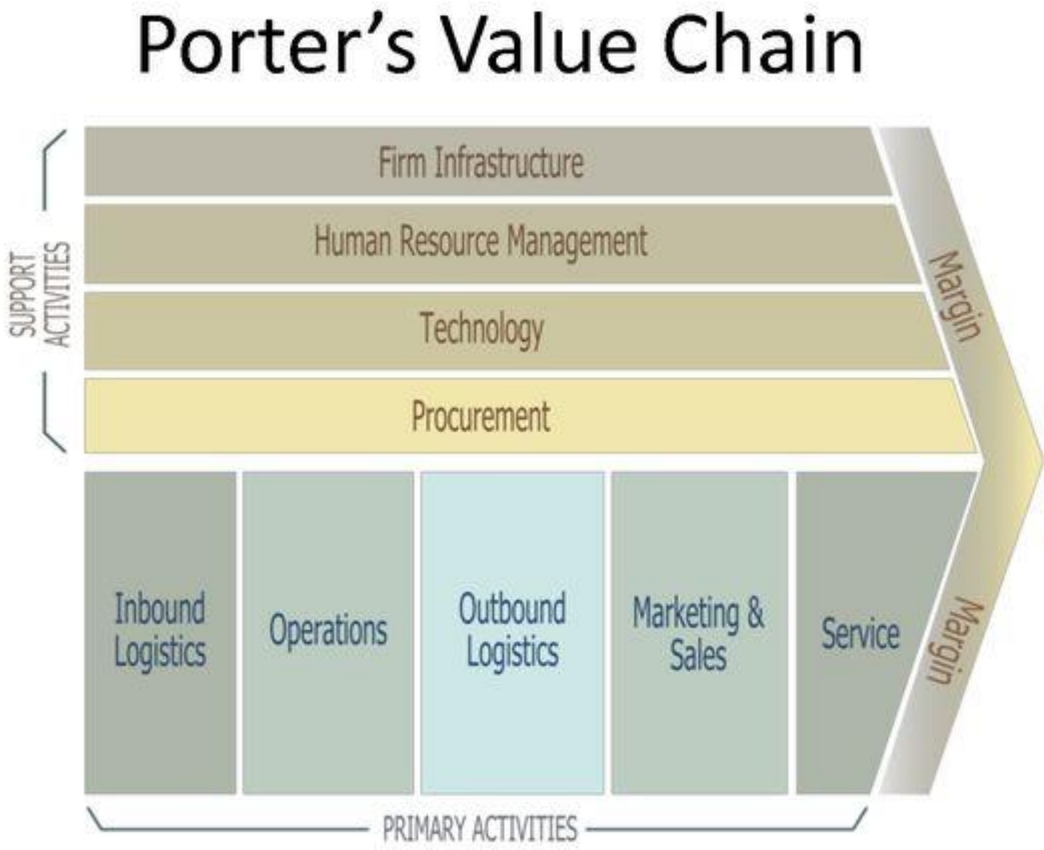
Global Supply Chain

What are we covering in this topic?

- Why – rationale of global supply chains
- Who – supply chain members
- What – tasks of supply chain management
- How – supply chain strategies

Background – value creation within the firm

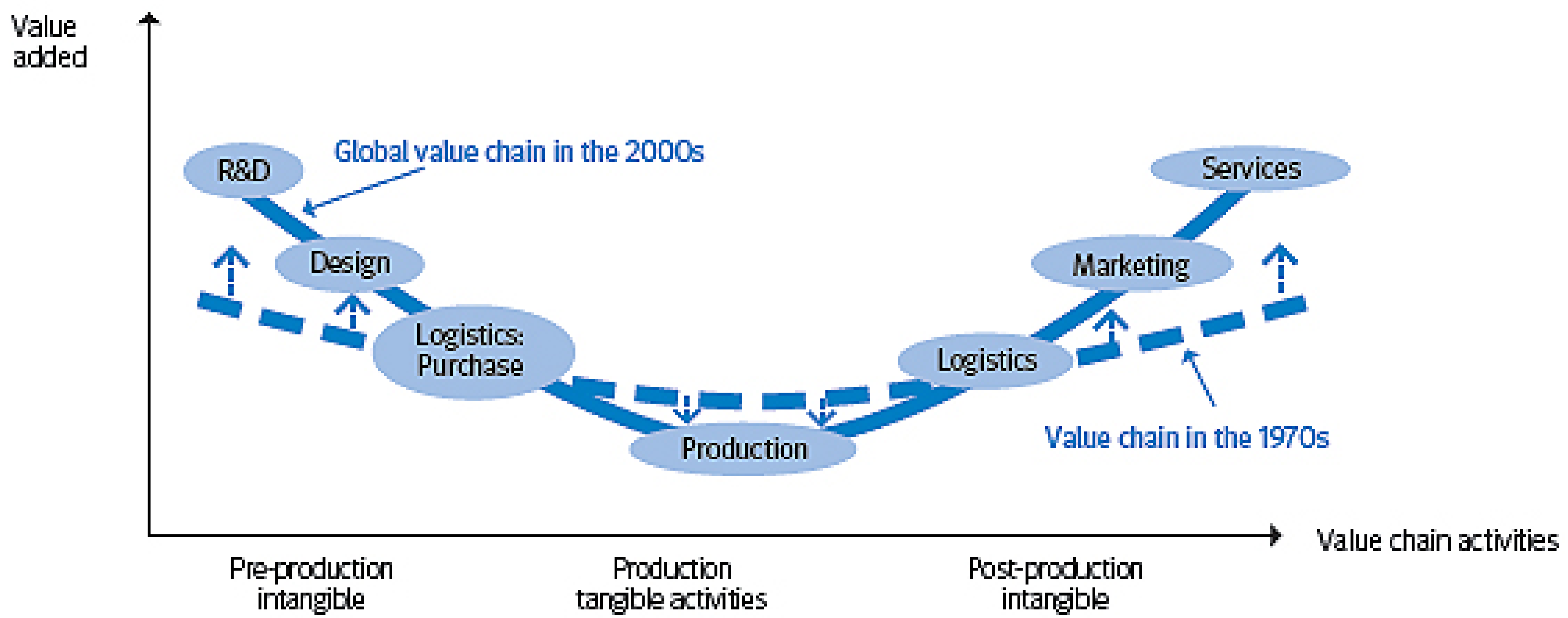


Source: Competitive Advantage. Creating and Sustaining Superior Performance by Michael E. Porter

Background – value creation within an industry

The smiling curve

Value distribution along the global value chain



Source: "Interconnected Economies Benefiting from Global Value Chains", OECD 2013.

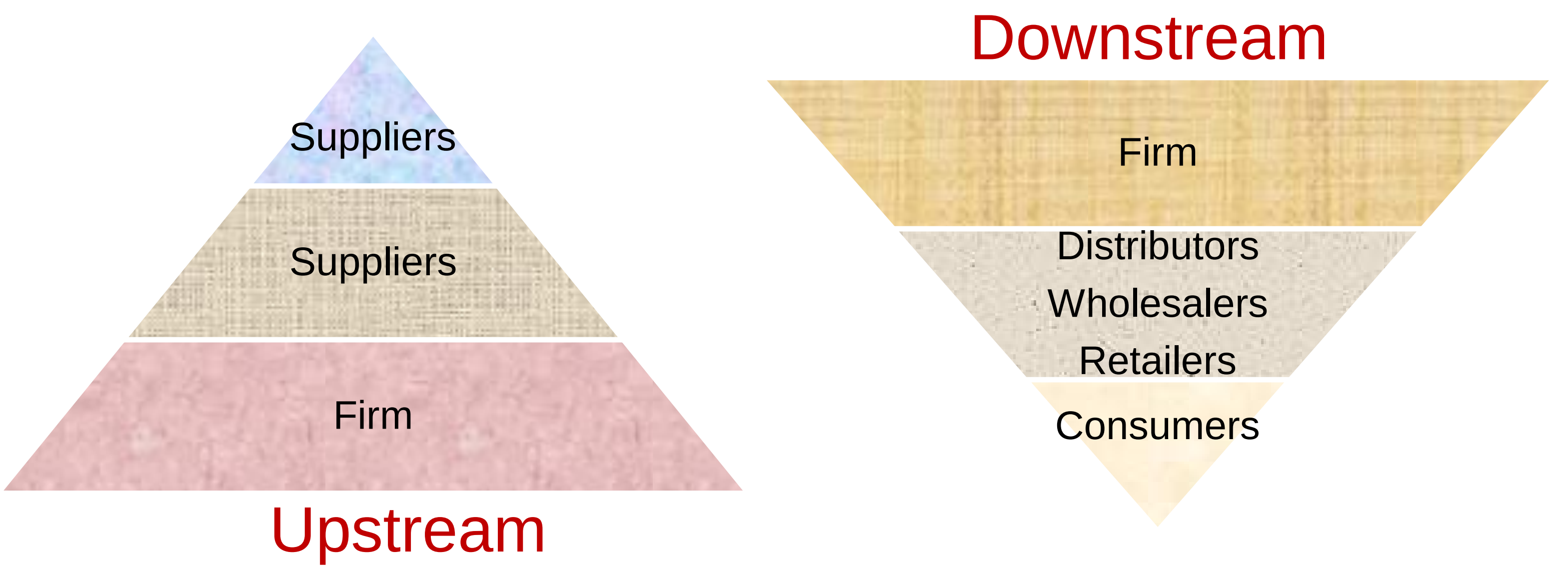
From value chain to supply chain

How is global supply chain created?
Physically relocating value-adding activities across countries

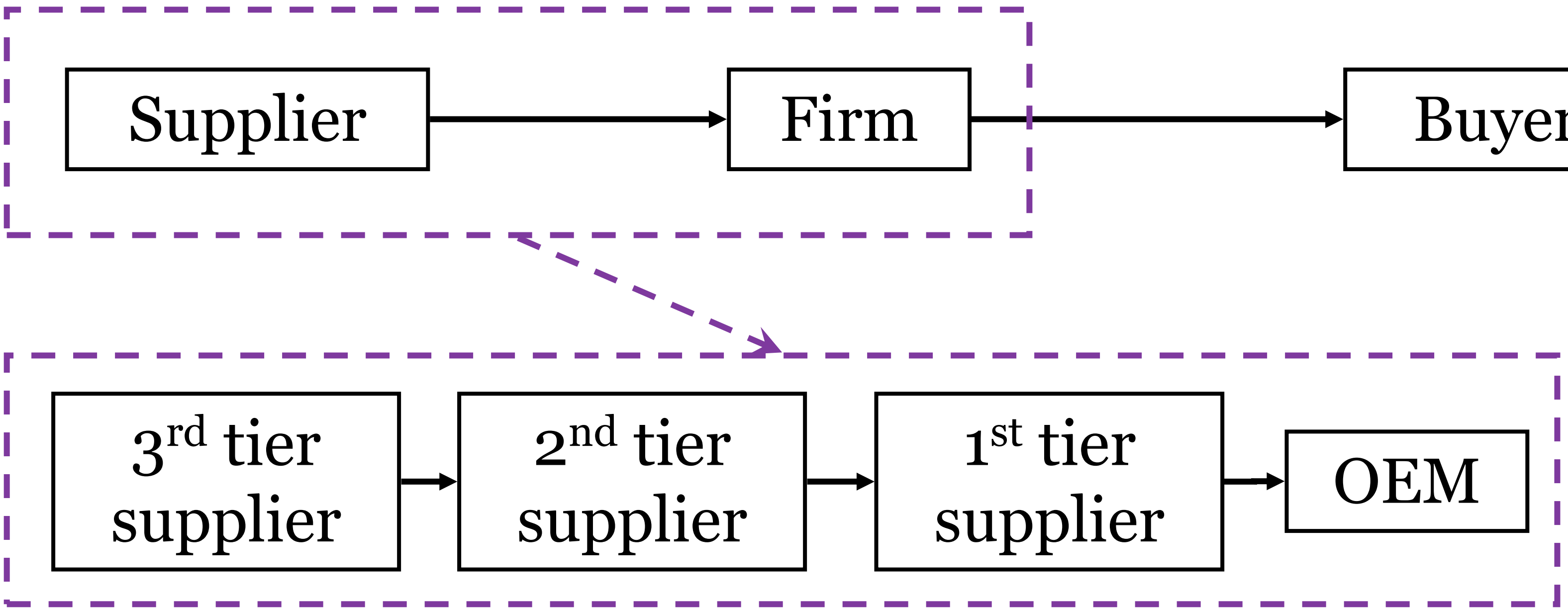
	advantages	control
▪ **Outsourcing**	➢ cost reduction ➢ flexibility ➢ core competency ➢ technology	contractual
▪ **Off-shoring**	➢ cost reduction ➢ market penetration ➢ cluster effect ➢ institutions	ownership

Supply Chain Management

- *Supply chain*
  - The network of organizations that are involved, through upstream and downstream linkages, in the different processes and activities that add value to a product or service in the hands of the ultimate customer
- *Supply chain management* (SCM)
  - The management across a network of upstream and downstream organizations of material, information and resource flows that lead to the creation of value in the form of products and/or services



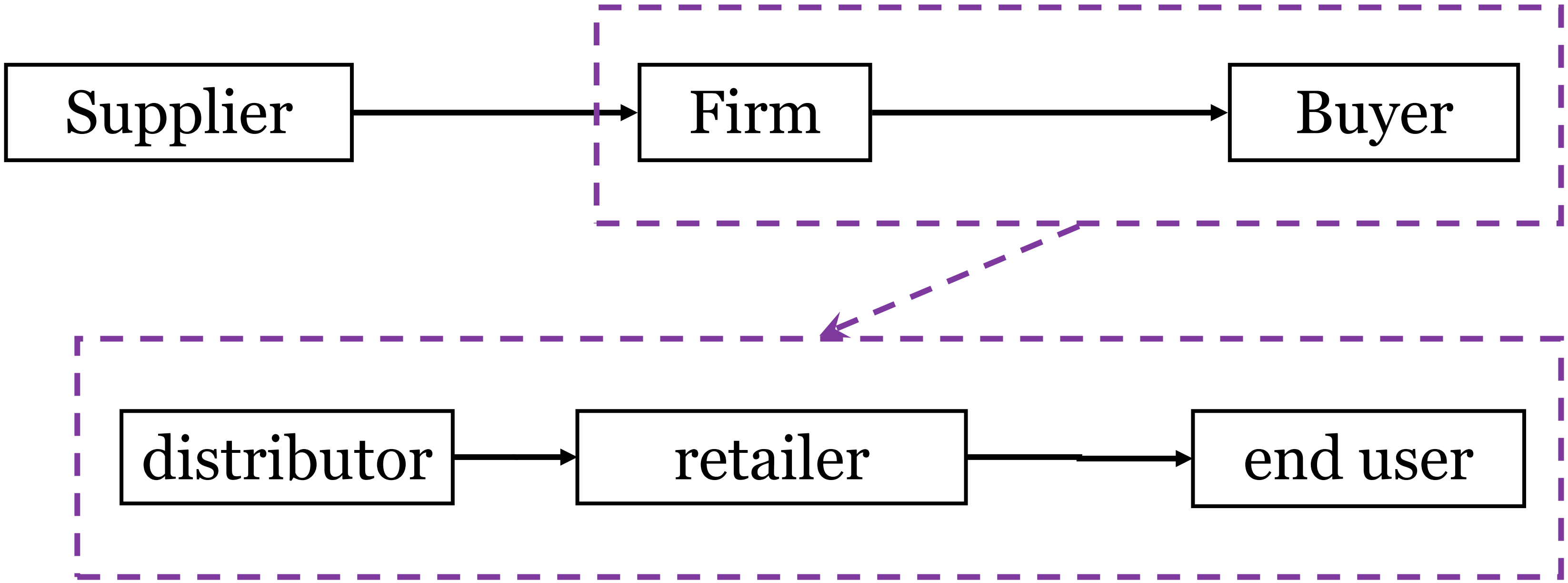
Upstream the SC



Upstream SC members = suppliers

- Independent suppliers
- Outsourcing partners
- Offshore subsidiaries

Downstream the SC



Downstream SC members = buyers

- direct sales
- intermediated sales (agent)
- distributorship

Key members of supply chain

- The lead firm
  - Most value-added
  - Most experienced
  - High bargaining power
  - High responsibility
  - Motivated to teach

- Other participants
  - Power dependent
  - Low value-added
  - Motivated to learn

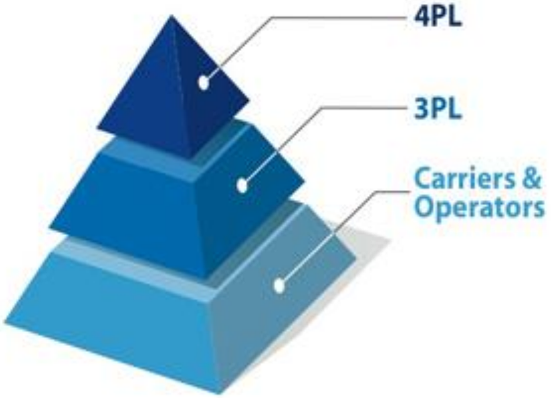
Channel Relationships

- single transaction
- conventional channel agreement
- administered system
- contractual system
- partnership/alliance
- (equity acquisition)

Increased dependency
Decreased uncertainty
$\Big\}$ Overall effect on cost ?

SC Intermediaries – LSPs

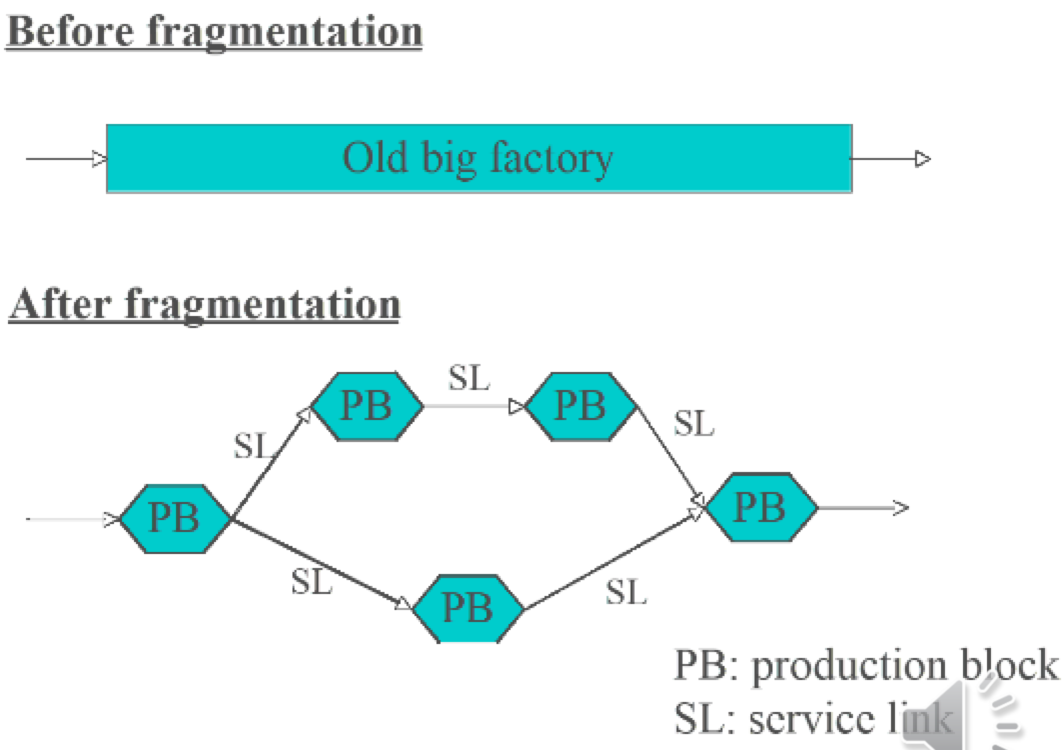
- Specialized single service providers
- Integrators (3PL providers, 4PL providers)
- 3PL
  - Geographic specialization
  - Functional specialization
- 4PL
  - 3PL-3PL outsourcing
  - A total outsource supply chain solution



Physical Distribution

Patterns of physical distribution of materials and goods in a supply chain is affected by:

- Fragmentation
- De-intermediation
- Re-intermediation



Key issues in SCM

- Materials Management

- Physical Distribution

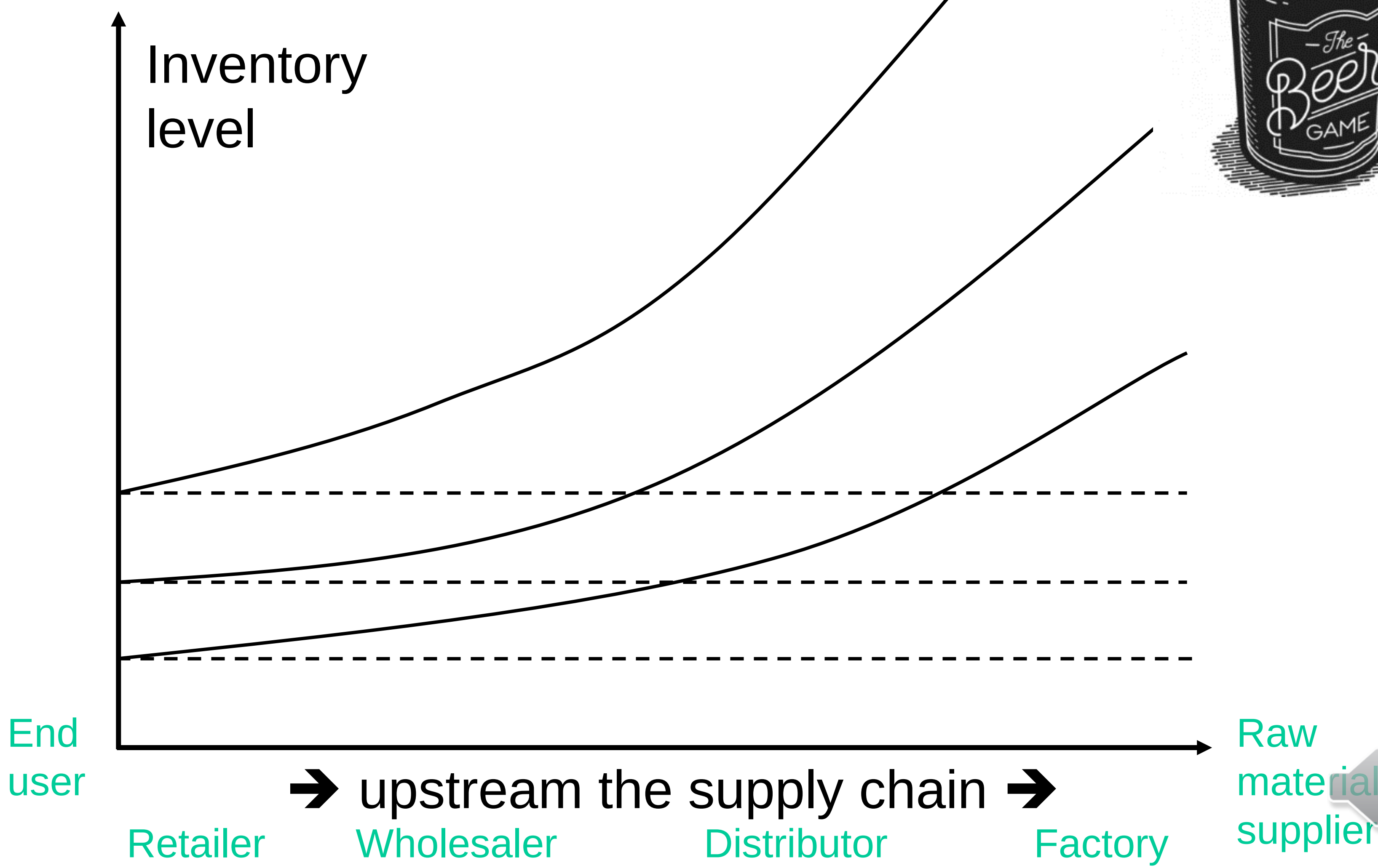
- Strategic Planning

Lean Strategy

- Pre-assumption: demand predictable
  - *Eliminating waste in a pull based value stream of activities with level production (i.e. even production runs with neither idle time nor surges in demand) and just-in-time inventory management*
- Push vs. Pull
- JIT – just in time
- TQM – total quality management

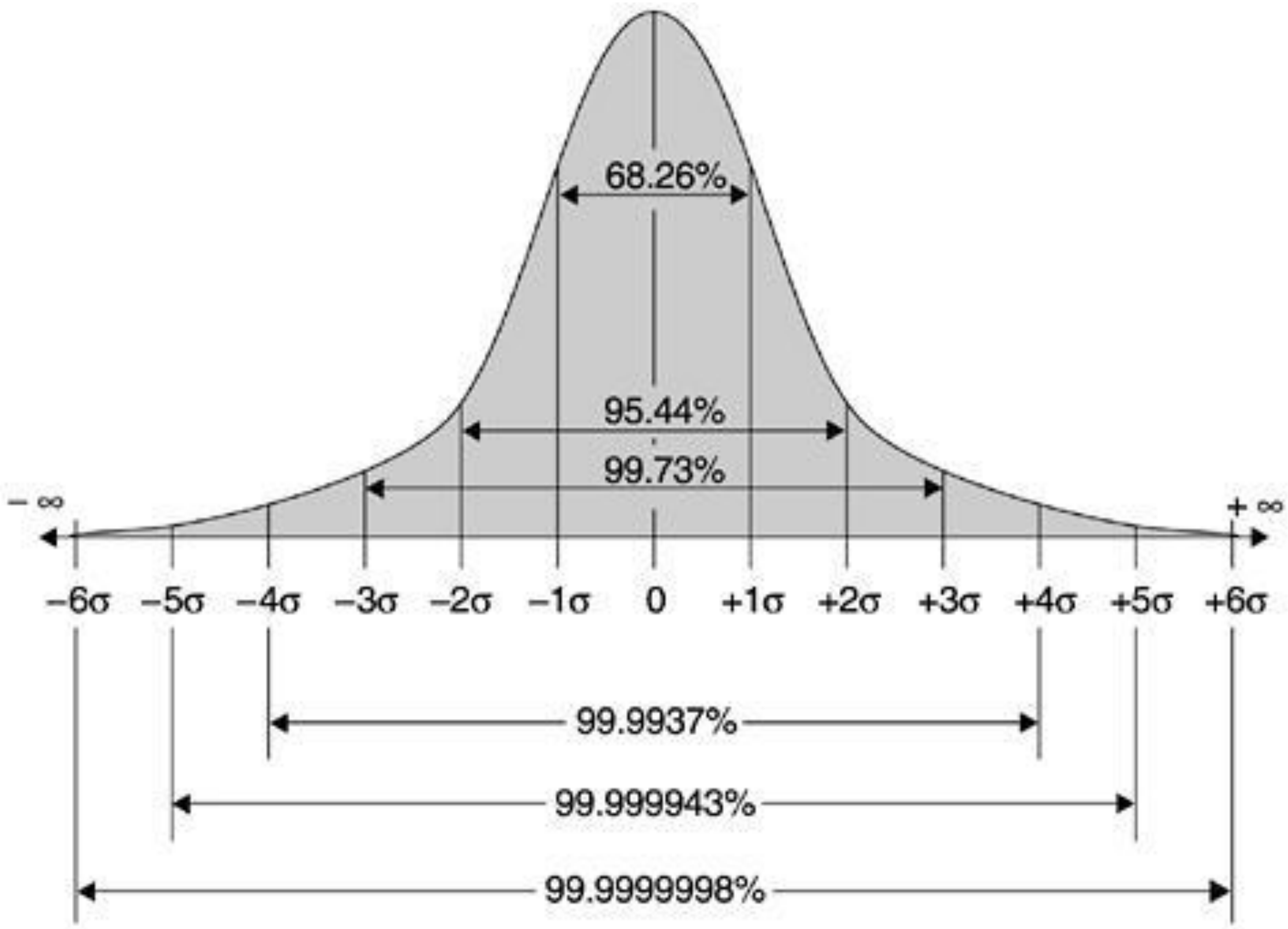
Lean Strategy

Bullwhip effect



Lean Strategy

TQM



- Six what?
- Why six?

Lean Strategy

Business

Mar 5th 2020 edition ›

Schumpeter

Covid-19 is foisting changes on business that could be beneficial

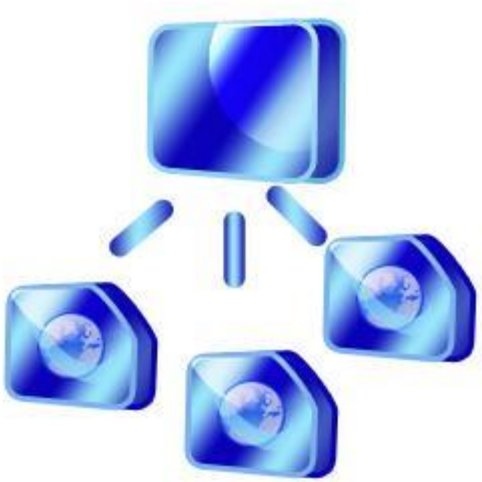
CEOs should be aware of the potential opportunities

A silver lining? Businesses are rethinking:

- Employee
- Supply Chain

Source of text and artwork:
https://www.economist.com/business/2020/03/05/covid-19-is-foisting-changes-on-business-that-could-be-beneficial

Agile Strategy: Volatile Demand



- Product variety
- Short product life cycle
- Globalisation of business
- Increasing outsourcing
- Advanced information technology
- Customer sophistication

- The agile supply chain
  - A demand-pull chain designed to cope with volatile demand – structured so as to allow maximum flexibility
- Development, sourcing, logistics and sales are designed to adapt quickly to changes in demand or customer preference

Lean vs. Agile

Distinguishing attributes	Lean supply	Agile supply
Typical products	Commodities	Fashion goods
Marketplace demand	Predictable	Volatile
Product variety	Low	High
Product life cycle	Long	Short
Customer drivers	Cost	Availability
Profit margin	Low	High
Dominant costs	Physical costs	Marketability costs
Stockout penalties	Long-term contractual	Immediate and volatile
Purchasing policy	Buy materials	Assign capacity
Information enrichment	Highly desirable	Obligatory
Forecasting mechanism	Algorithmic	Consultative

Martin Christopher, and Denis Towill. (2001). An integrated model for the design of agile supply chains. *International Journal of Physical Distribution & Logistics Management*, 31(4), 235-246.

Combined Strategy: Leagile

- **Marriage of lean and agile**

- **Customers require both responsiveness and cost efficiency**

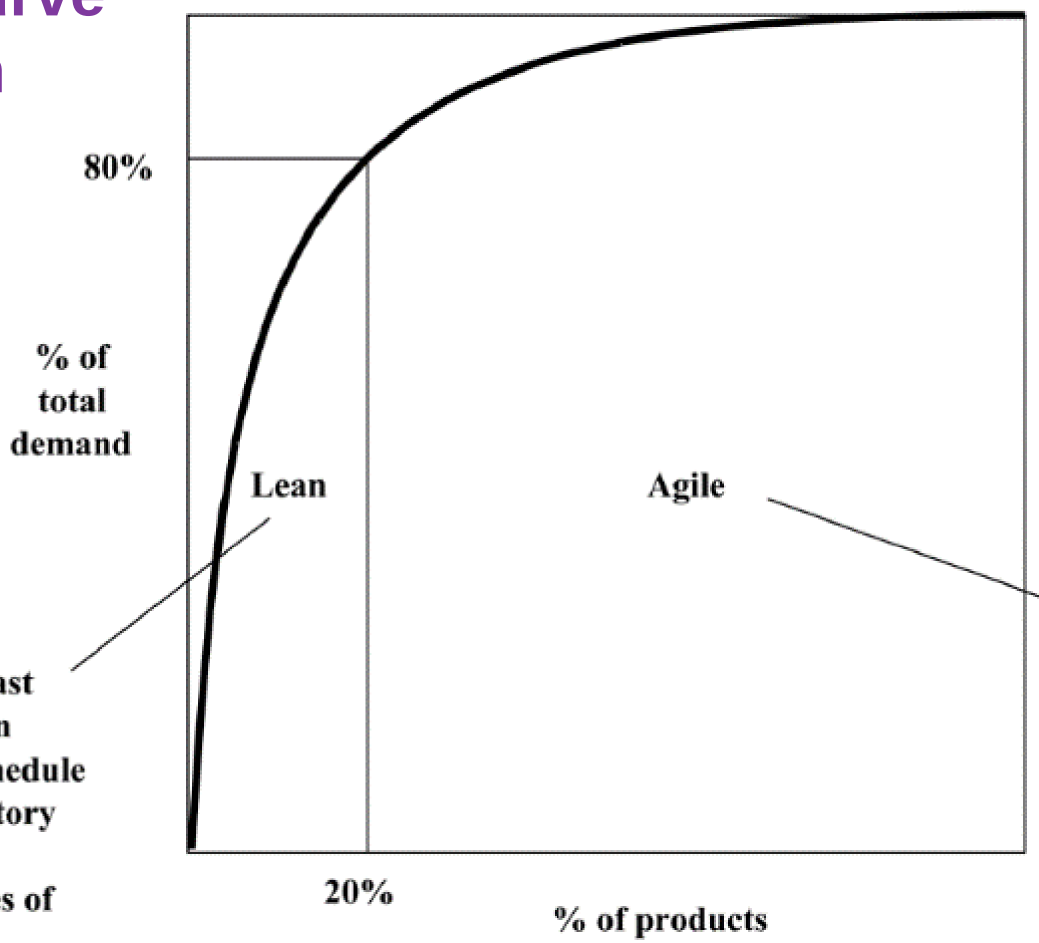
- **Three approaches:**

1. Pareto curve approach
2. Separation of base and surge demand
3. De-coupling point approach

Martin Christopher, Denis Towill. (2001). An integrated model for the design of agile supply chains. International Journal of Physical Distribution & Logistics Management, 31(4), 235-246.

Combined Strategy

Pareto curve approach

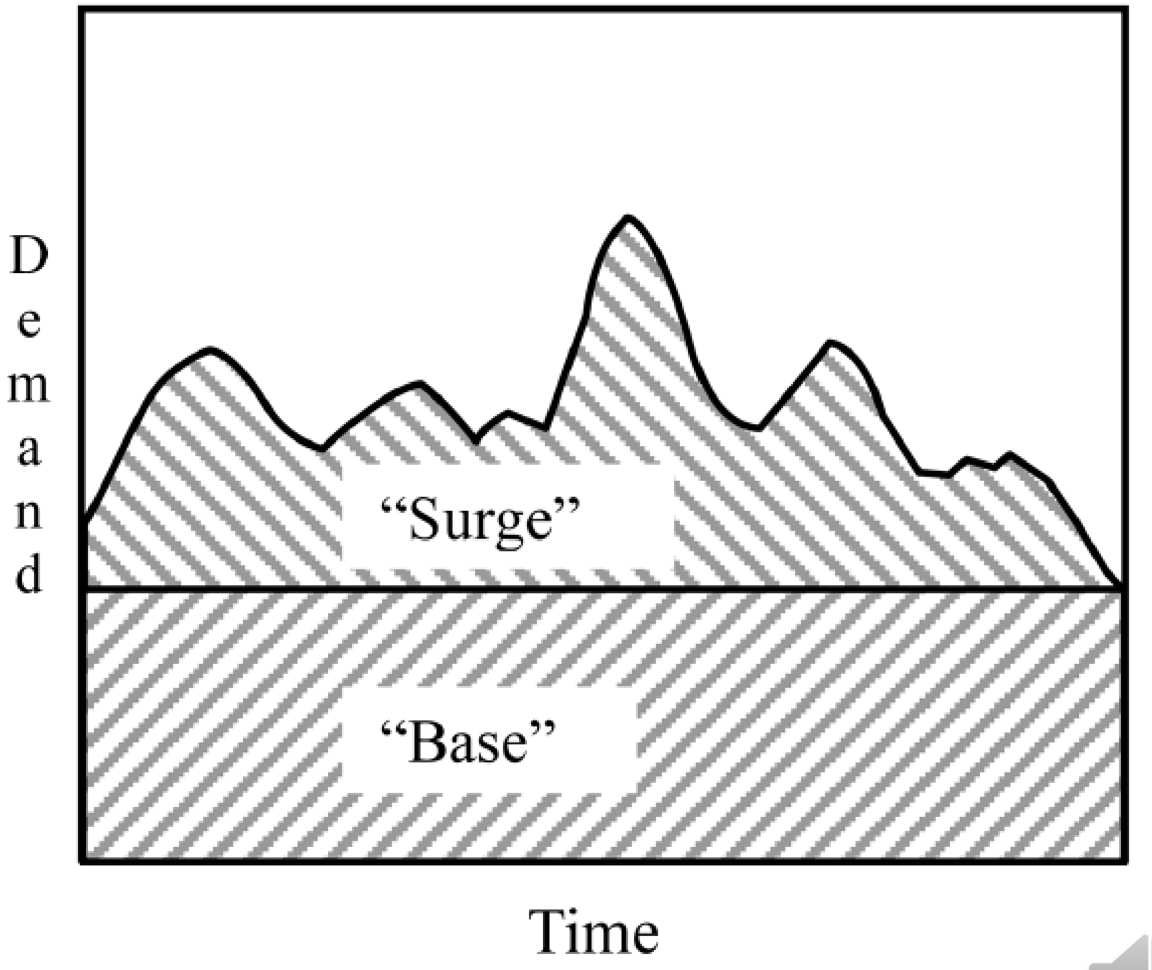


- Make to forecast
- Low priority in production schedule
- Manage inventory centrally
- Seek economies of scale

- Make to order
- High priority in production schedule
- Utilise quick response and continuous replenishment concepts
- Forecast for capacity, execute to demand

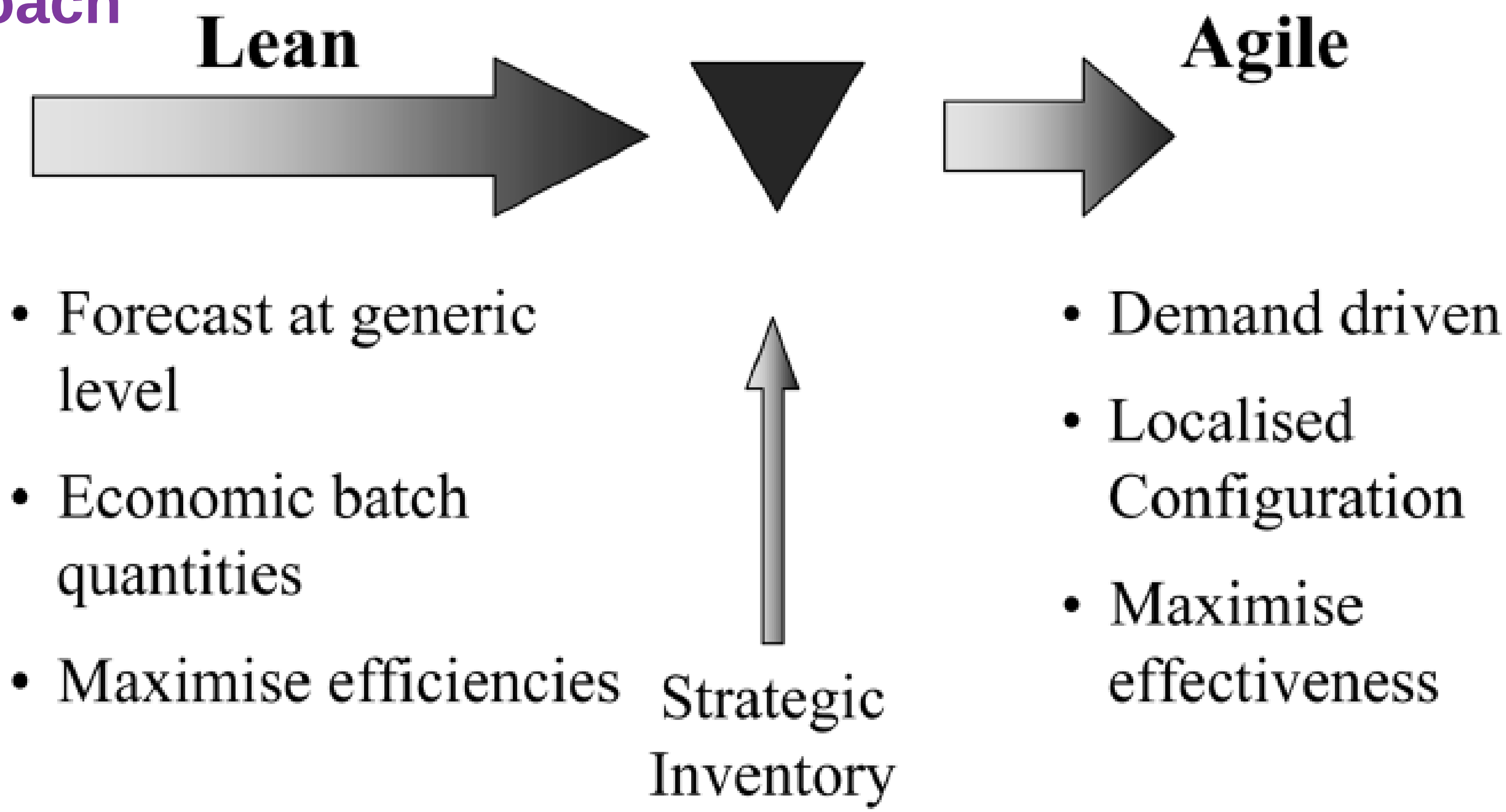
Combined strategies

Separation of base and surge demands



Combined strategies

De-coupling point approach



Recap

- Why?
- Who?
- What?
- How?