

Introduction to Supply Chain Management

Learning objectives

- Discuss the evolution of supply chain management
- Define supply chain management
- Comprehend the similarity and difference between logistics and supply chain management
- Delineate the role of a supply chain manager
- Understand the concept of value chain and its correlation to supply chain
- Describe the macro processes of supply chain
- Explain the nodes and processes of supply chain
- Comprehend how the interface of technology, process, and people has revolutionized supply chain management
- Understand the hierarchy and span of supply chain decisions
- Discuss the importance of professional excellence in supply chain management

Evolution of SCM domain

- 323 BC, the great Macedonian General Alexander conquered countries including Greece and Persia because he had included logistics in his strategic planning
- In the early 1900s, Ford can be said to have ushered in the mass production era
- Starting in the early 1970s, Japanese manufacturers such as Toyota changed the rules of production from mass to lean
- In the 1990s Dell revolutionized global business, being one of the earliest companies to adopt mass customization.
- **Supply chain has evolved dramatically over the last four decades**

Supply chain management definitions

- ‘Supply Chain Management (SCM) is the integration of key business processes from the end user through original suppliers that provides products, services, and information that add value for customers and other stakeholders.’ (Lambert and Cooper 2000)
- ‘SCM is the term used to describe the management of the flow of materials, information, and funds across the entire supply chain, from suppliers to component producers to final assemblers to distribution (warehouses and retailers), and ultimately to the consumer.’

Objective of SCM

- The objective of SCM is to manage a '*... network of organizations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services in the hands of the ultimate customer*' (Christopher 1998).

Complexity of Amul supply chain

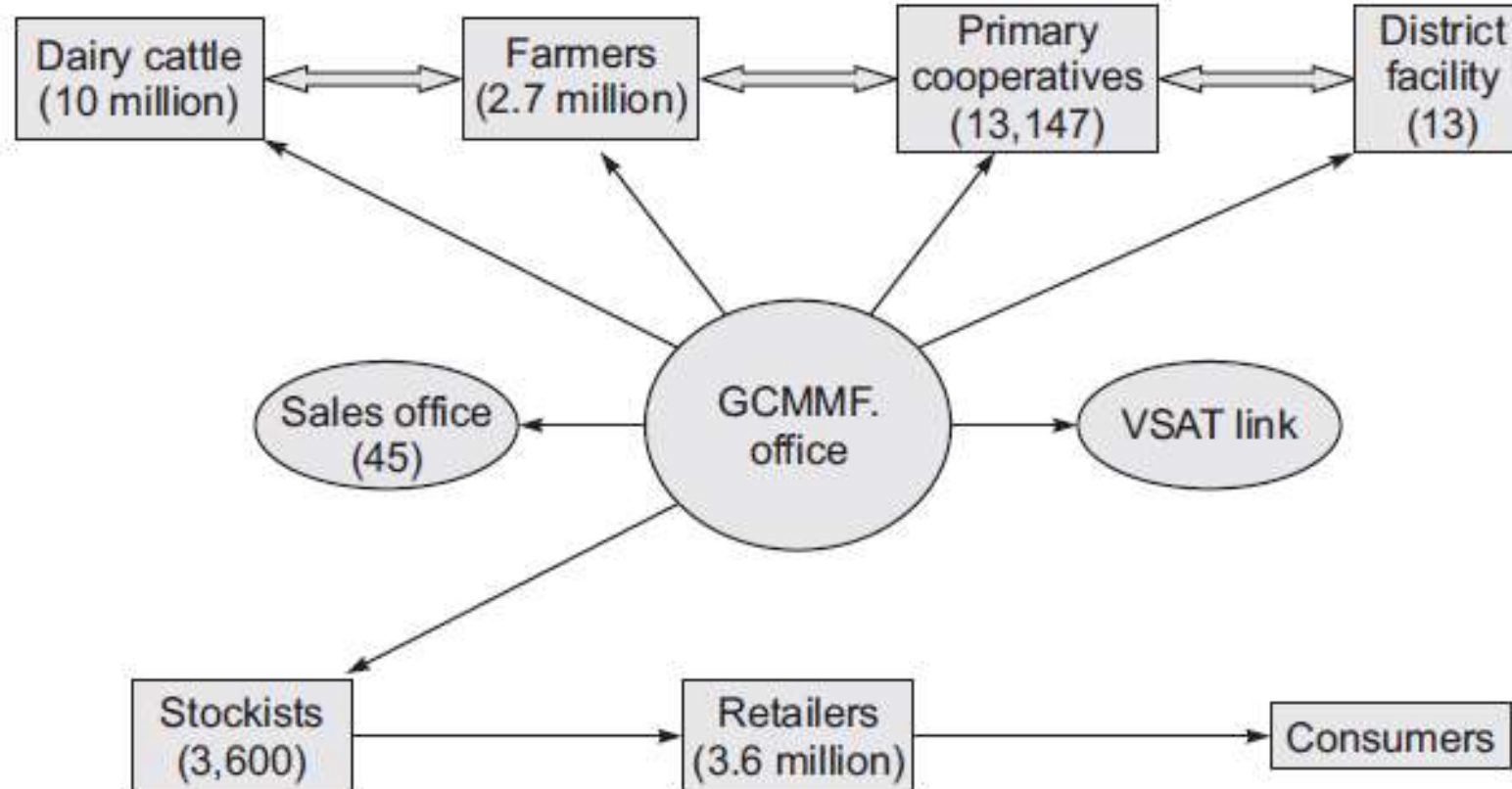


Figure 1.1 The Amul supply chain (all figures are estimates)

Logistics definitions

- In 1991, the international Council of Logistics Management (CLM) defined logistics as:
 - ‘The process of planning, implementing, and controlling the efficient, effective flow and storage of goods, services, and related information from the point of origin to the point of consumption for the purpose of conforming to customer requirements.’ – **Applied when competition is restricted or focused, in cases such as military operations, such definitions clearly depict the function.**
- Later was modified as:
 - ‘Logistics is the process of strategically managing the procurement, movement and storage of materials, parts and finished inventory and the related information flows through the organization and its marketing channels for the cost effective fulfilment of customers’ orders.’ - **more appropriate for commercial organizations and business.**

Logistics and SCM

- Logistics describes the entire process of material and products moving into, through, and out of a firm. The gamut of logistics management includes:
 - Order management
 - Outbound transportation and distribution management
 - Inventory management
 - In-plant logistics such as stores, movement towards line and shops
 - Inbound transportation
 - Procurement
 - Information management
- Logistics management is oriented towards cost minimization for the focal firm/group
- **Logistics refers only to internal supply chain management**

SCM is superset

- Primarily, **Logistics** is **inward-looking**. In the sugar business discussed above, the process is more logistics centred, with inward looking focus of **optimizing sugar production** from a satellite area of farming, managing farmers, time window, process plant, and so on
- On the other hand, **supply chain management** is more **outward-looking** and **inter-organizational** in approach. It involves **collaboration, partnering, and coordination** across entities serving the nodal organization. Relationship management depends heavily on logistics effectiveness and efficiency
- Supply chain is a super set of activities, which is more strategic in nature and performs the specific function of managing demand and supply.

Role of Supply chain manager

- Supply chain manager must be efficient in managing relationship within and across organization in the network
- Manager must be more outward-looking and inter-organizational in approach. This requires good negotiating skills representing both internal and partners interests.
- Ability to drive collaboration, partnering, and coordination across entities serving the nodal organization.
- Must have strategic, planning and execution orientation with ease of handling top management on various perspectives.

Value chain – Logistics & Supply chain

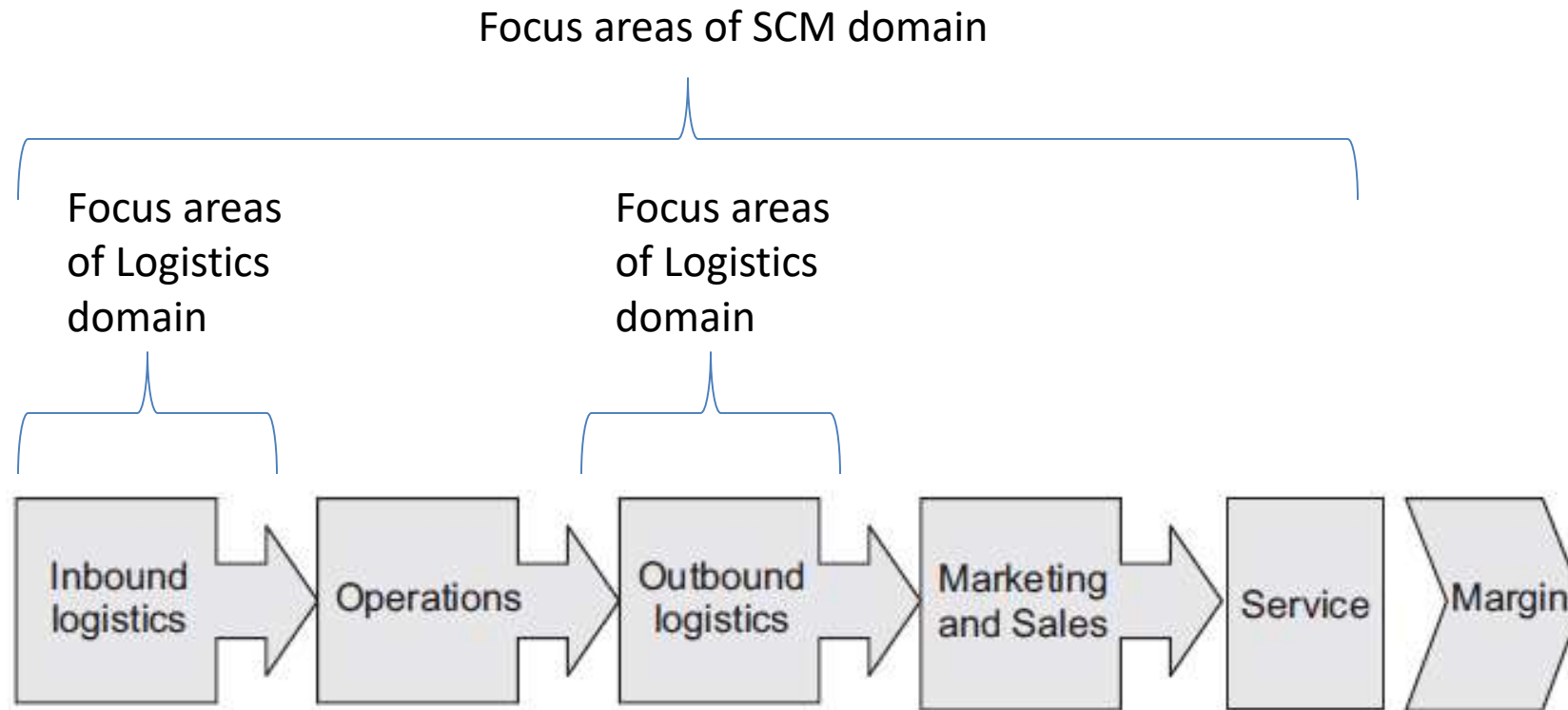


Figure 1.2 Value chain outline

Value chain insight: Value is more important than the cost as it is believed that a customer will be willing to pay a higher price for a value-added product

Value system– Logistics & Supply chain

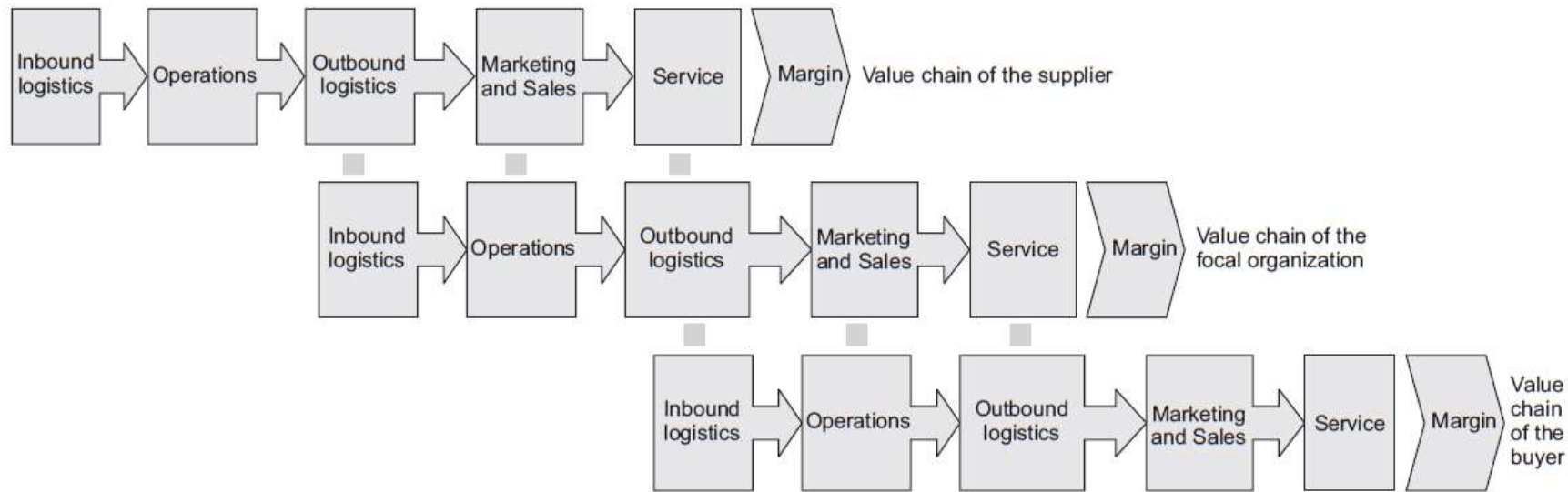


Figure 1.3 Value system

Value system insight: The essence of a value system is to strategically manage suppliers, channel partners, and customers, which are key to supply chain management

Supply chain macro processes

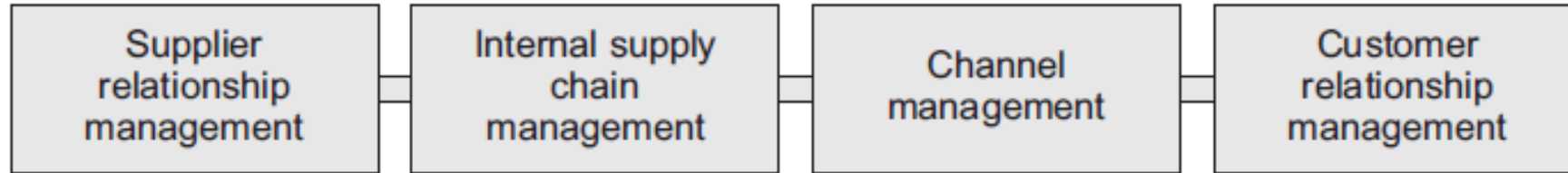


Figure 1.4 Supply chain macro processes

- Logistics functional orientation Vs SCMI process orientation
- Sunil Chopra's cycle view linked to supply chain macro processes
 - Customer order cycle (customer–retailer)
 - Replenishment cycle (retailer–distributor)
 - Manufacturing cycle (distributor–manufacturer)
 - Procurement cycle (manufacturer–supplier)

The concept of “Pull”

- The concept of ‘pull’ in supply chain is about the execution of processes in response to a customer order.
- This concept is reactive but brings value creation to customers by allowing flexible configuration of products.
- The advantage to the focal organization in this process is that it reduces finished goods inventory by postponement.
- Ex. Dial-a-Pizza

The concept of “Push”

- The idea of ‘push’ in supply chain means the execution of processes is initiated in anticipation of customer orders.
- This mainly depicts the speculative character of a supply chain where production and stocking happens on the basis of demand forecasts.
- This process would be more driven by economies of scale in operations and for low-value items.
- Ex. Popular models of two wheelers in India

Three interfaces

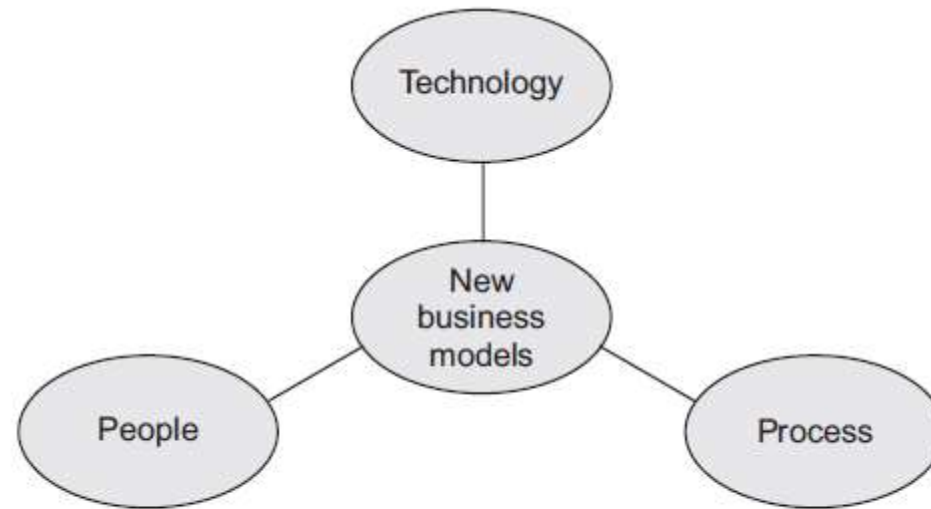


Figure 1.5 Relationship among technology, process, and people

Supply chain decision hierarchy

- Operational level
- Planning level
- Strategic level

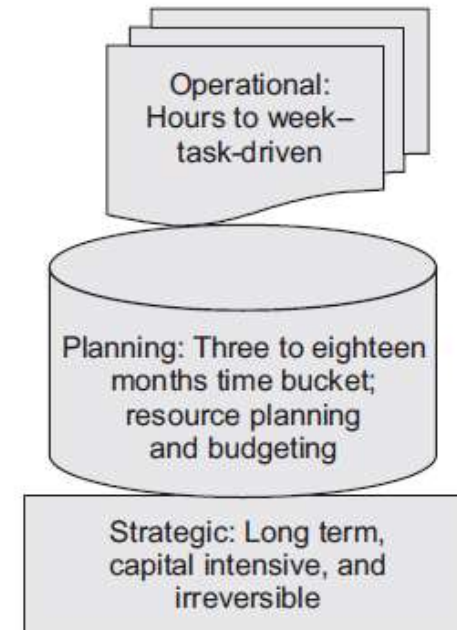


Figure 1.6 Hierarchy of supply chain decisions

Span of decisions in SCM

- First, strategic decisions involving the supply chain domain and linkages of supply chain strategy with other functional strategies—Strategic Business Unit (SBU) level strategy and corporate strategy—must be clearly understood.
- Second, responsiveness and the efficiency spectrum calls for a trade-off between cost management and service factors.
- Third, the span of decision would involve planning functionality like aggregate plans, coordination of production plans, inventory plan, and so on. All these would require functional capability to handle and coordinate.
- Fourth, another area of supply chain decision would be in relation to operational issues, which may involve coordinating inbound and outbound transportation, inplant logistics, day to day handling with suppliers for daily production schedule, and so on.
- Fifth, supply chain managers must coordinate with technology support managers,
- process owners, and people managers for an interface of the three functions for supply chain improvements.

Professional Excellence

- Supply chain function in a company must strive for excellence in business
- Benchmarking across industry, peer group and best in class are the order of the day.
- Focus on ultimate customer with synchronized approach within and across partners in the organization and continuously strive to improve performance

Support institutions

- Academia
- Consulting firms
- CII Institute of Logistics
- Indian Institute of Materials Management
- Companies in logistics and supply chain services are striving hard to promote maturity of this domain.