

Chapter 6

Supply chain management

Learning outcomes

- Identify the main elements of supply chain management and their relationship to the value chain and value networks
- Assess the potential of information systems to support supply chain management and the value chain

Management issues

- Which technologies should we deploy for supply chain management and how should they be prioritised?
- Which elements of the supply chain should be managed within and beyond the organisation and how can technology be used to facilitate this?
- What are the practical issues with online supply chain management?

What is supply chain management?

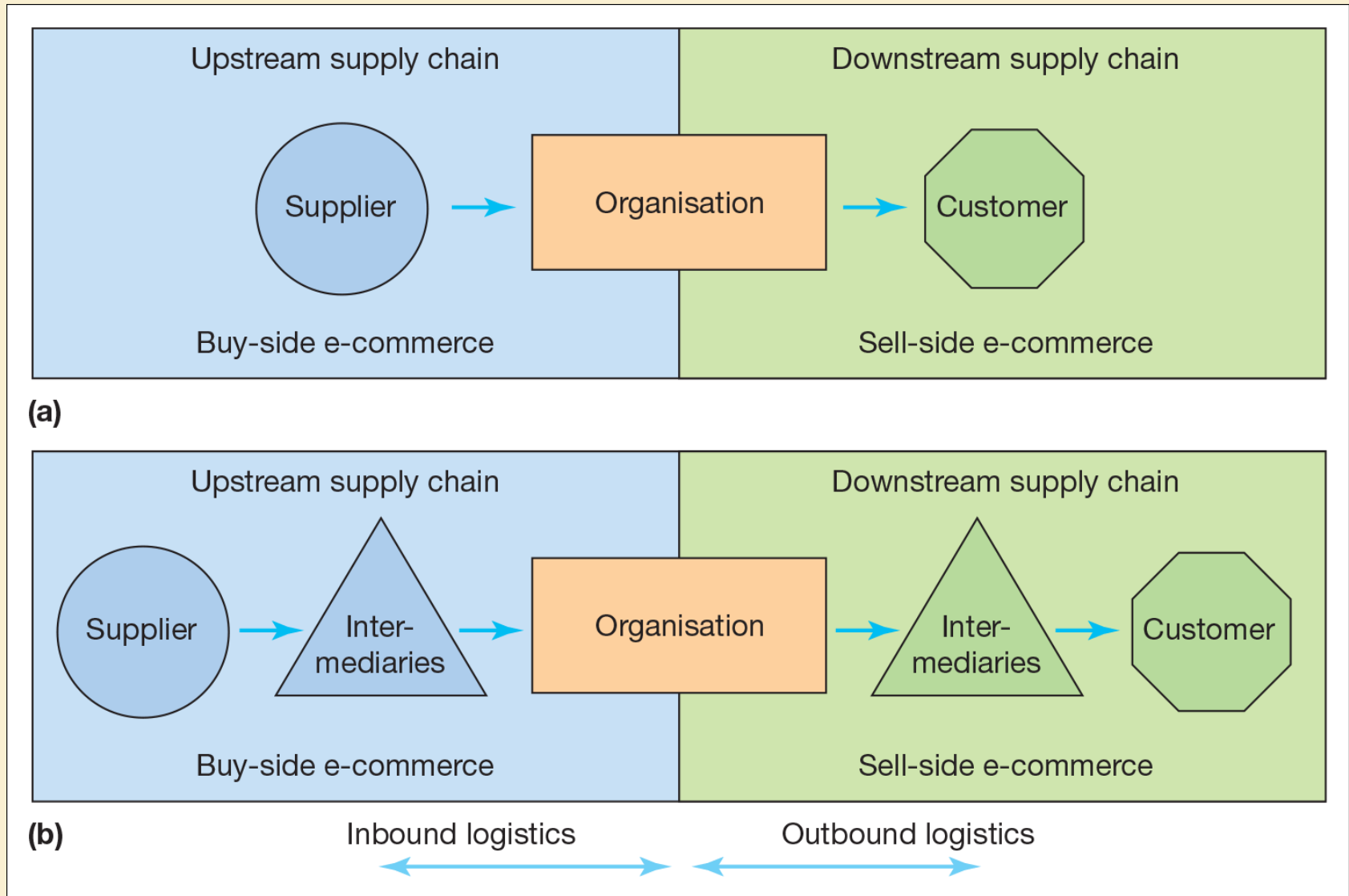


Figure 6.2 Members of the supply chain: (a) Simplified view, (b) Including intermediaries

SCM – some definitions

- **Supply chain management (SCM)** The coordination of all supply activities of an organisation from its suppliers and partners to its customers.
- **Upstream supply chain** Transactions between an organisation and its suppliers and intermediaries, equivalent to buy-side e-commerce.
- **Downstream supply chain** Transactions between an organisation and its customers and intermediaries, equivalent to sell-side e-commerce.

SCM – Efficient Consumer Response

Objective	Strategy
Timely, accurate, paperless information flow	Revision of organisation processes supported by information systems
Smooth, continual product flow matched to variations in consumption levels	See strategies below
Optimise productivity of retail space and inventory	Efficient store assortments
Optimise for time and cost in the ordering process	Efficient replacement
Maximise efficiency of promotions	Promotions are integrated into entire supply chain planning
Maximise effectiveness of new product development (NPD)	NPD process improved and better forward planning with other partners

Table 6.2 Objectives and strategies for efficient consumer response (ECR)

SCM – Efficient Consumer Response

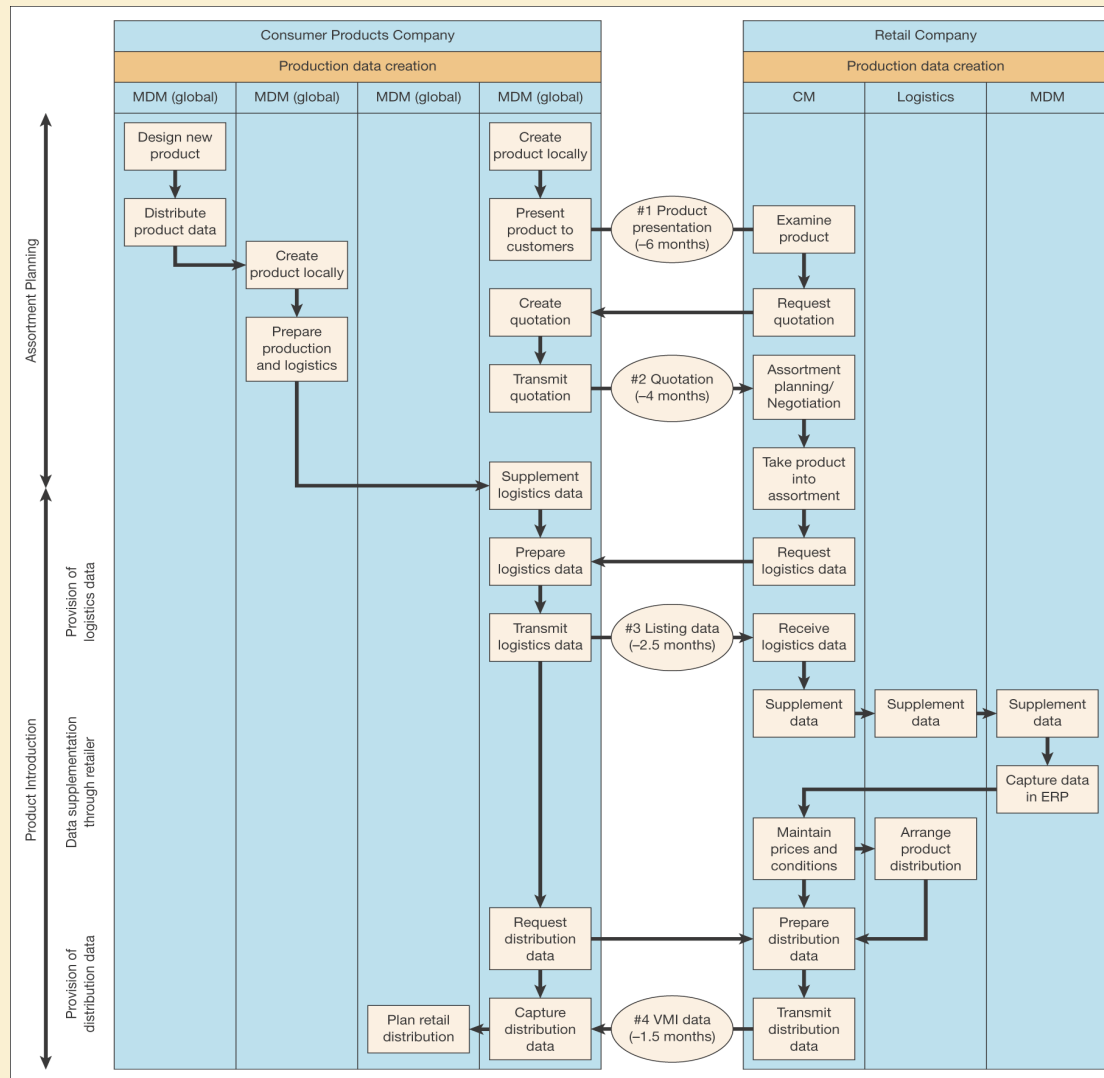


Figure 6.3 Inter-organisational process flow for introduction of a new product

Source: Excerpted from Towards the interorganisational product information supply chain: Evidence from the retail and consumer goods industry by C. Legner and J. Schemm © 2008. Used with permission from Association for Information Systems, Atlanta, GA, 404-713-7444, www.aisnet.org. All rights reserved.

A simple model of a supply chain

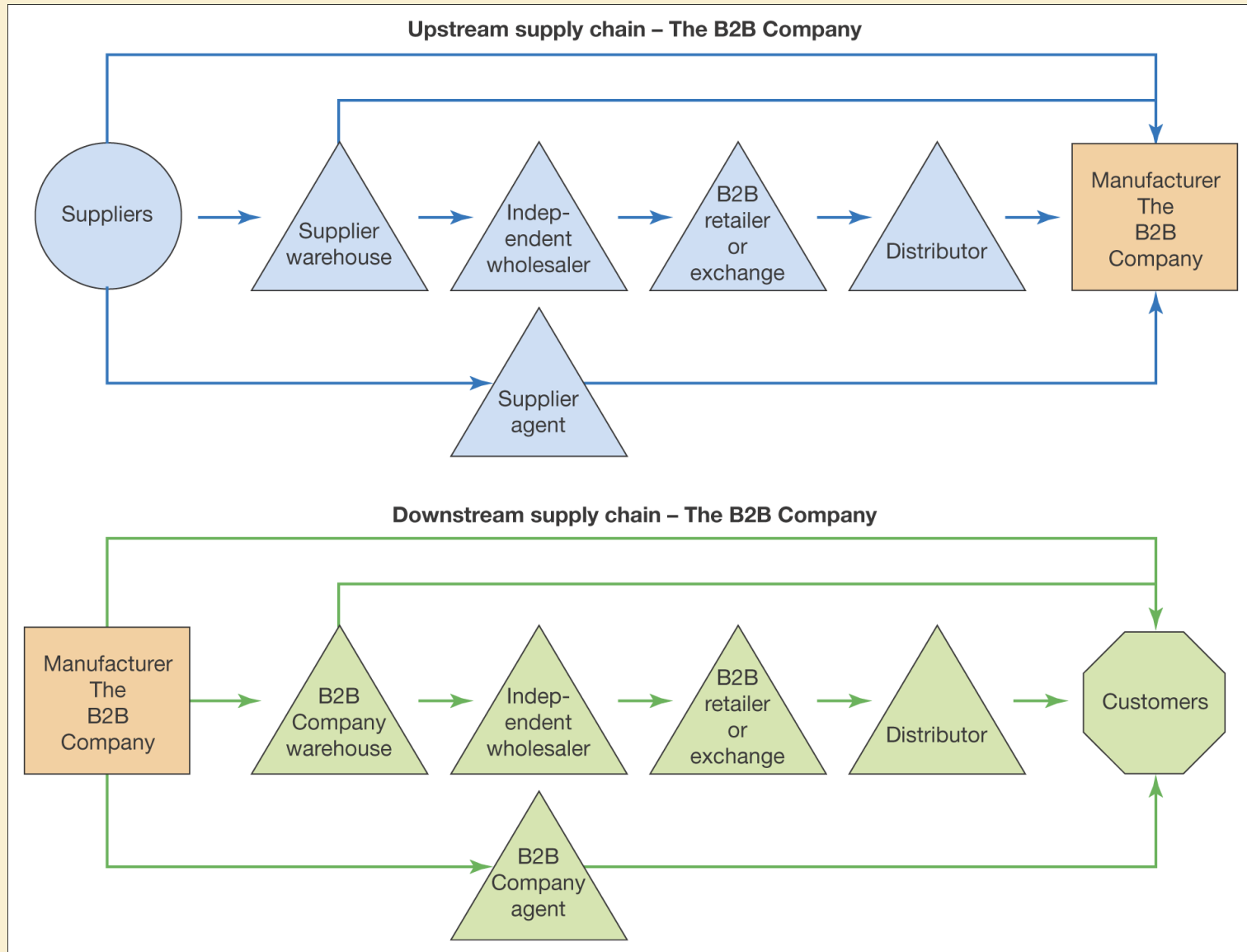


Figure 6.5 A typical supply chain for a B2B company

Logistics

Inbound logistics:

The management of material resources entering an organisation from its suppliers and other partners.

Outbound logistics:

The management of resources supplied from an organisation to its customers and intermediaries.

Push supply chain models

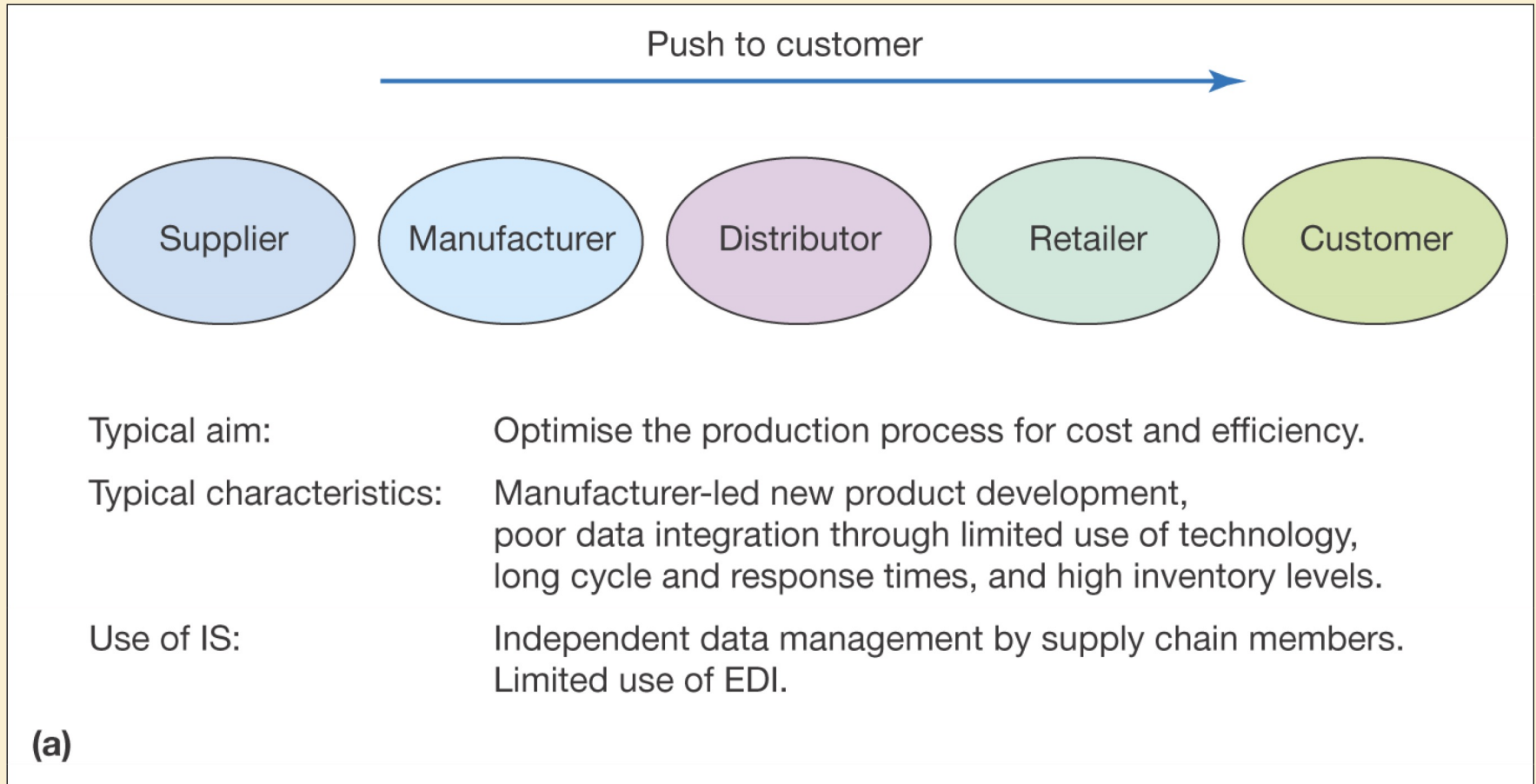


Figure 6.7 Push and pull approaches to supply chain management

Pull supply chain models

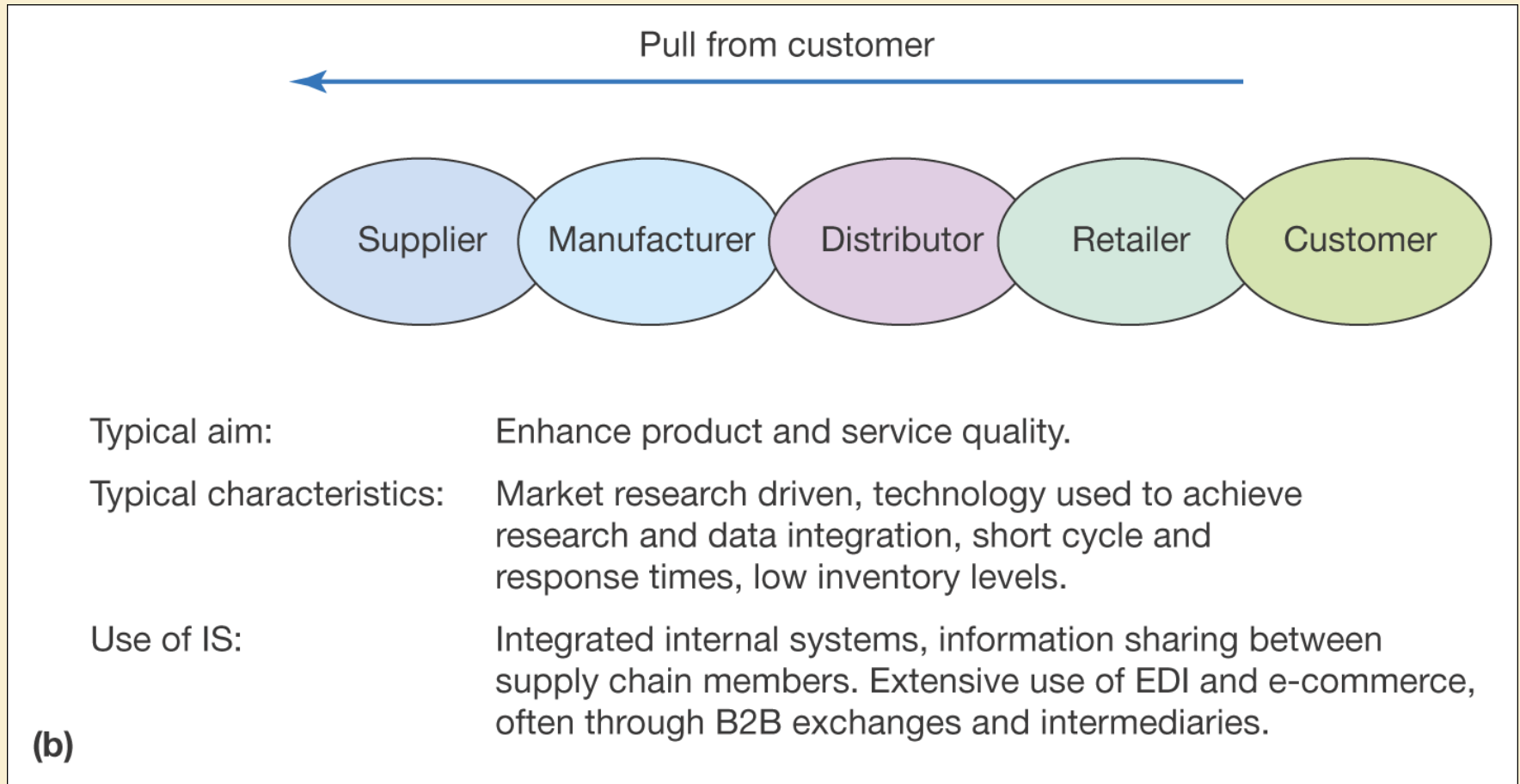


Figure 6.7 Push and pull approaches to supply chain management (Continued)

Value chain

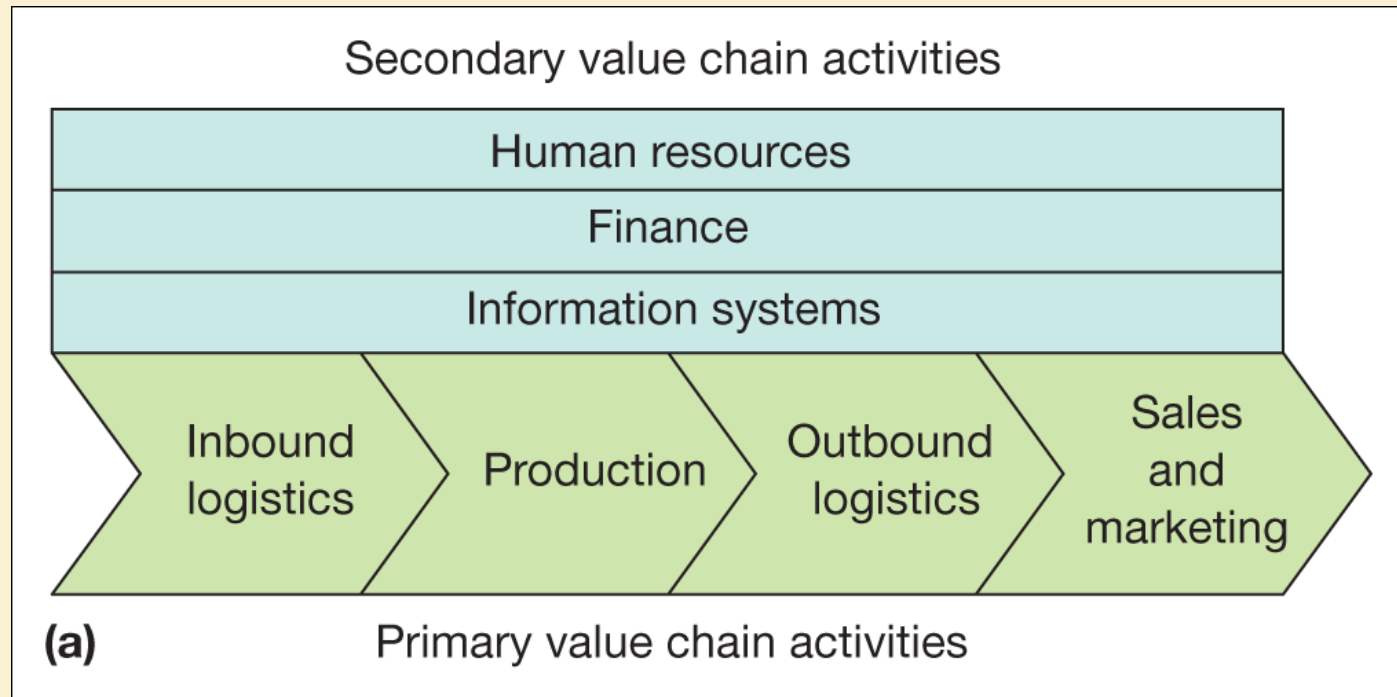


Figure 6.8 Two alternative models of the value chain: (a) Traditional value chain model

Source: Adapted from Deise *et al.* (2000) Figure 6.4(b).

Restructuring the internal value chain

Weaknesses in the traditional value chain:

- Applicable to manufacturing physical products.
- Pushing products to the customers.
- Importance of value networks is underrated.

The solution:

A revised form of the value chain.

The value chain – con't

The value stream

The combination of actions required to deliver value to the customer as products and services.

Value chain analysis

Evaluating value added at each individual activity of an organisation.

Value stream analysis: activities

- That create value as perceived by the customer
- That create no value but required in production
- That do not add value

Value networks

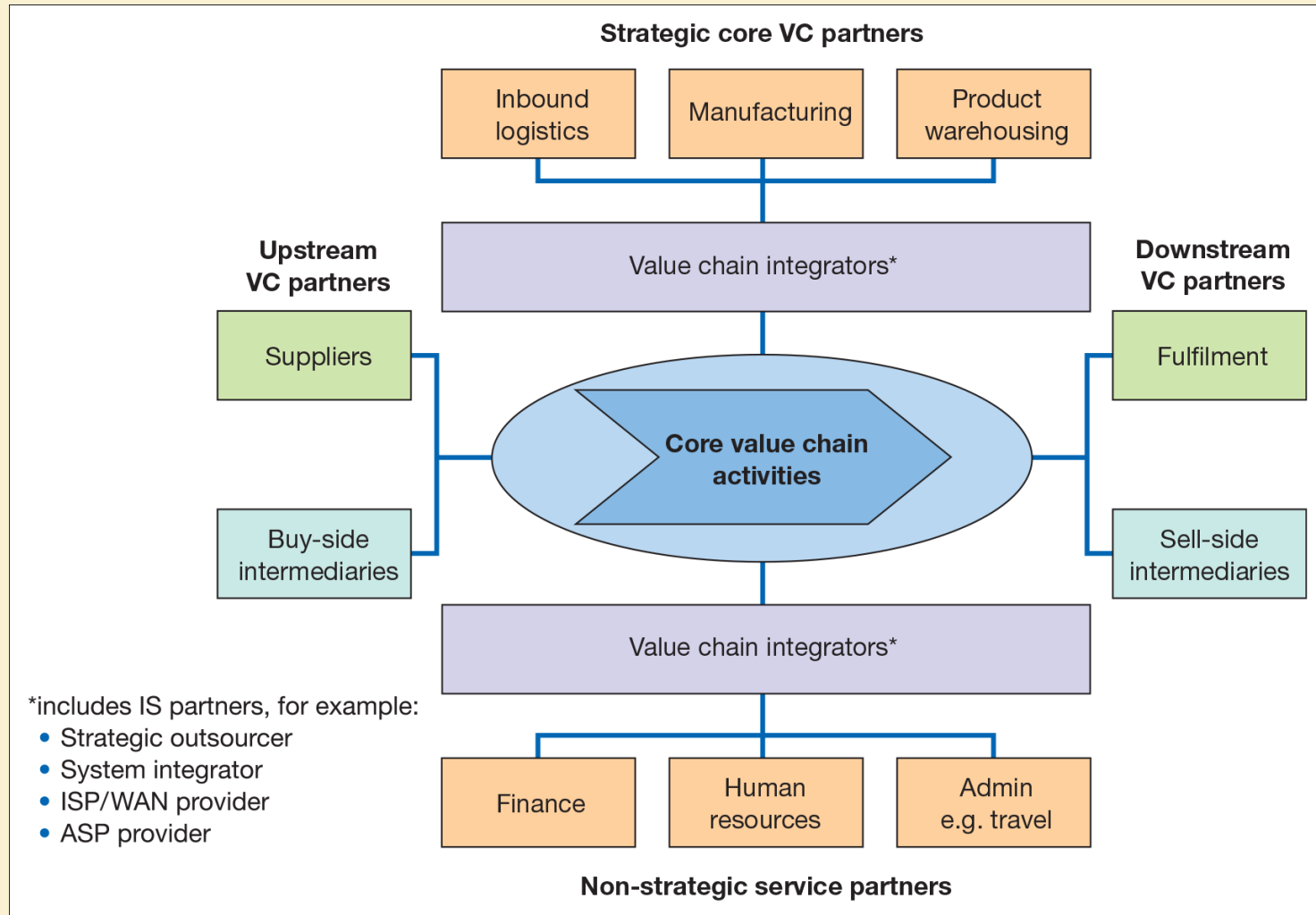


Figure 6.9 Members of the value network of an organisation

Source: Adapted from Deise *et al.* (2000).

Towards virtual organisations

Definition:

An organisation which uses ICT to allow it to operate without clearly defined physical boundaries between different functions.

Characteristics:

- Lack of physical structure
- Reliance on knowledge
- Use of communication technologies
- Mobile work
- Boundaryless and inclusive
- Flexible and responsive

Restructuring the supply chain

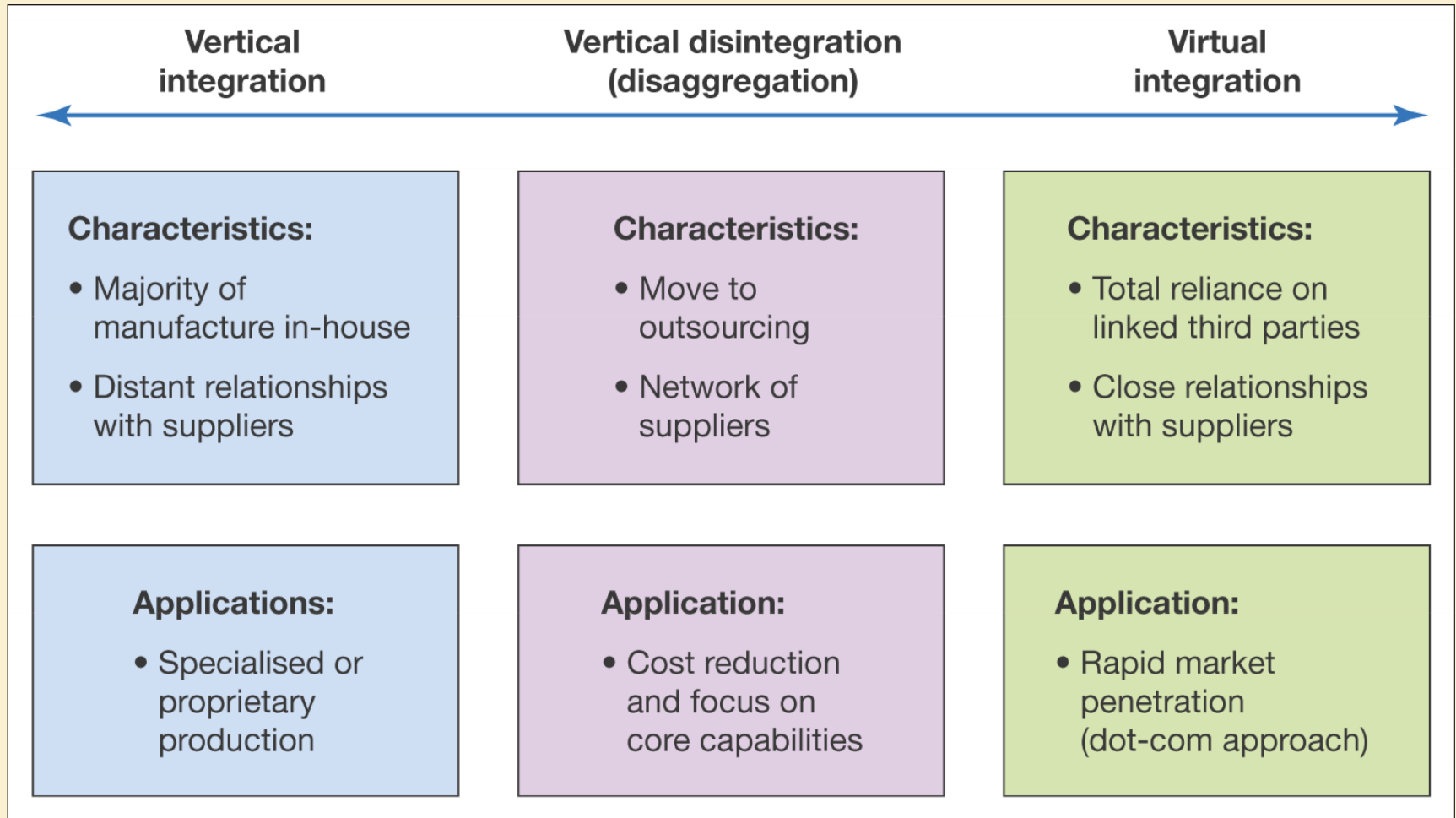


Figure 6.10 The characteristics of vertical integration, vertical disintegration and virtual integration

Technology options for SCM

Data transfer options which enable e-SCM

- EDI
- XML- or XML-EDI
- Middleware
- Manual e-mail orders
- Online purchase via web-based services
- SaaS

Benefits of e-SCM

- Increased efficiency of individual processes
- Reduces complexity of the supply chain
- Improved data integration between elements of the supply chain
- Reduced cost through outsourcing
- Innovation

Information systems for SCM

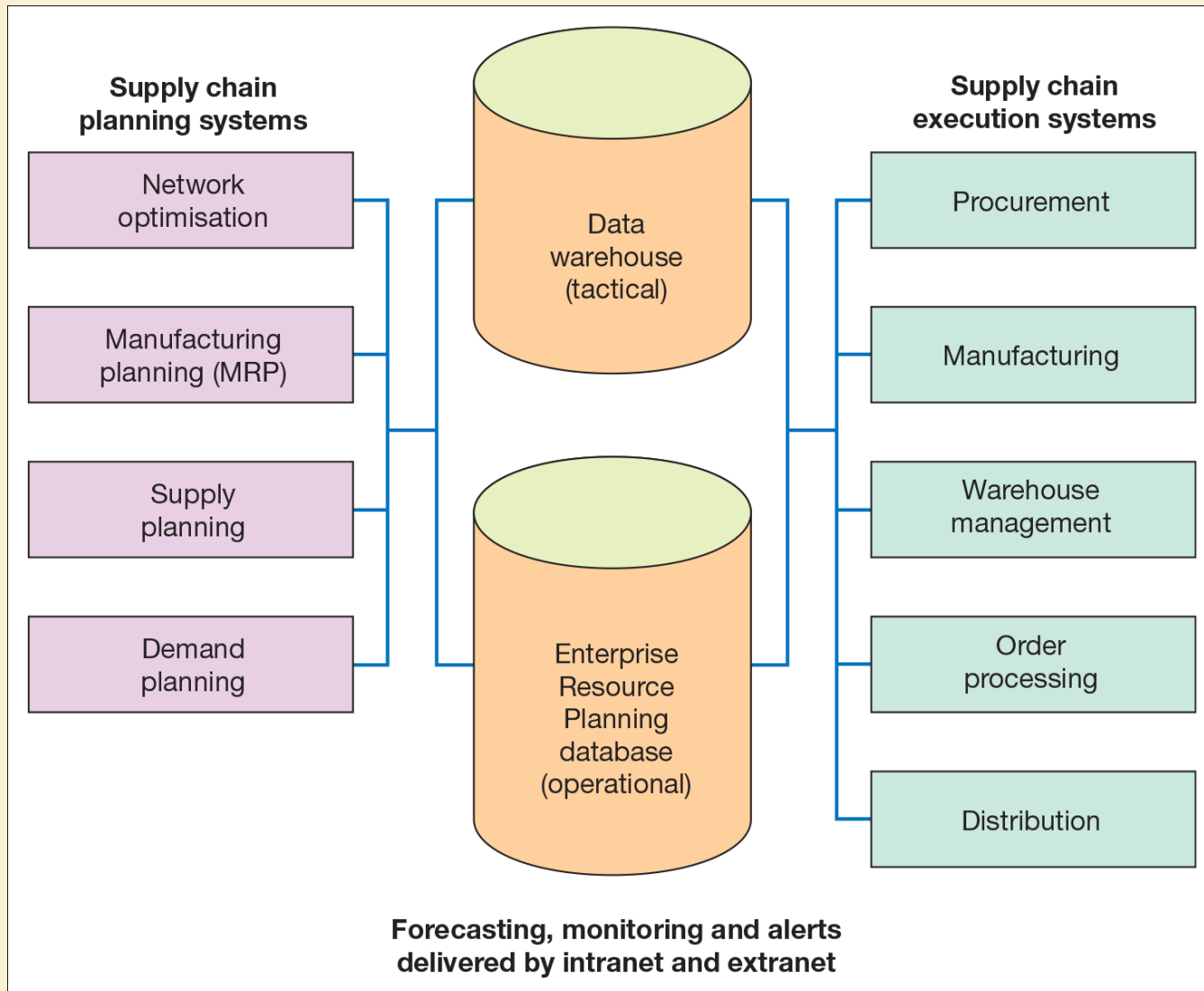


Figure 6.14 A typical IS infrastructure for supply chain management

SCM strategy process

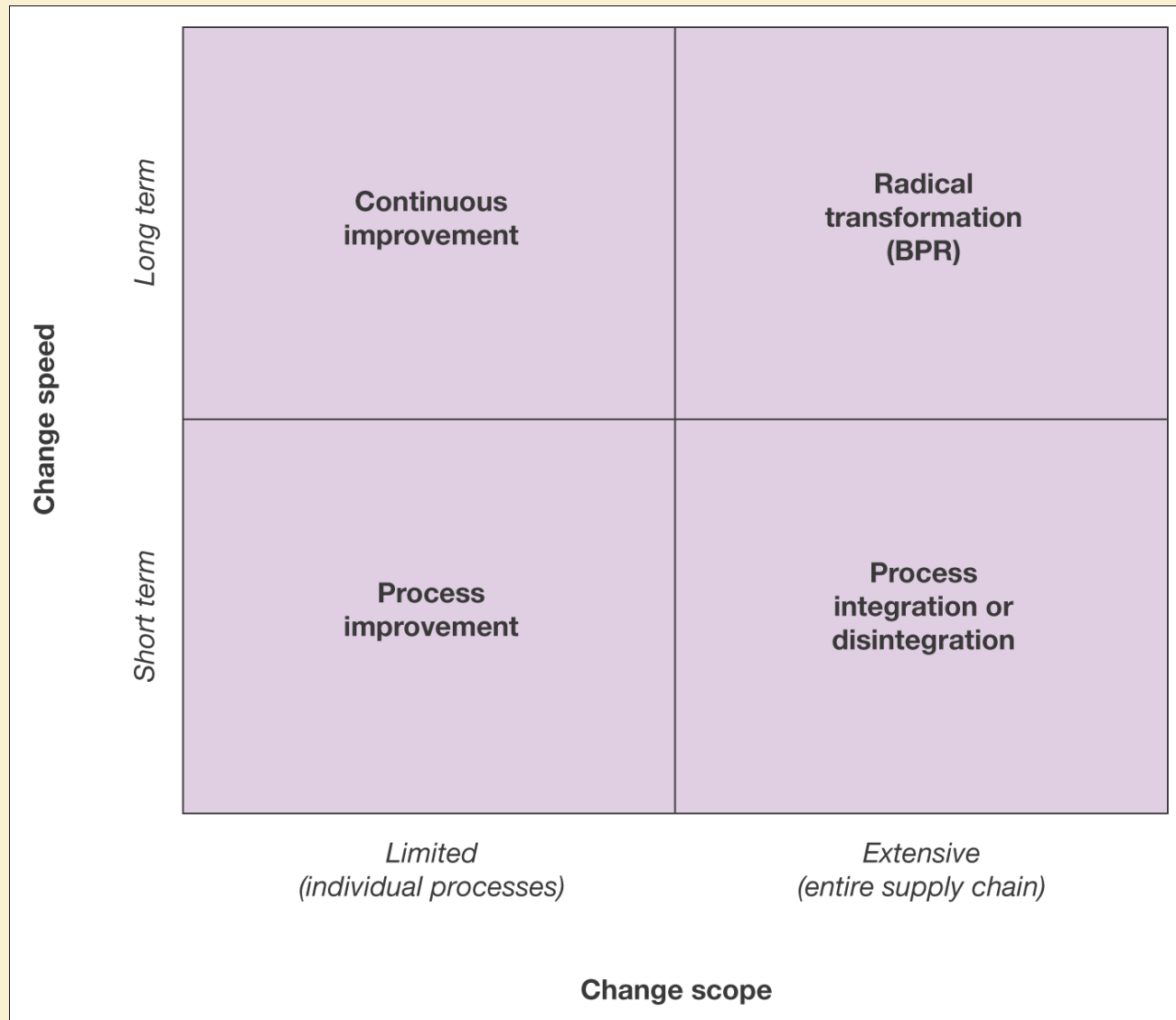


Figure 6.15 Alternative strategies for modification of the digital business supply chain