Nottingham University Business School

Network Structures in the International Clothing Industry

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In the news

Hugo Boss looks at rivals for faster sales

FT, 30/8/2010

'Hugo Boss is cutting the time it takes to bring its collections to the shop floor, in a move to use some of the methods of lower-cost brands.'

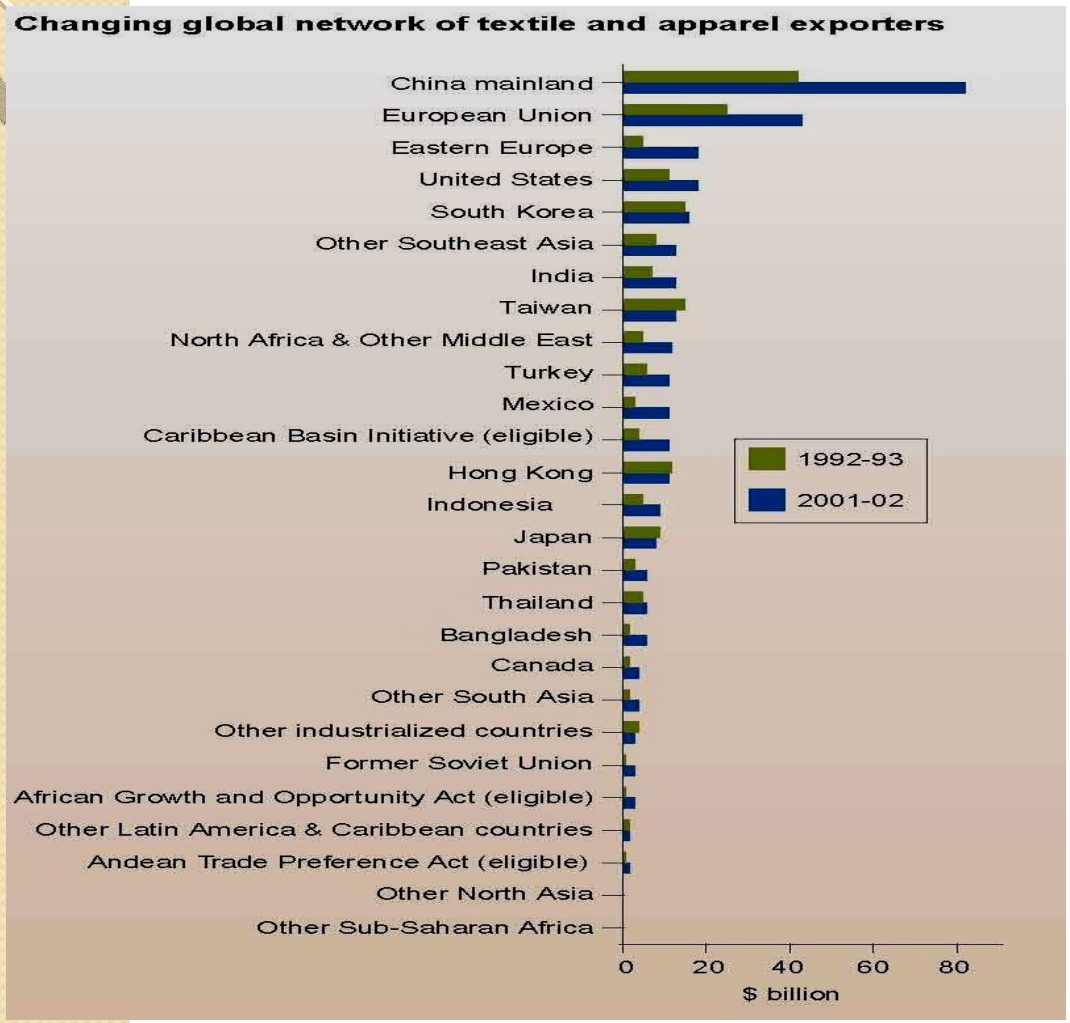
Fashion chains far from cheerful about future of cheap chic

The Observer, 19/9/2010

Outline

- Change and evolution in clothing supply networks – examples
- Study objectives
- Network structure classifications
- Methodology
- A new classification of collaborative clothing supply networks
- Further studies
  - Assessing responsiveness at the network level
  - Extending to other sectors

An expanding 'mobile' sector



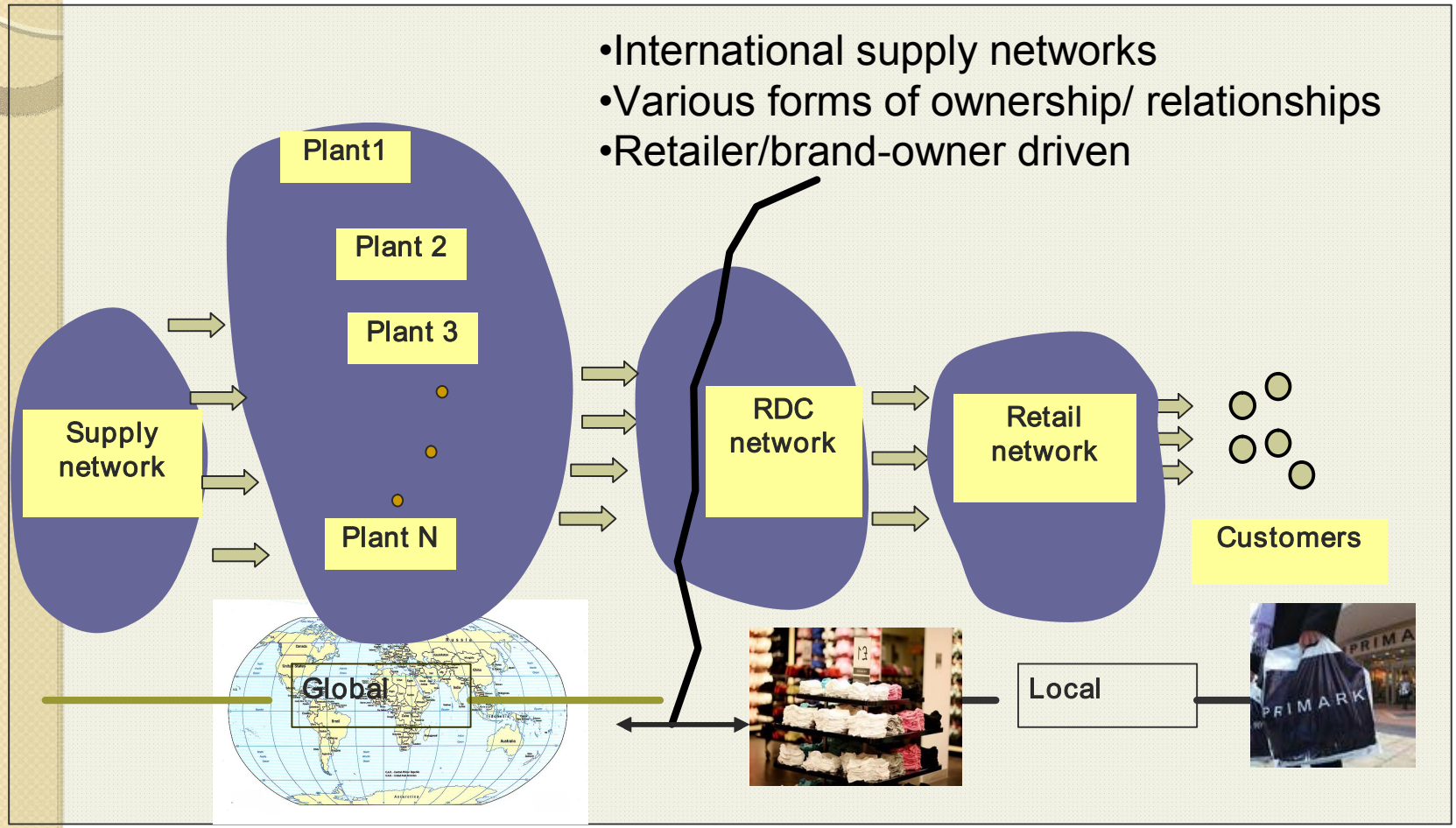
Global trade in almost doubled in a decade:

- Market liberalisation
- Removal of trade barriers
- Development of consumer economies
- Reduction in apparel and textile prices

Textile & apparel production highly mobile, changing significantly over a decade

Vollrath et al (2004)

Supply networks in clothing



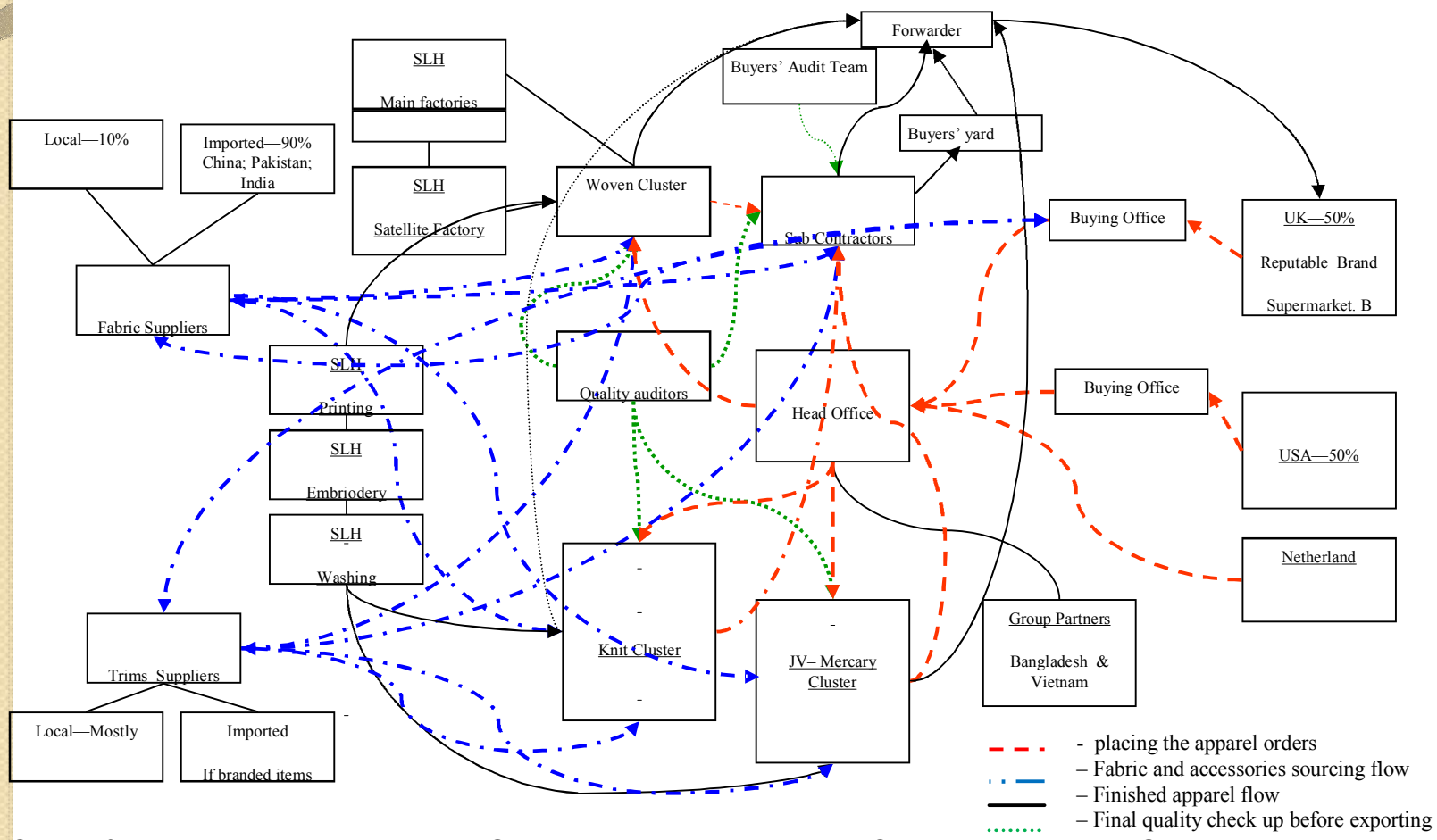
MacCarthy & Jayarathne (2010 a)

Objectives

- To identify the different supply network structures operating in the international clothing industry

- To examine how such structures are developed and managed with respect to the goals of different retailers

Disentangling a clothing supply network



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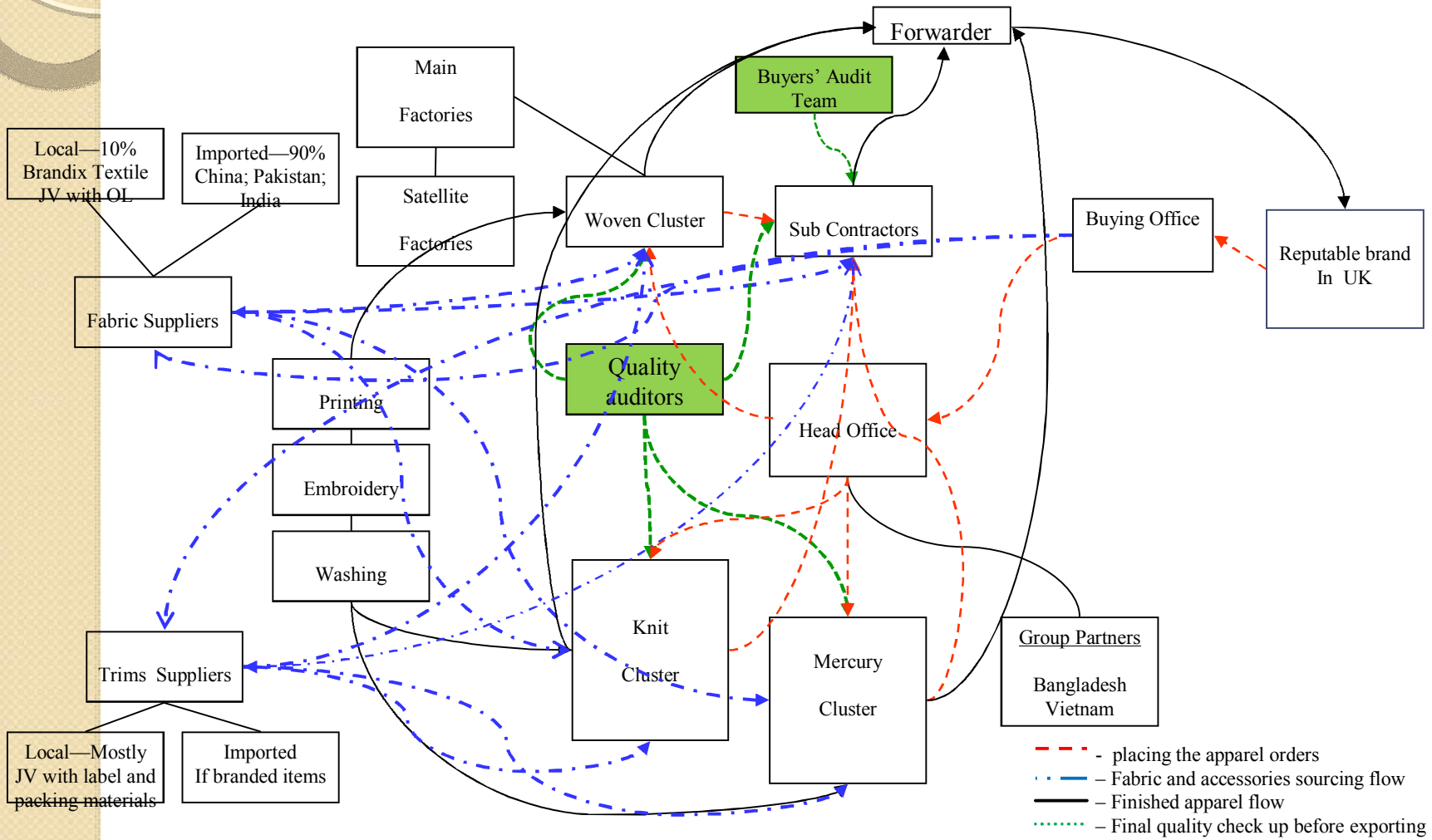
Supply Network for a leading retailer



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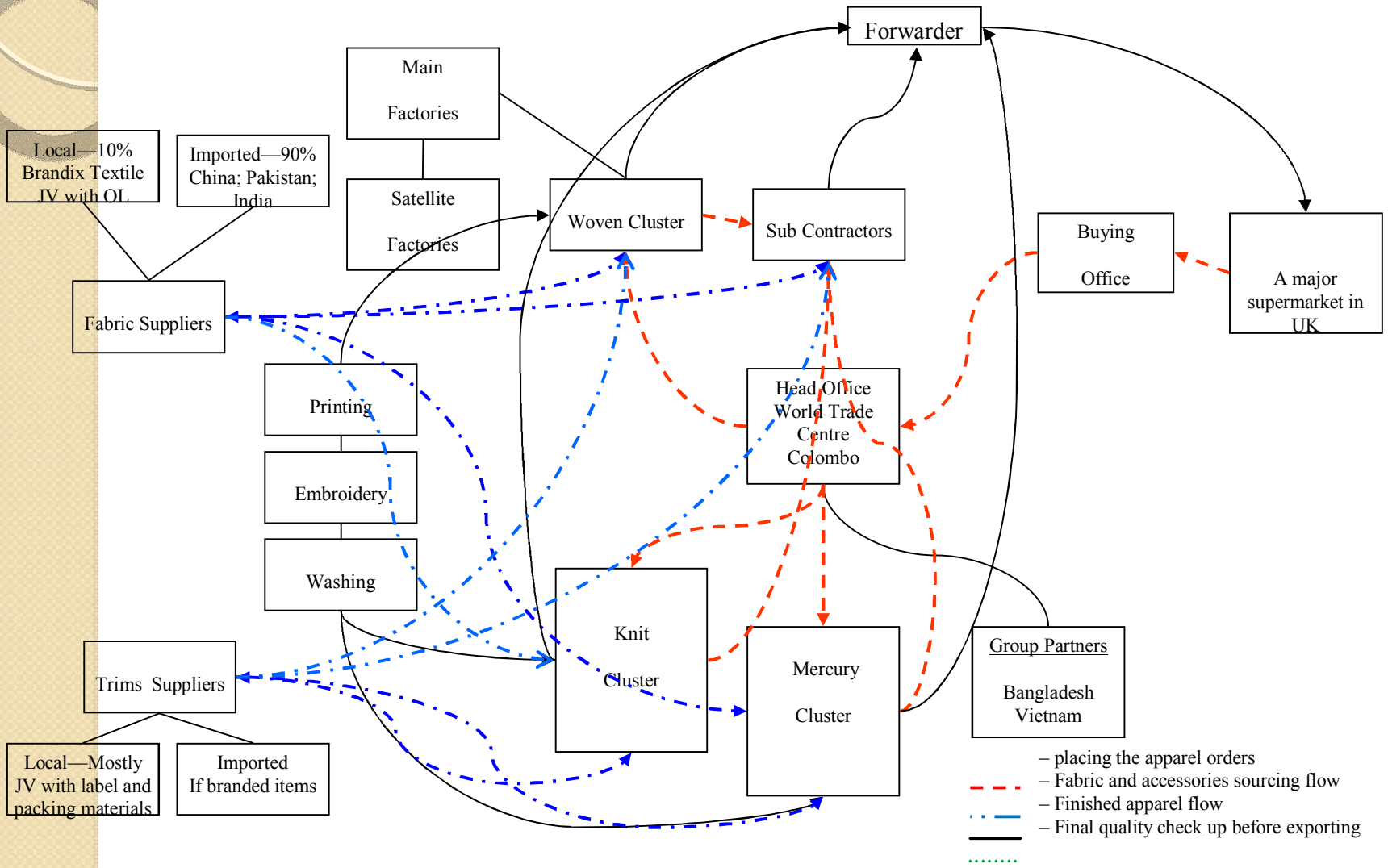
Supply network for a major supermarket



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Generic network classifications$_1$

- Internal, vertical, horizontal and diagonal (Hinterhuber and Levin 1994)
- Flexible, hollow, virtual, and value-added (Cravens et al 1996)
- 'Supply network', 'agreements and joint ventures', and 'regional industrial systems' (Nassimbeni 1998)
- Lamming et al. (2000)
  - product innovation and uniqueness ('innovative-unique' products against 'functional' products),
  - product complexity (high against low)

Generic network classifications$_2$

- Rigid, flexible, modularized and postponed (Ernst and Kamrad 2000)
- Harland et al. in 2001 - whether they are routinized or dynamic and the degree of influence of the focal firm (high or low)
- Efficient supply chains, risk-hedging supply chains, responsive supply chains, and agile supply chains (Lee 2002)
- 'Equal-partner network' and 'dominated network' (Verwaal and Hesselmas 2004)
- Many supply network classifications but limited in capturing key elements of importance in clothing supply networks

Methodology

- Sri Lankan Clothing Industry - fieldwork in a non-contrived setting
- Unit of Analysis – specific clothing supply networks
- Several data sources – interviews, documents, observations
- 30 case companies – in-depth interviews with strategic and operational managers

Classifying international supply networks

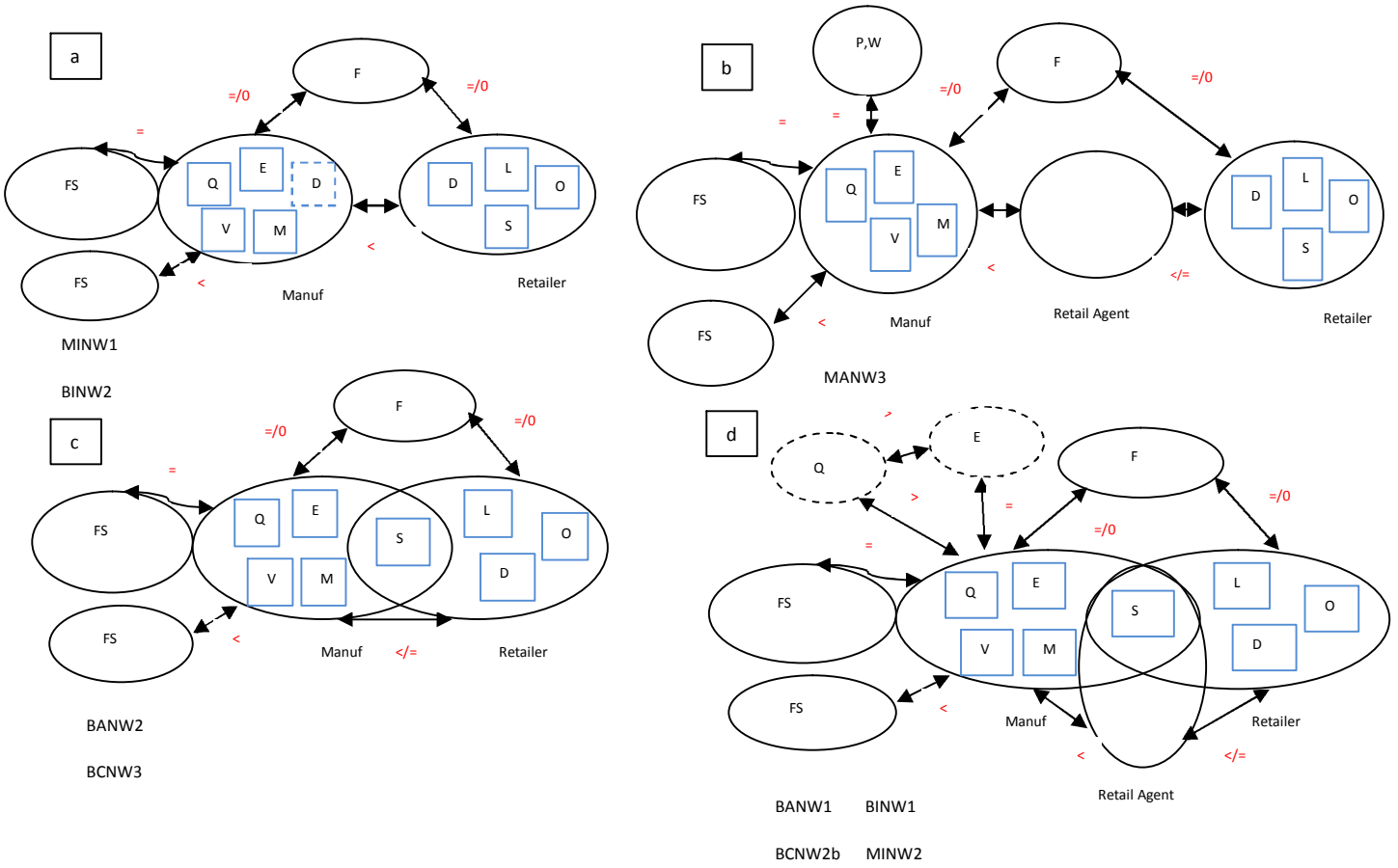
- Principles of the classification
  - Integrated vs Independent
  - Nature of integration
  - Involvement of retailers when dealing with manufacturers
  - Process ownership – design process ownership, sample development process ownership, sourcing process ownership (retailers, retailer agents, prime manufacturers, collaborative efforts)
  - Design/garment complexity
  - Involvement of retailers in quality assurance
- As a consequence ‘Power regimes’ are evident in the classification

Classifying international supply networks

- Six main networks – twenty four specific types
  - Group 1: Networks operating with backward integration
  - Group 2: Networks operating in the absence of backward integration but with forward integration
  - Group 3: Networks operating independently and including agents and temporary collaborative functions
  - Group 4: Networks operating independently and including agents, but no temporary collaborative functions
  - Group 5: Networks operating independently and no agents
  - Group 6: Networks operating with international trading companies

Classifying international supply networks

Group 1: Networks operating with backward integration



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Classifying international supply networks

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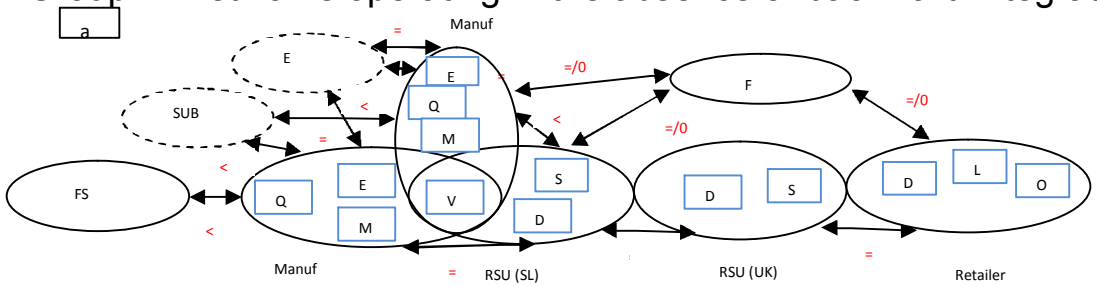
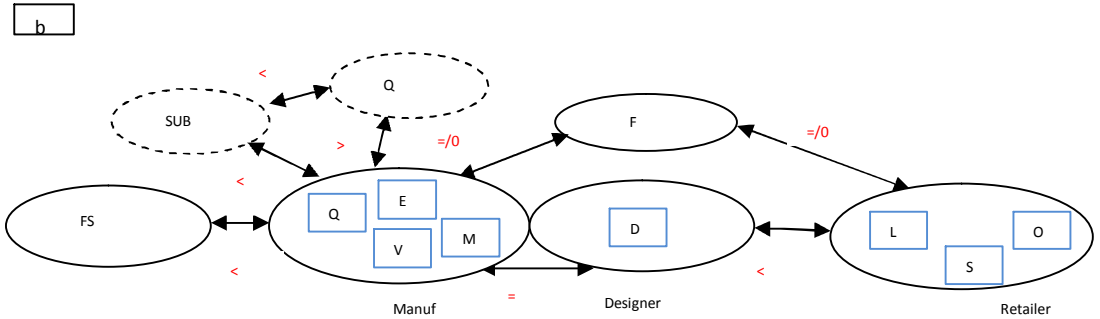
Group 2: Networks operating in the absence of backward integration but with forward integration



NNW1 SGNW1a VTNW1a

OGNW2 CKDNW1a – S BCNW2a

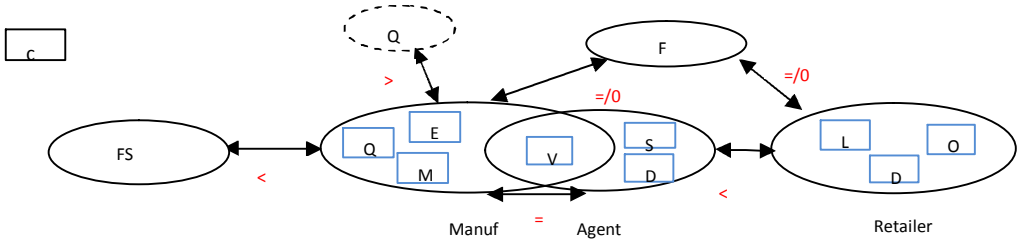
SNW2c UANW1



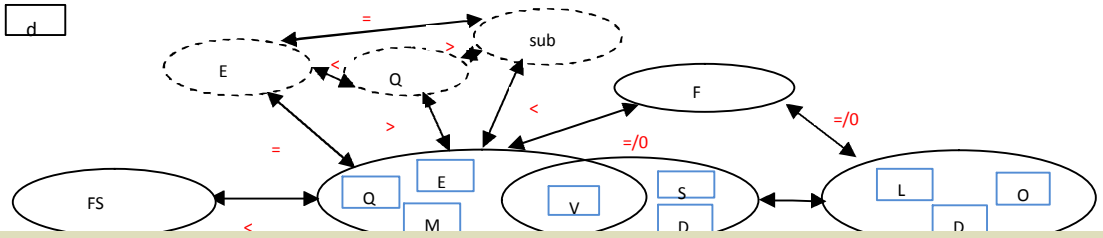
HCNW3

ENW1b-S

CNW1b - S



SSNW1



CMNW1 CNW1

TSNW1 –S ENW1

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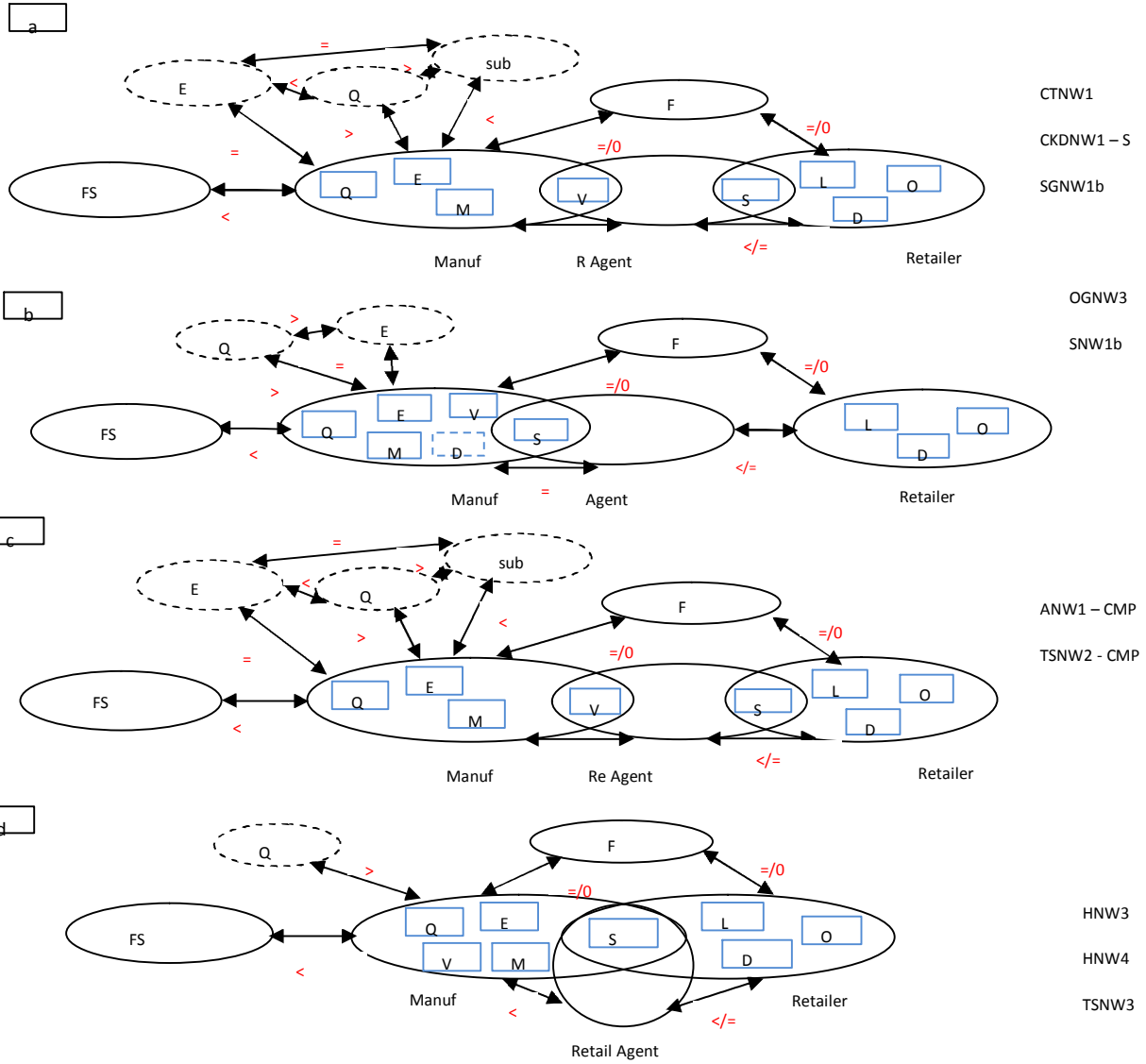
Group 3: Networks operating independently and including agents and temporary collaborative functions



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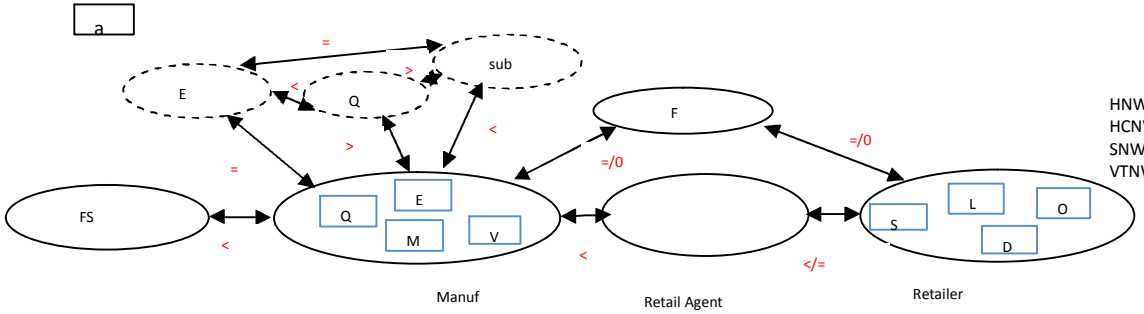
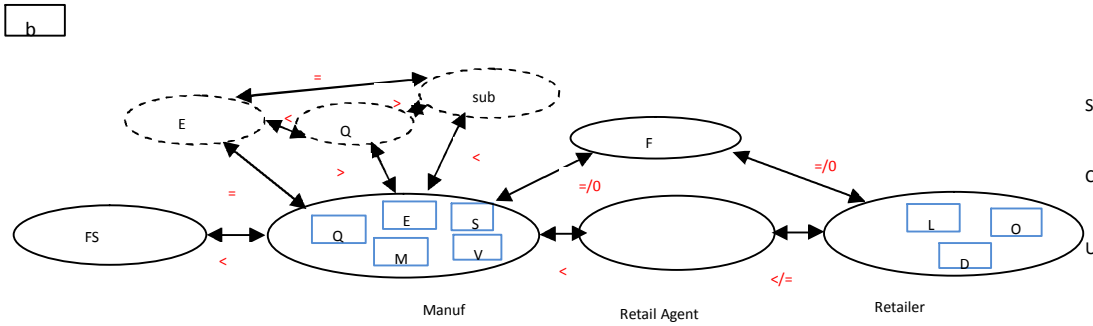
Group 4: Networks which operate independently and include agents, but no temporary collaborative functions



HNW2A HCNW1b SNW2b VTNW1b

JGNW1 MENW1a SNW2a VTNW2

LFNW2 MENW2 SGNW1c



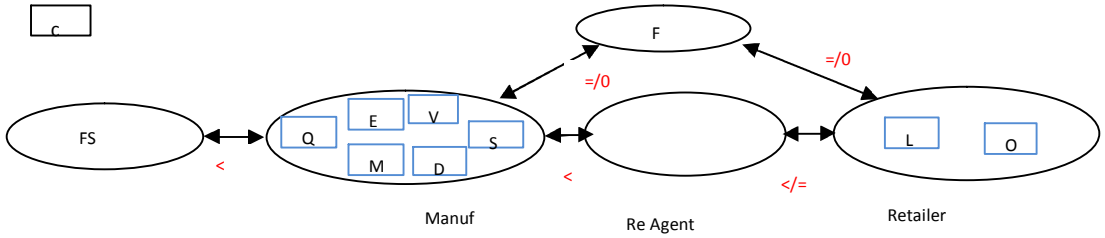
SGNW3

ENW2 ENW3

CNW2

CNW3 HCNW1a

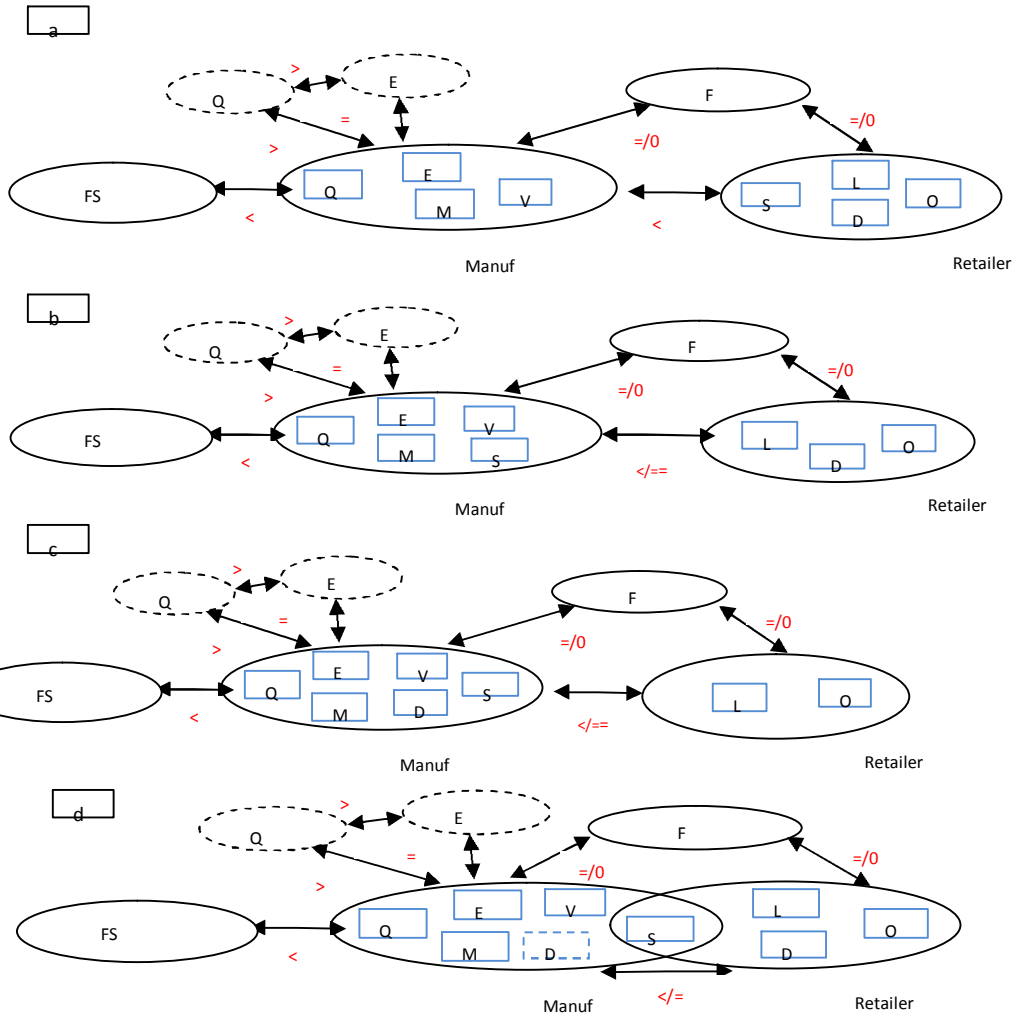
UANW2



HNW2b

Classifying international supply networks

Group 5: Networks which operate independently and no agents



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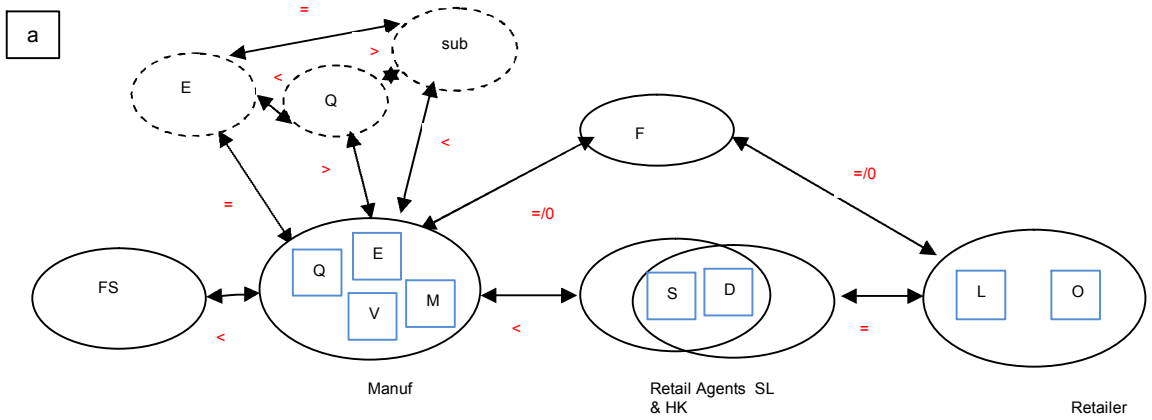
Classifying international supply networks

Group 6: Networks which operate with internationally operating trading companies



LFNW1 MNW1
SNW1a CKDNW1b - S

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Summary of the findings

- The networks are not placed in a single general category as happens with other classification schemes e.g.
  - Virtual networks (Cravens et al 1996)
  - Flexible networks (Cravens et al in 1996 and by Ernst & Kamrad in 2000)
  - Responsive networks (Lee in 2002)
  - Dominated networks (Verwaal & Hesselmas in 2004)
  - Dynamic/high degree of focal firm influence (Harland et al in 2001)
- Major clothing manufacturers operate within more than one type of supply network
- The same network physical structures have been shown to operate under different policies
- The physical structure of a network may change temporarily for specific orders through utilization of additional embellishment providers and quality auditors
  - depends on the nature of product

Summary of the findings

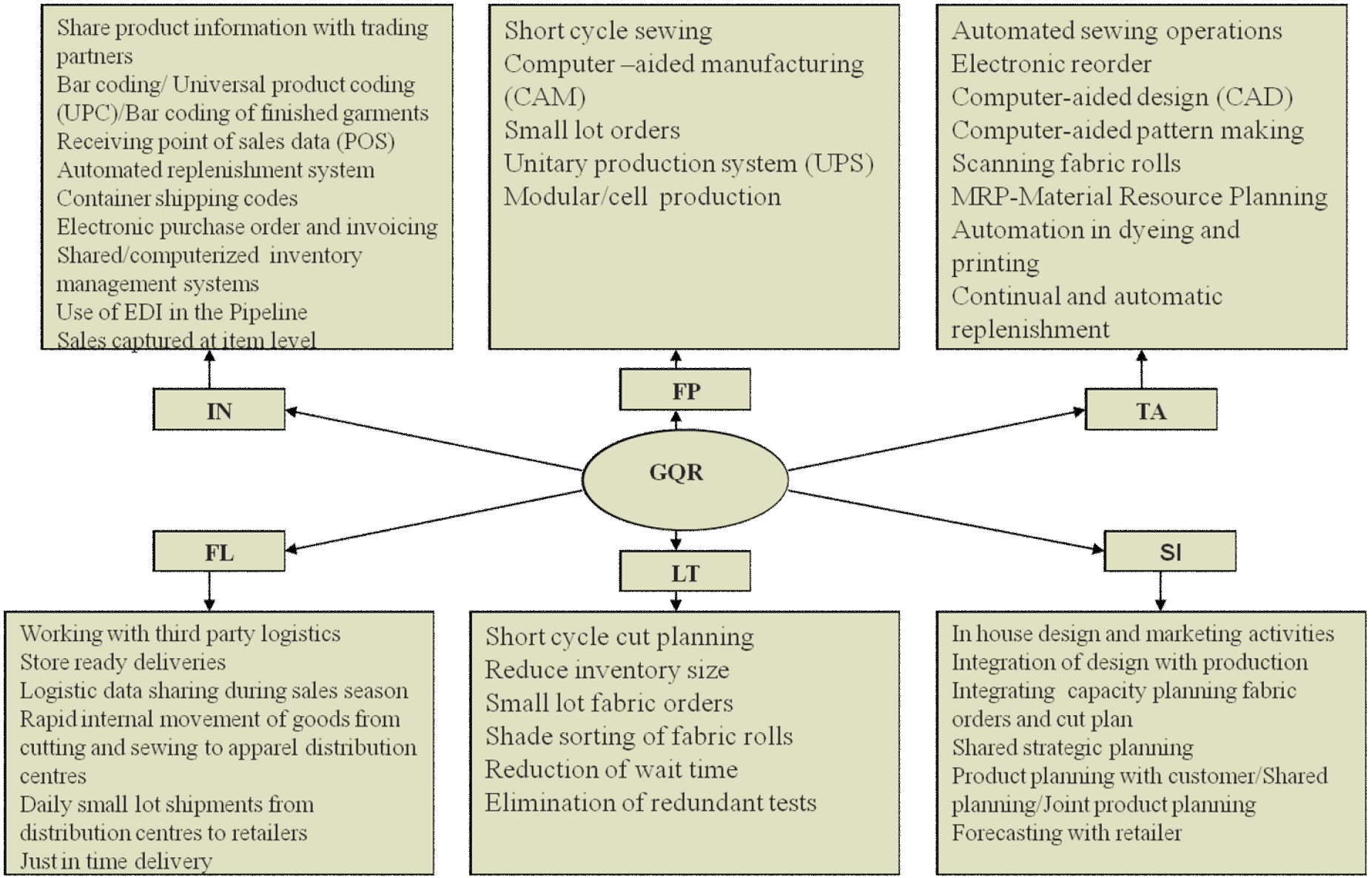
- Development of the idea 'retailer – driven supply networks' Gereffi (1999) and Tyler (2006)

	Upstream power			
Downstream power		Dominance	Interdependence	Dependence
	Dominance		Group 1 (a), (b), (c), (d), (h)	Group 4 (a), (b), (c) Group 2 (b), (c), (d) Group 3 (a), (b), (c), (d) Group 5 (a), (b), (c), (d)
	Interdependence		Group 1 (e), (f), (g)	Group 2 (a) Group 6 (a)
	Dependence			

Further studies

- Assessing responsiveness (in terms of Global Quick Responsiveness – GQR) in these identified networks
- Common requirements for QR (MacCarthy and Jayarathene, 2010)
  - IN - Fast and accurate information transmission
  - FL - Flexible production resources
  - TA - Invest in/utilise technology and automation where appropriate
  - FL - Fast logistics
  - LT - Exploit all opportunities for lead time compression
  - SI – Systems integration
- How are these achieved at network level?

GQR across the network



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Extending to other sectors

- Not unique to the clothing industry - direct analogues in many consumer product sectors
- Demand factors - global brands and global advertising, extending the spread of markets for products
- Do the types of supply network configurations observed in the clothing sector extend to other sectors?

Questions