

Procurement and Supply Chain Management

Prepared by Dr. Tarek Mohamed

MGM 431

Lecture 5





Life cycle, processes and supply-chain integration

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Course Agenda

Chapter

- 
1. Define the meaning of integrated supply chain management.
 2. Identify the main characteristics of integrated supply chain management.
 3. Understanding the SCOR model processes.
 4. Identify both external and internal supply chain linkages.
 5. Explain how to use Levers for improved supply chain performance.

Supply Chain Management

- All facilities, functions, activities, associated with flow and transformation of goods and services from raw materials to customer, as well as the associated information flows.
- An integrated group of processes to “source,” “make,” and “deliver” products.
- Supply chain management tries to match the flow of materials, services and information with demand.
- The purpose of supply chain design is to shape a firm's supply chain to meet the competitive priorities of its operations strategies.

❑ Suppliers

- **Procurement**

- Purchase of goods and services from suppliers
- On-demand (direct response) delivery
- Requires supplier to deliver goods when demanded by customer

- **Continuous replenishment**

- Supplying orders in a short period of time according to a predetermined schedule

- **Cross-enterprise teams coordinate processes between company and supplier**

□ Outsourcing

- **Sourcing**
 - Selection of suppliers
- **Outsourcing**
 - Purchasing of goods and services from an outside supplier
- **Core competencies**
 - What a company does best?
- **Single sourcing**
 - A company purchases goods and services from only a few (or one) suppliers

□ Distribution

- Encompasses all channels, processes, and functions, including warehousing and transportation, that a product passes on its way to final customer
- Often called logistics

□ Logistics

- Transportation and distribution of goods and services
- Driving force today is speed particularly important for Internet dot-coms

Managing flow of information through supply chain in order to attain the level of synchronization that will make it more responsive to customer needs while lowering costs

Keys to effective SCM

- Information
- Communication
- Cooperation
- Trust

DCs

Are some of the largest business facilities in the United States

Trend

Is for more frequent orders in smaller quantities

Flow-through facilities and automated material handling

Postponement

Final assembly and product configuration may be done at the DC

Highly automated system that runs day-to-day operations of a DC
Controls item put away, picking, packing, and shipping.

Features

- Transportation management
- Order management
- Yard management
- Labor management
- Warehouse optimization

- Collaborative planning, forecasting, and replenishment create greater economies of scale
- Internet-based exchange of data and information
- Significant decrease in inventory levels and more efficient logistics
- Companies focus on core competencies

- Manufacturers generate orders, not distributors or retailers
- Stocking information is accessed using EDI
- A first step towards supply chain collaboration
- Increased speed, reduced errors, and improved service

Supply Chain Integration

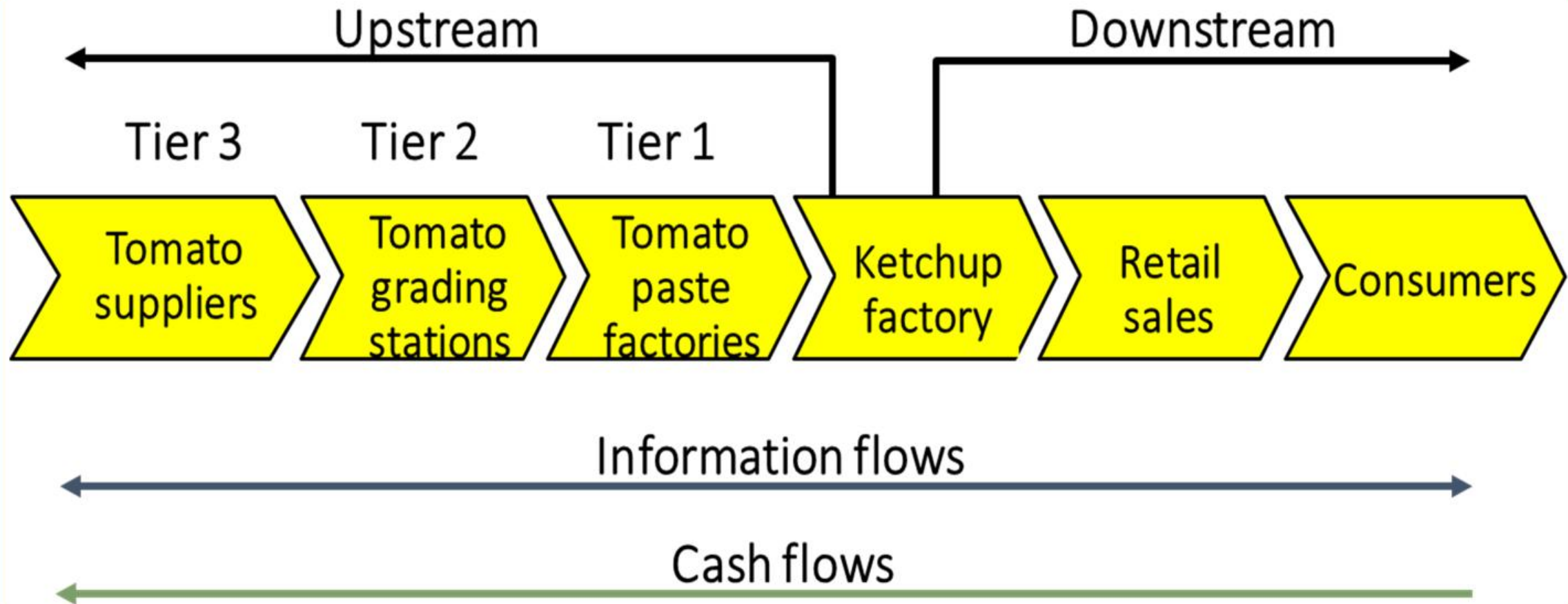
- The effective coordination of supply chain processes through the seamless flow of information up and down the supply chain.
- The purpose of supply chain management is to synchronize a firm's processes with those of its suppliers and customers.

- **Information sharing among supply chain members**
 - Reduced bullwhip effect
 - Early problem detection
 - Faster response
 - Builds trust and confidence
- **Collaborative planning, forecasting, replenishment, and design**
 - Reduced bullwhip effect
 - Lower Costs (material, logistics, operating, etc.)
 - Higher capacity utilization
 - Improved customer service levels

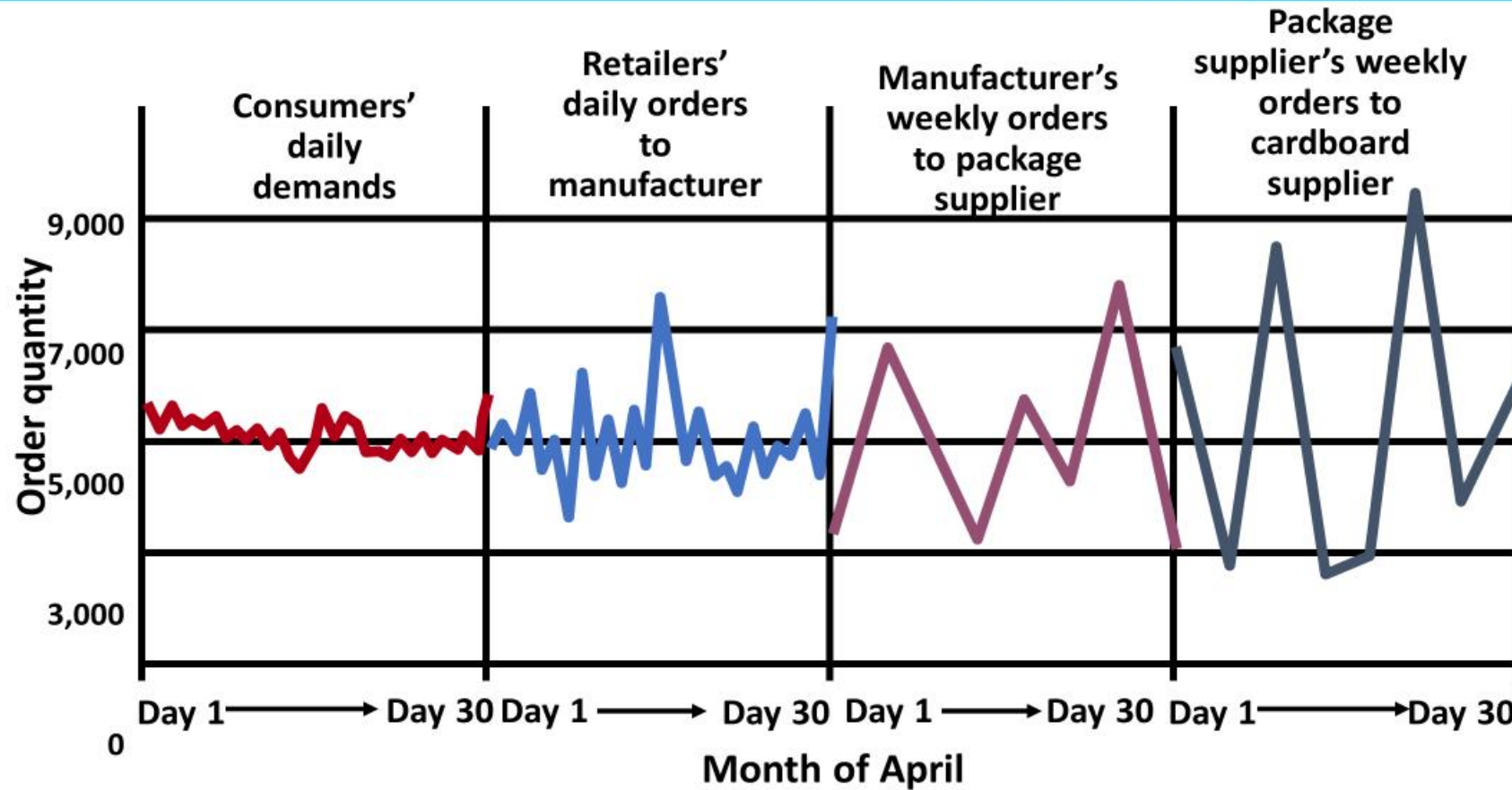
- **Coordinated workflow, production and operations, procurement**
 - Production efficiencies
 - Fast response
 - Improved service
 - Quicker to market
- **Adopt new business models and technologies**
 - Penetration of new markets
 - Creation of new products
 - Improved efficiency
 - Mass customization

- Process for two or more companies in a supply chain to synchronize their demand forecasts into a single plan to meet customer demand
- **Parties electronically exchange**
 - Past sales trends
 - Point-of-sale data
 - On-hand inventory
 - Scheduled promotions
 - Forecasts

Supply Chain Integration

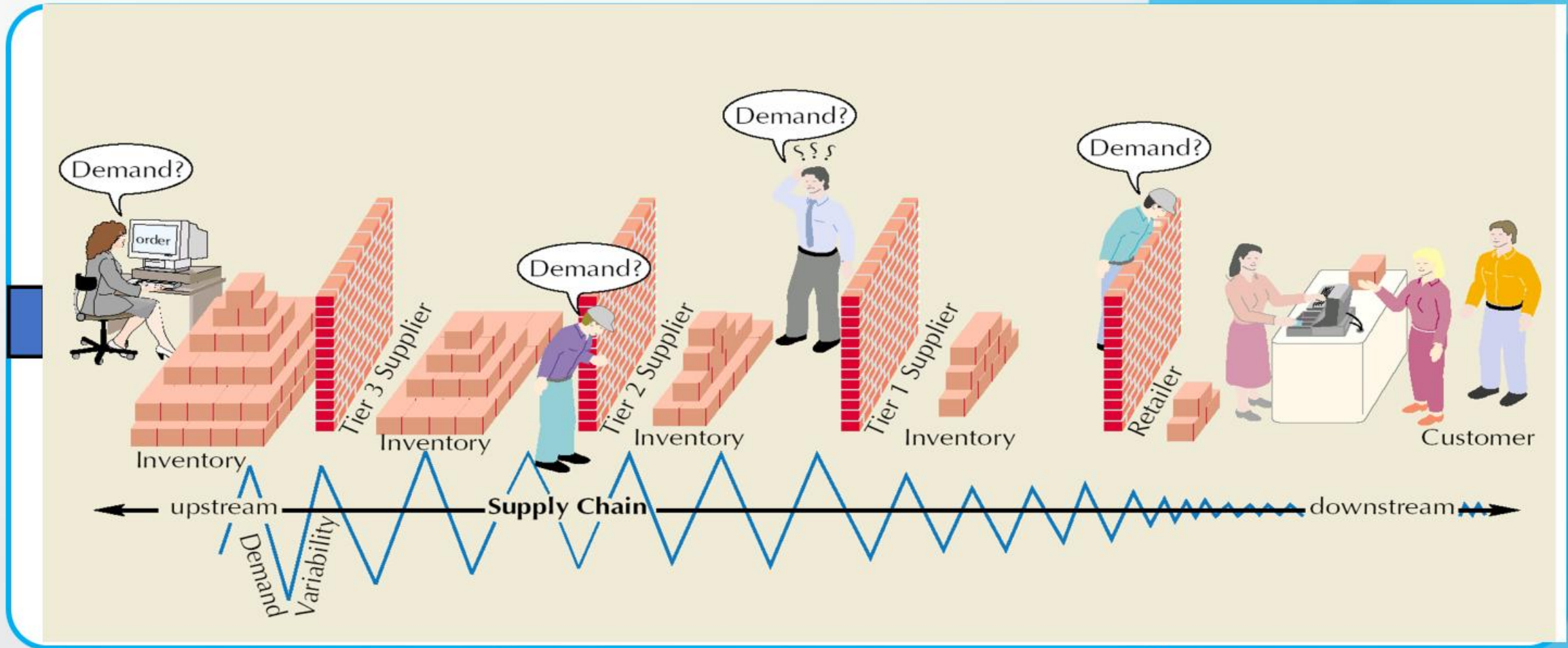


Supply Chain Dynamics



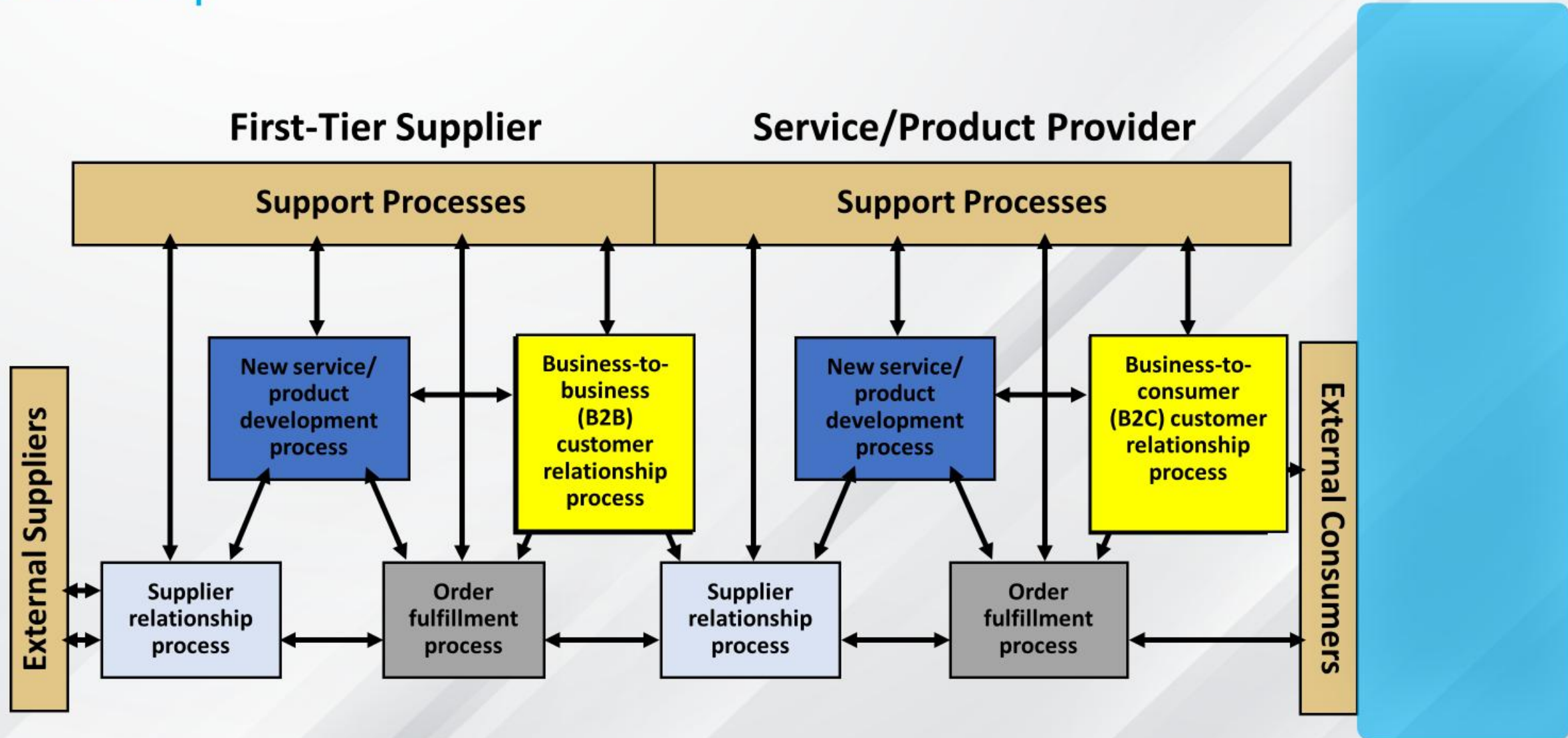
The Bullwhip Effect

Supply Chain Dynamics



The Bullwhip Effect

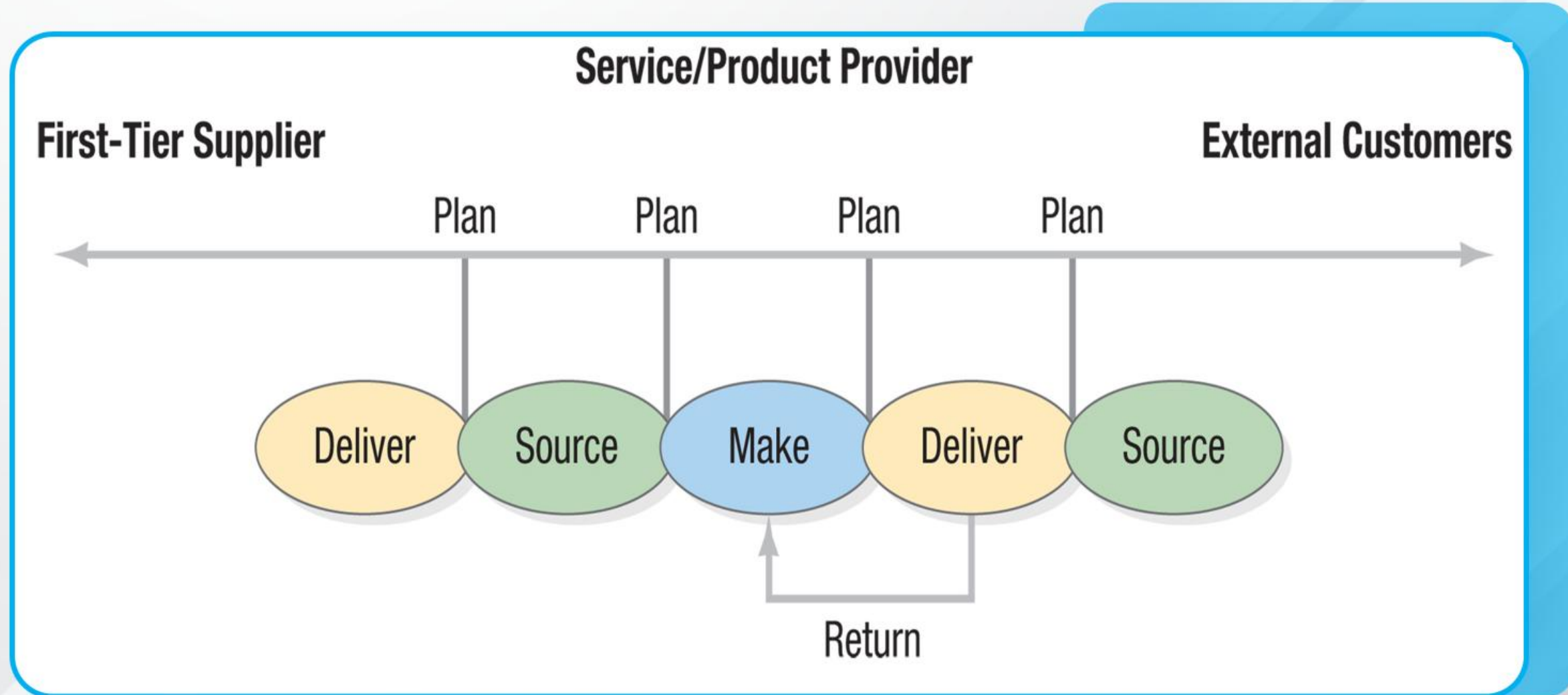
External Supply Chain Linkages



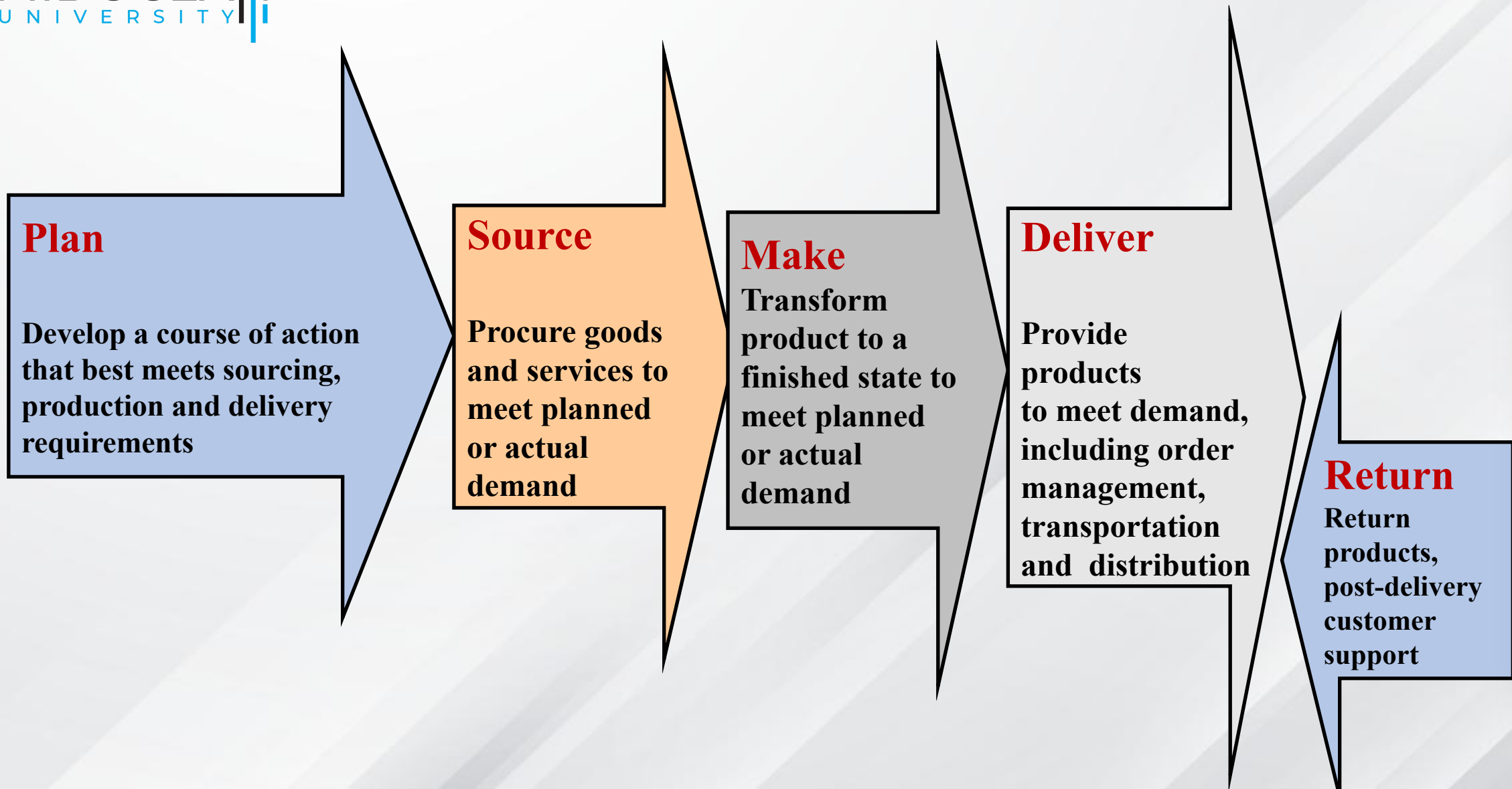
- **SCOR Model**

- **Plan**
- **Source**
- **Make**
- **Delivery**
- **Return**

SCOR Model



SCOR Model Processes



SCOR: Customer Facing

Performance Attribute	Performance Metric	Definition
Supply Chain Delivery Reliability	Delivery performance	Percentage of orders delivered on time and in full to the customer
	Fill rate	Percentage of orders shipped within 24 hours of order receipt
	Perfect order fulfillment	Percentage of orders delivered on time and in full, perfectly matched with order with no errors
Supply Chain Responsiveness	Order fulfillment lead time	Number of days from order receipt to customer delivery
Supply Chain Flexibility	Supply chain response time	Number of days for supply chain to respond to an unplanned significant change in demand without a cost penalty
	Production flexibility	Number of days to achieve an unplanned 20% change in orders without a cost penalty

SCOR: Internal Facing

Performance Attribute	Performance Metric	Definition
Supply Chain Cost	Supply chain management cost	Direct and indirect cost to plan, source and deliver products and services
	Cost of goods sold	Direct cost of material and labor to produce a product or service
	Value-added productivity	Direct material cost subtracted from revenue and divided by the number of employees, similar to sales per employee
	Warranty/returns processing cost	Direct and indirect costs associated with returns including defective, planned maintenance and excess inventory
Supply Chain Asset Management Efficiency	Cash-to-cash cycle time	Number of days that cash is tied up as working capital
	Inventory days of supply	Number of days that cash is tied up as inventory
	Asset turns	Revenue divided by total assets including working capital and fixed assets

Performance Measures

Customer Relationship	Order Fulfillment	Supplier Relationship
▪ Percent of orders taken accurately ▪ Time to complete the order placement process ▪ Customer satisfaction with the order placement process ▪ Customer's evaluation of firm's environmental stewardship	▪ Percent of incomplete orders shipped ▪ Percent of orders shipped on-time ▪ Time to fulfill the order ▪ Percent of botched services or returned items ▪ Cost to produce the service or item ▪ Customer satisfaction with the order fulfillment process ▪ Inventory levels of work-in-process and finished goods ▪ Amount of greenhouse gasses emitted into the air	▪ Percent of suppliers' deliveries on-time ▪ Suppliers' lead times ▪ Percent defects in services and purchased materials ▪ Cost of services and purchased materials ▪ Inventory levels of supplies and purchased components ▪ Evaluation of suppliers' collaboration on streamlining and waste conversion ▪ Amount of transfer of environmental technologies to suppliers

- **The levers**
 - **Sharing data**
 - **Collaborative activities**
 - **Reduce replenishment lead times**
 - **Reduce order lot sizes**
 - **Ration short supplies**
 - **Use everyday low pricing (EDLP)**
 - **Be cooperative and trustworthy**

- **Performance measures**
 - **Costs**
 - **Time**
 - **Quality**
 - **Environmental impact**

Supply Chain Integration

- The effective coordination of supply chain processes through the seamless flow of information up and down the supply chain
 - **A river that flows from raw material suppliers to consumers**
 - ◆ Upstream
 - ◆ Downstream
 - **Mitigating the effects of supply chain disruptions**

❑ Design collaboration

- Early supplier involvement
- Pre-sourcing
- Value analysis

❑ Negotiation

- Obtain an effective contract that meets the price, quality, and delivery requirements
- Competitive orientation
- Cooperative orientation

❑ Buying

- Procurement of the service or material from the supplier
- e-purchasing
- Loss of control

❑ Information exchange

- Radio frequency identification (RFID)
- Vendor managed inventories (VMI)

❑ Customer demand planning

- Facilitates collaboration
- Demand forecasts

❑ Supply planning

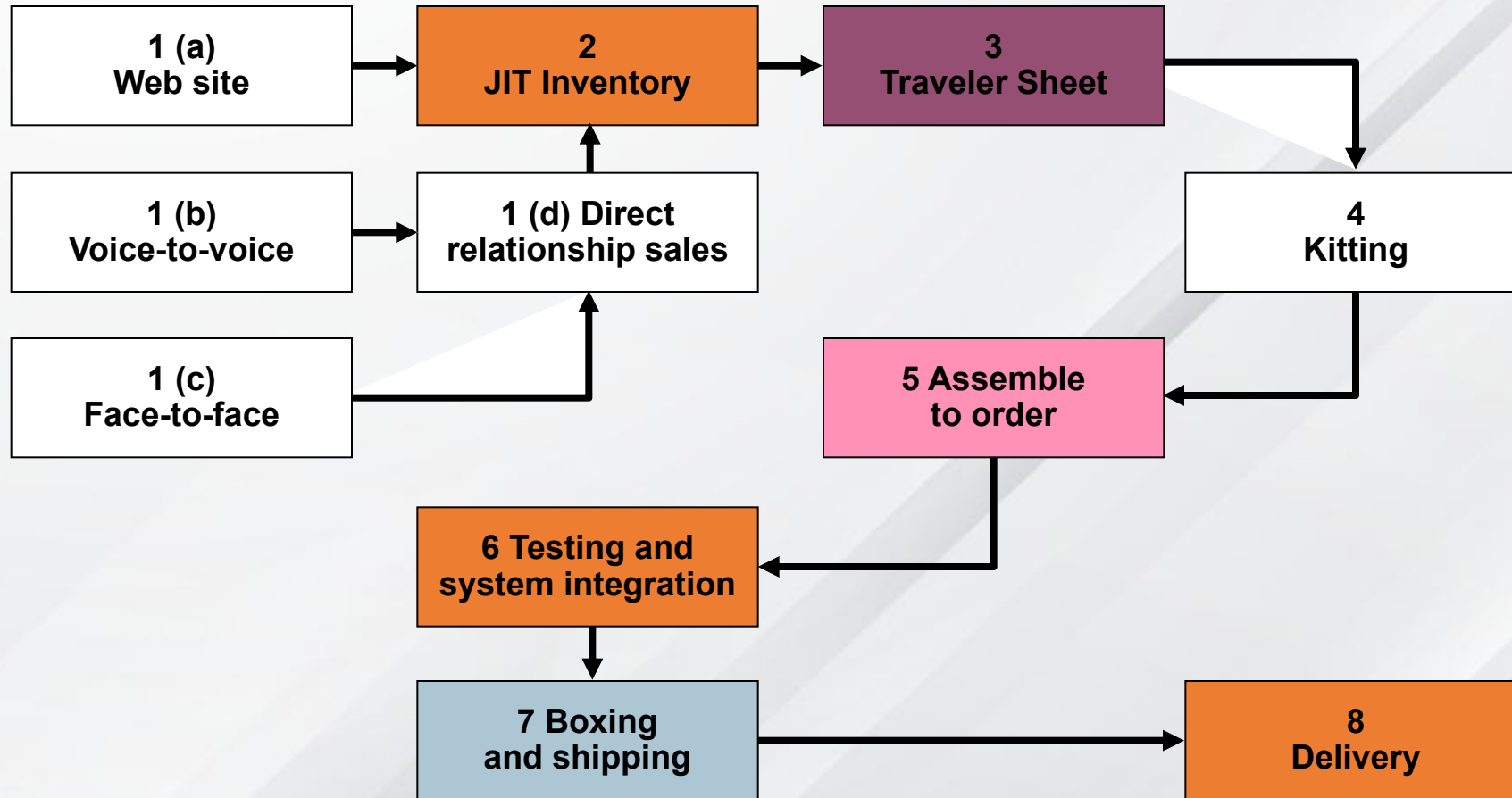
- ◆ Inventory management
- ◆ Operations planning and scheduling
- ◆ Resource planning

❑ Production

❑ Logistics

- ◆ Ownership
- ◆ Facility location
- ◆ Mode selection
- ◆ Capacity
- ◆ Cross-docking

Order Fulfillment Process



Dell's Order Fulfillment Process

The Customer Relationship Process

- Customer relationship management (CRM) programs identify, attract, and build relationships with customers
- **Marketing**
 - ◆ **Electronic commerce (e-commerce)**
 - ◆ **Business-to-Consumer (B2C) systems**
 - ◆ **Business-to-Business (B2B) systems**

❑ Order placement

- ◆ Execute a sale, register the specifics, confirm acceptance, and track progress
- ◆ Internet provides advantage

❑ Customer service

- Helps customers with answers to questions, resolves problems, and provides general information
- Call centers

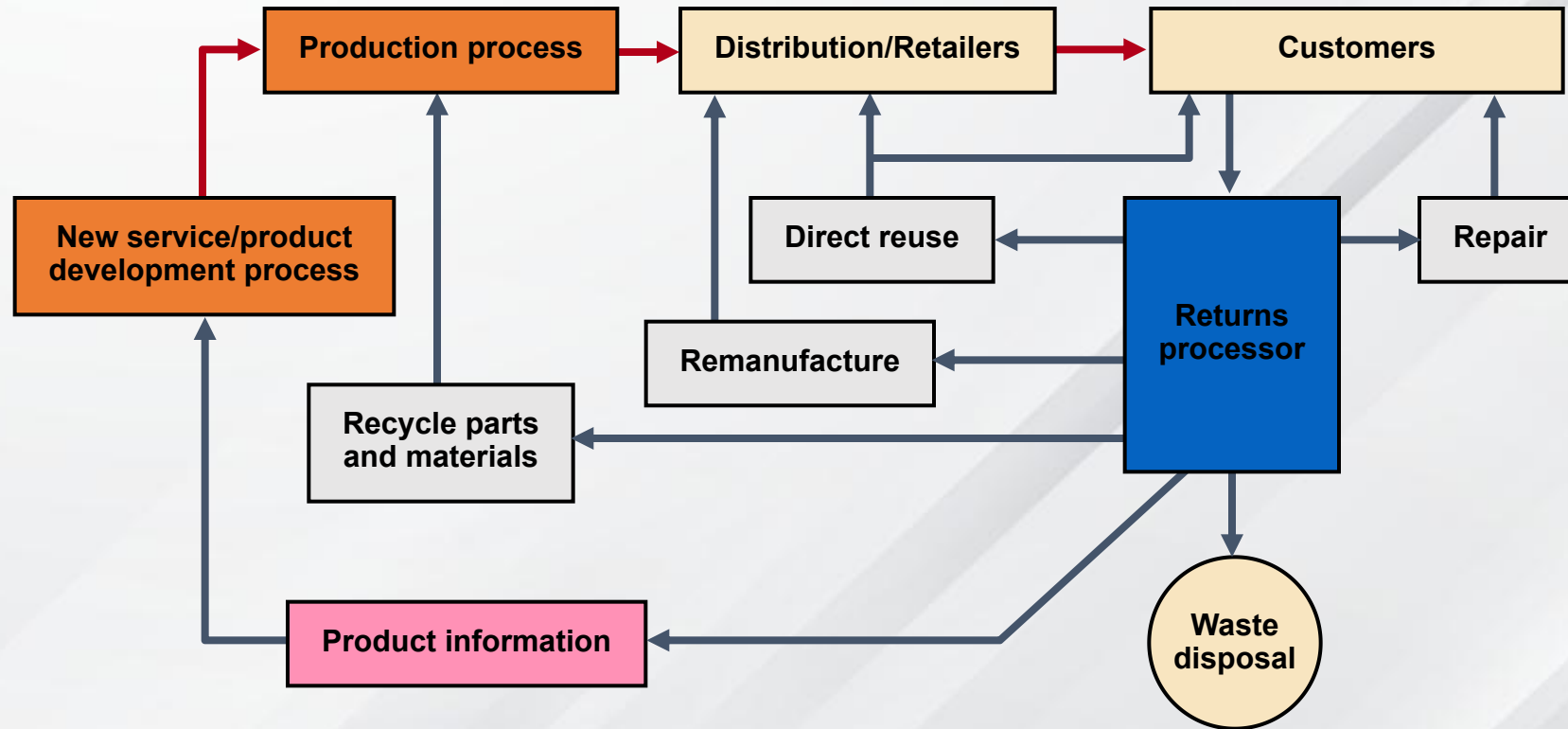
□ Sustainability

- Environmental stewardship
- Environmental protection
- Productivity improvement
- Risk minimization
- Innovation

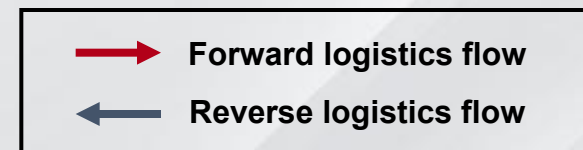
□ Reverse logistics

- ◆ Planning, implementing, and controlling flows from consumption back to origin
- ◆ Closed-loop supply chain

Closed Loop Supply Chain



Flows in a Closed-Loop Supply Chain



Summary of Learning Objectives

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- Supply Chain Council



Thank You