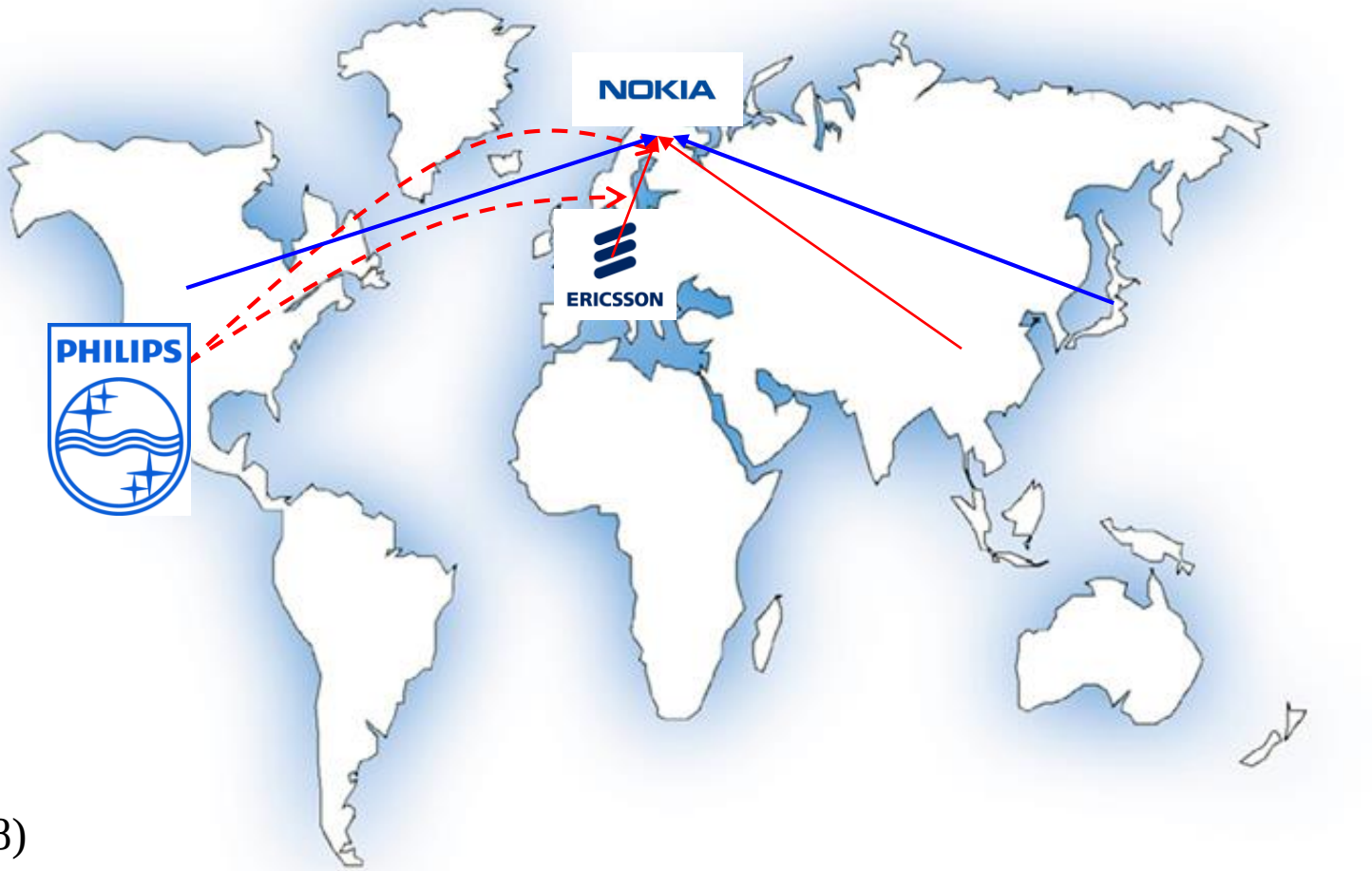
Why consider the whole supply network?

- It helps an understanding of competitiveness
- It helps identify significant links in the network
- It helps focus on long-term issues
- It helps focus on cost

Performance objectives

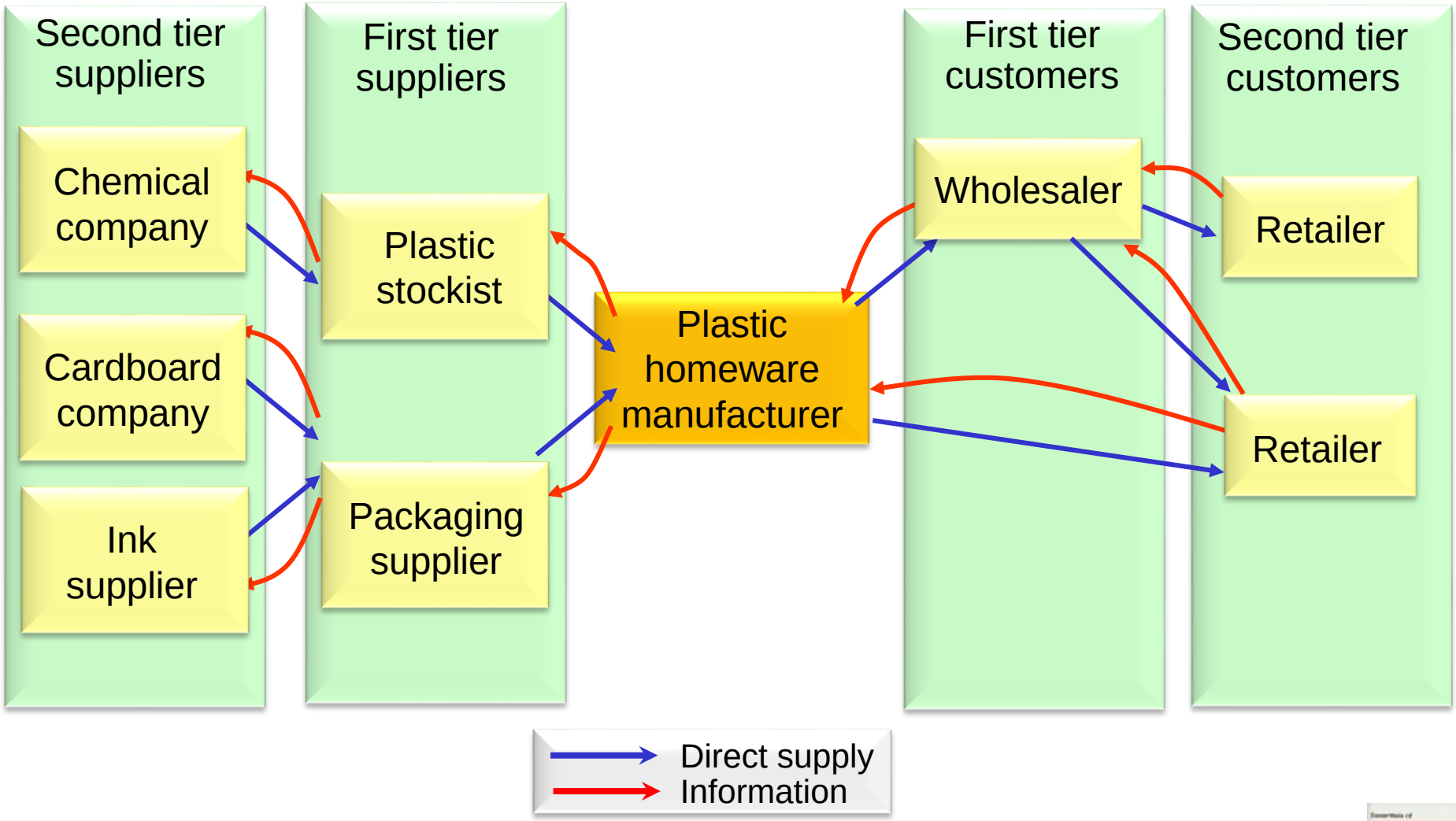
- Quality
- Speed
- Dependability
- Flexibility (agility)
- Cost

Relationship with suppliers

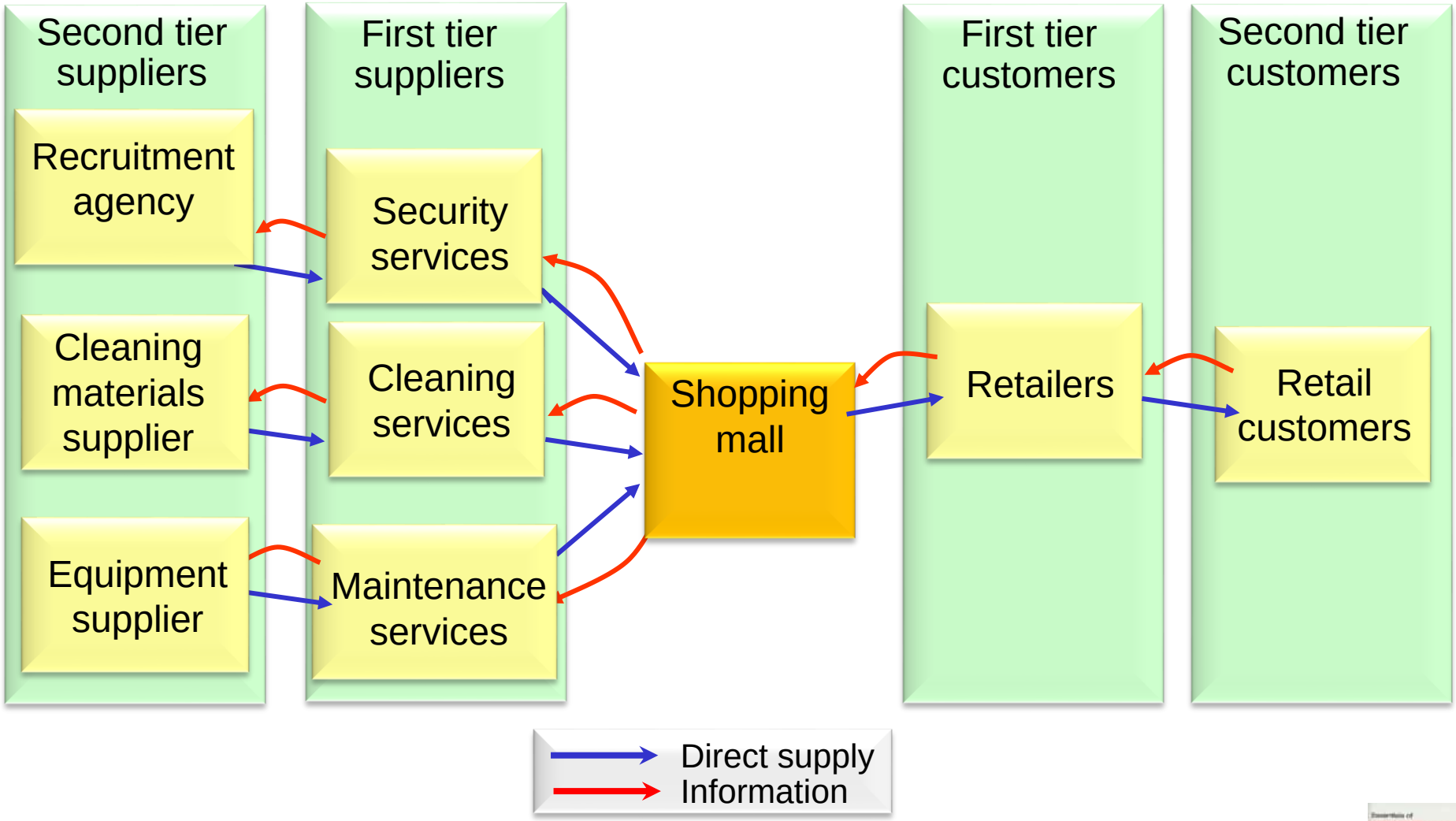


Barnes (2008)

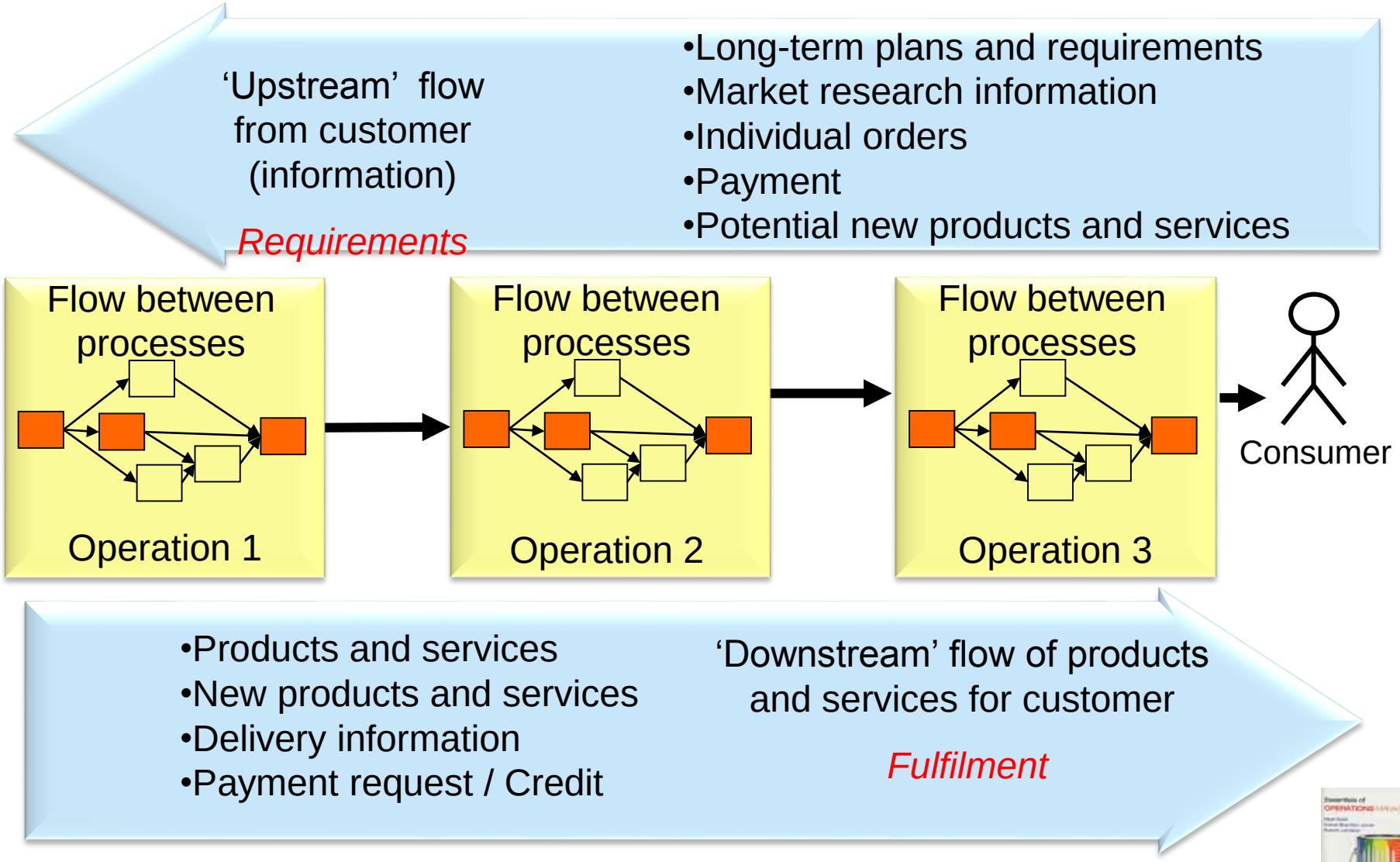
Operations network for a plastic homeware company



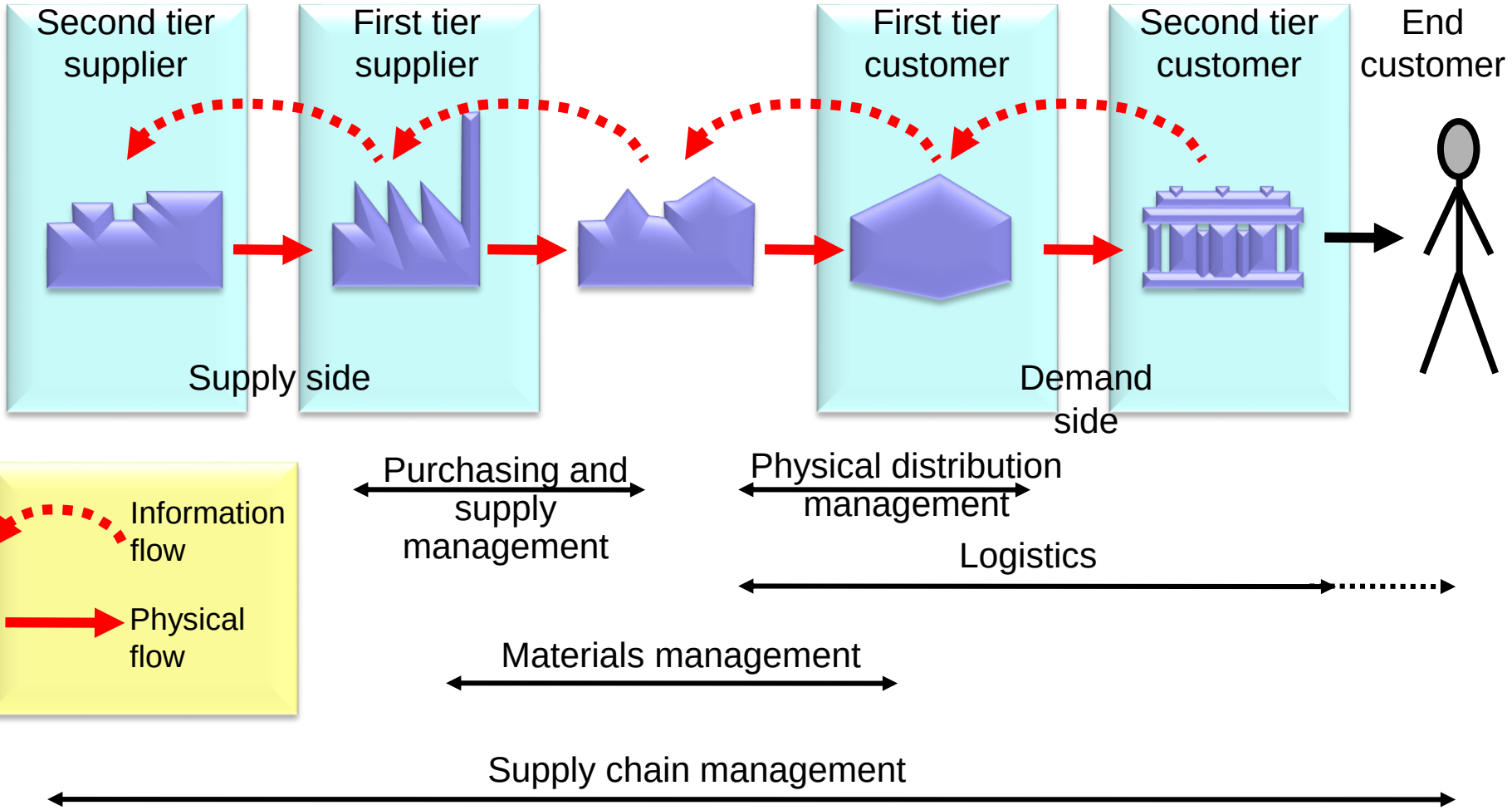
Operations network for a shopping mall



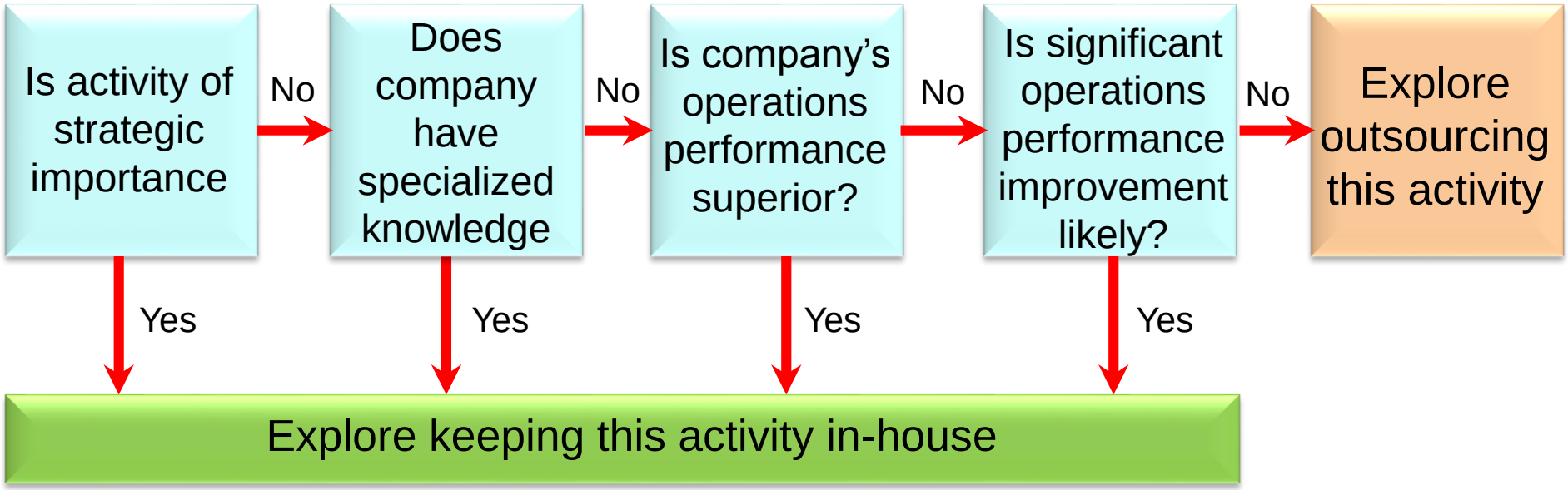
Supply chains management is concerned with the flow of information and the flow of products and services

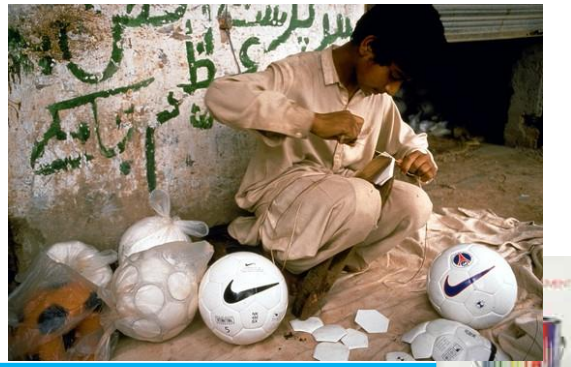


Supply chain planning and control

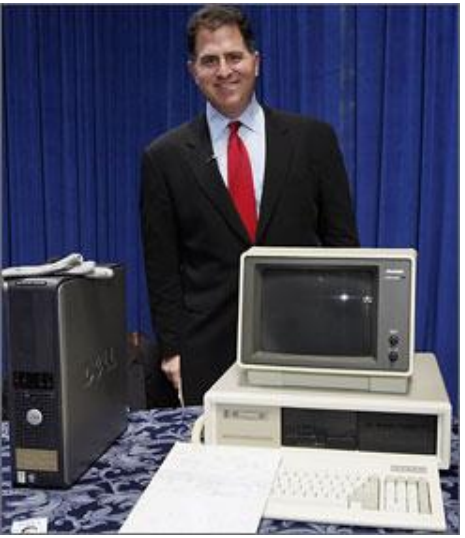


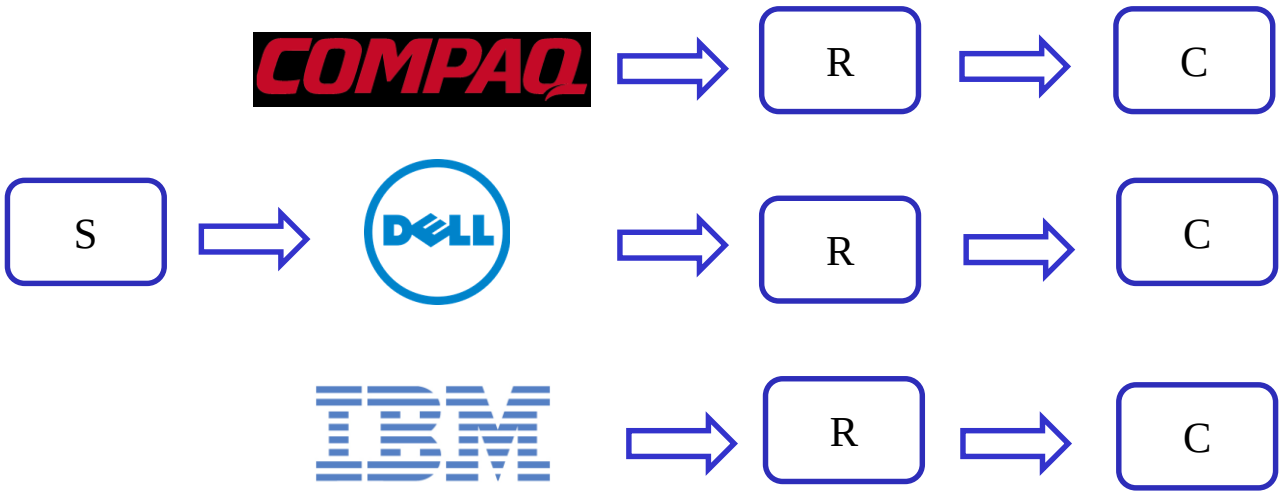
The decision logic of outsourcing





Even the best models do not work for ever!





Supply chain relationships

From.... \ To.....	Business	Consumer
Business	**Business to business (B2B)** Most common, all but the last link in the supply chain *E-commerce examples:* ➢EDI networks ➢Business information exchanges	**Business to consumer (B2C)** Retail operations Catalogue operations, etc. *E-commerce examples:* ➢Internet retailers ➢Amazon.com, etc.
Consumer	**Consumer to consumer (C2C) or 'peer to peer (P2P)** Consumer 'offer', business responds *E-commerce examples:* ➢Some airline ticket operators ➢Priceline.com, etc.	**Consumer to business (C2B)** Trading 'swap' and auction transactions *E-commerce examples:* ➢Specialist 'collector' sites ➢Ebay.com, etc.

Factors for rating alternative suppliers

Short-term ability to supply	Longer-term ability to supply
•Range of products or services provided	•Potential for innovation
•Quality of products or services	•Ease of doing business
•Responsiveness	•Willingness to share risk
•Dependability of supply	•Long-term commitment to supply
•Delivery and volume flexibility	•Ability to transfer knowledge as well as products and services
•Total cost of being supplied	•Technical capability
•Ability to supply in the required quantity	•Operations capability
	•Financial capability
	•Managerial capability

Weighted supplier selection criteria for a hotel chain

Factor	Weight	Supplier A score	Supplier B score
Cost performance	10	8 (8x10=80)	5 (5x10=50)
Quality record	10	7 (7x10=70)	9 (9x10=90)
Delivery speed promised	7	5 (5x7=35)	5 (5x7=35)
Delivery speed achieved	7	4 (4x7=28)	8 (8x7=56)
Dependability record	8	6 (6x8=48)	8 (8x8=64)
Range provided	5	8 (8x5=40)	5 (5x5=25)
Innovation capability	4	6 (6x4=24)	9 (9x4=36)
Total weighted score		325	356

The bullwhip effect

PERIOD	3rd LEVEL SUPPLIER		2nd LEVEL SUPPLIER		1st LEVEL SUPPLIER		ORIGINAL EQUIPMENT MFG.		DEMAND
	Prodn.	Stock	Prodn.	Stock	Prodn.	Stock	Prodn.	Stock	
1	100	100 100	100	100 100	100	100 100	100	100 100	100
2	20	100 60	60	100 80	80	100 90	90	100 95	95
3	180	60 120	120	80 100	100	90 95	95	95 95	95
4	60	120 90	90	100 95	95	95 95	95	95 95	95
5	100	90 95	95	95 95	95	95 95	95	95 95	95
6	95	95 95	95	95 95	95	95 95	95	95 95	95

ALL OPERATIONS HOLD ONE PERIODS STOCK

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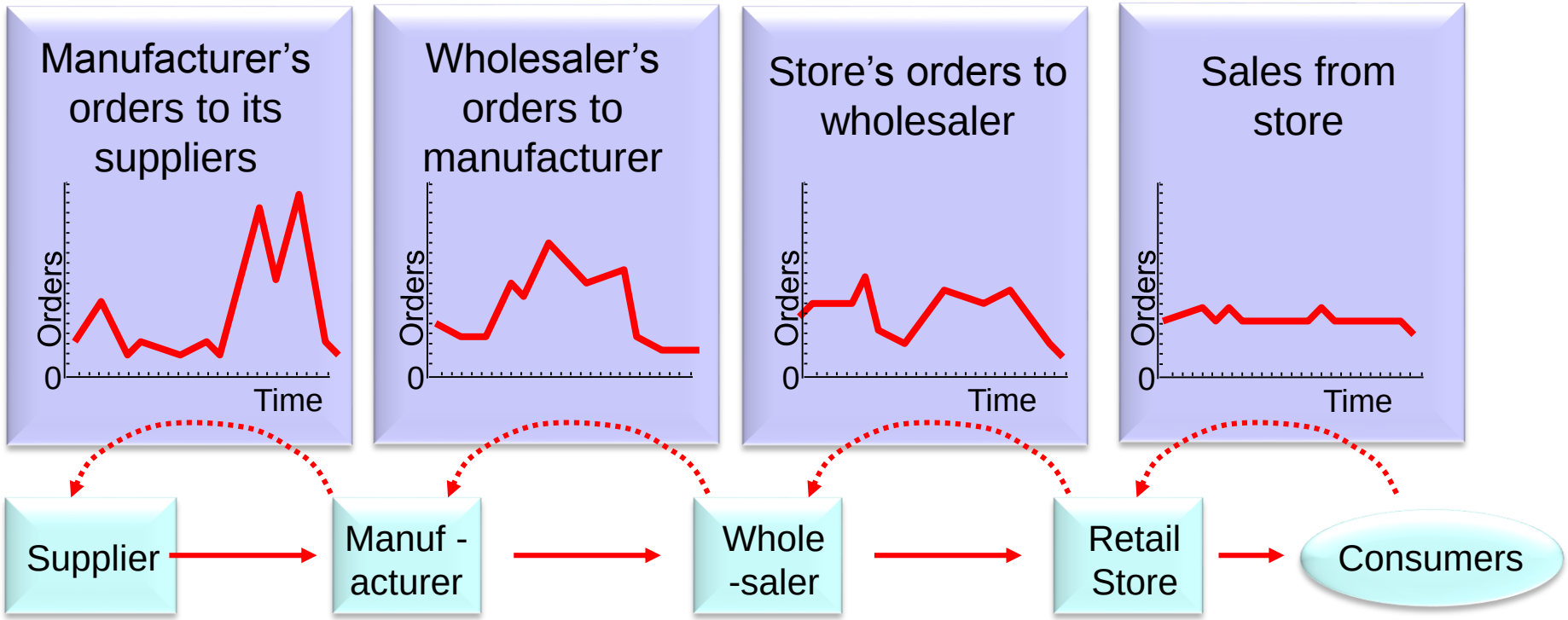
	Prodn.	Stock	Prodn.	Stock	Prodn.	Stock	Prodn.	Stock	
1	100	100 100	100	100 100	100	100 100	100	100 100	100
2									95
3									105
4									95
5									105
6									95

ALL OPERATIONS HOLD ONE PERIODS STOCK

The bullwhip effect



Methods for coping with the bullwhip effect

- **Reducing uncertainty.** This can be accomplished by centralizing demand information.

- **Reducing variability.** This can be accomplished by using a technique made popular by *WalMart* and then *Home Depot* called *everyday low pricing* (EDLP). EDLP eliminates price promotions as well as the shifts in demand that accompany them.

- **Reducing lead time.** Order times can be reduced by using EDI (electronic data interchange).

- **Strategic partnerships.** The use of strategic partnerships can change how information is shared and how inventory is managed within the supply chain. These will be discussed later.

The effects of supply chain compression