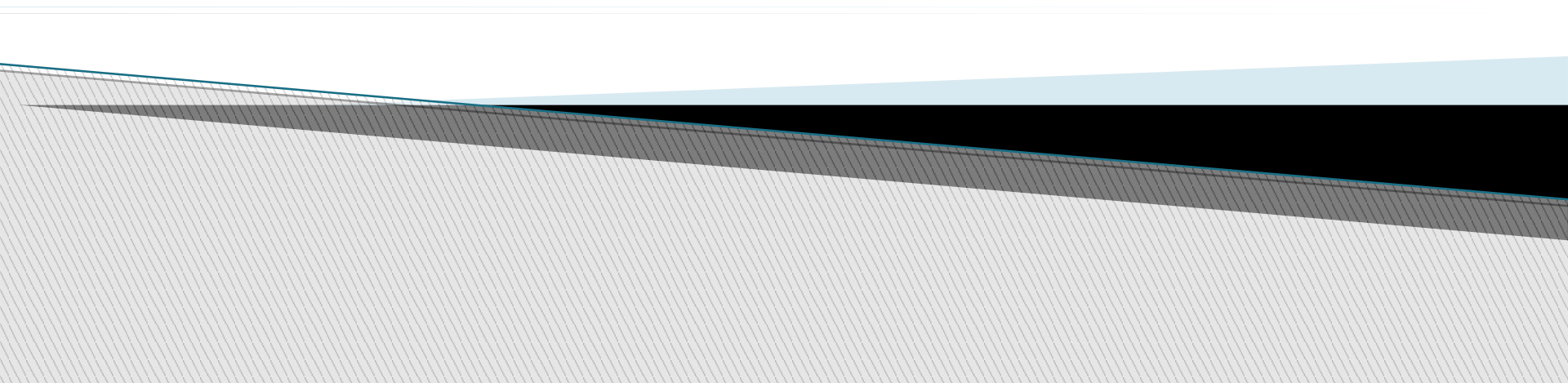


CHAPTER 1: INTRODUCTION TO SUPPLY CHAIN MANAGEMENT



Why are you taking this class?

- ▶ How many of you envision working for a for-profit company as some point in your career?

What is a Supply Chain?

A **supply chain** consists of the flow of products services, money, and **information** from:

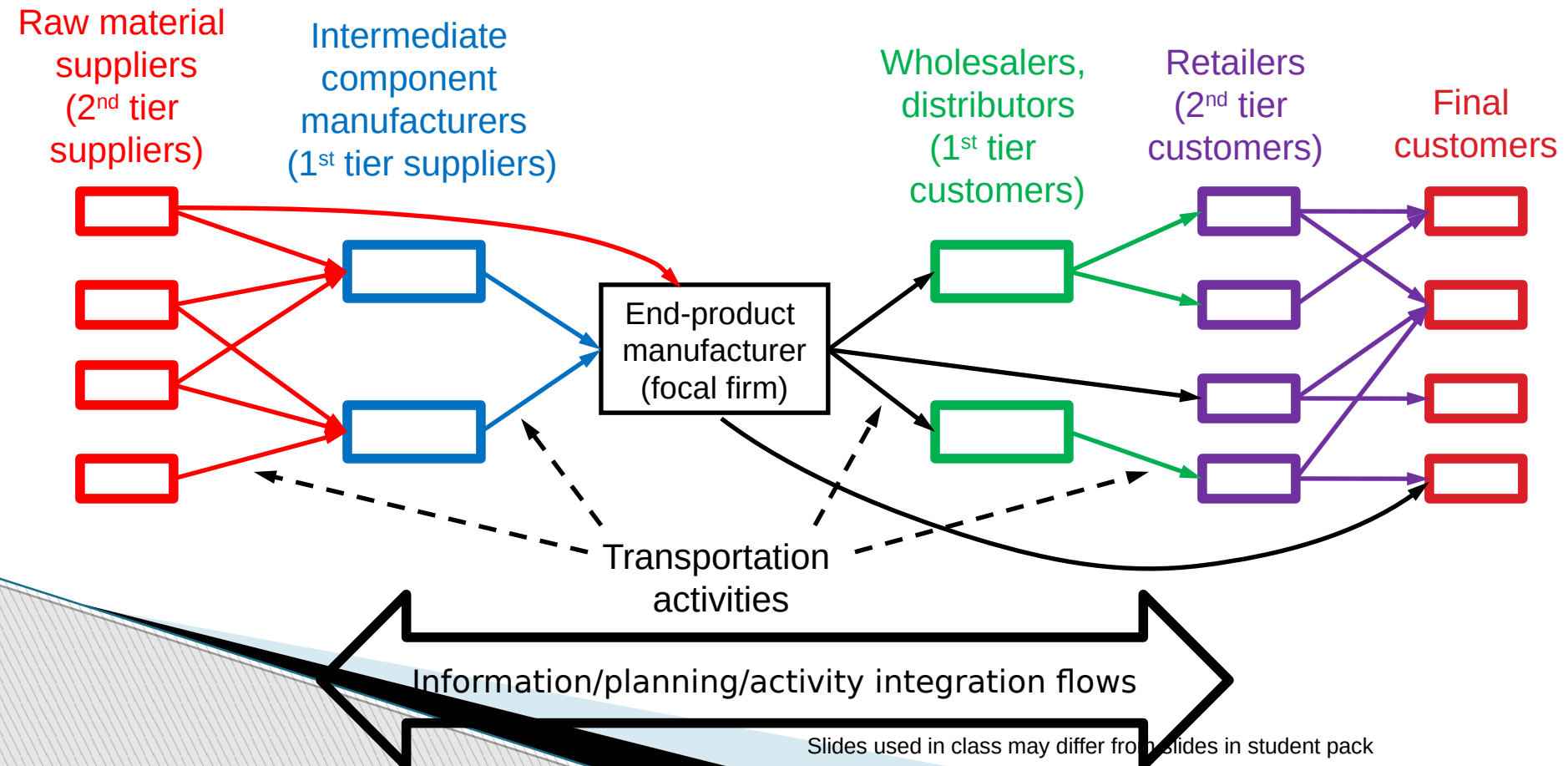
- Raw materials manufacturers
- Component and intermediate manufacturers
- Final product manufacturers
- Wholesalers and distributors and
- Retailers

Connected by transportation and **integrated** through **information, planning,** and other **coordination activities.**

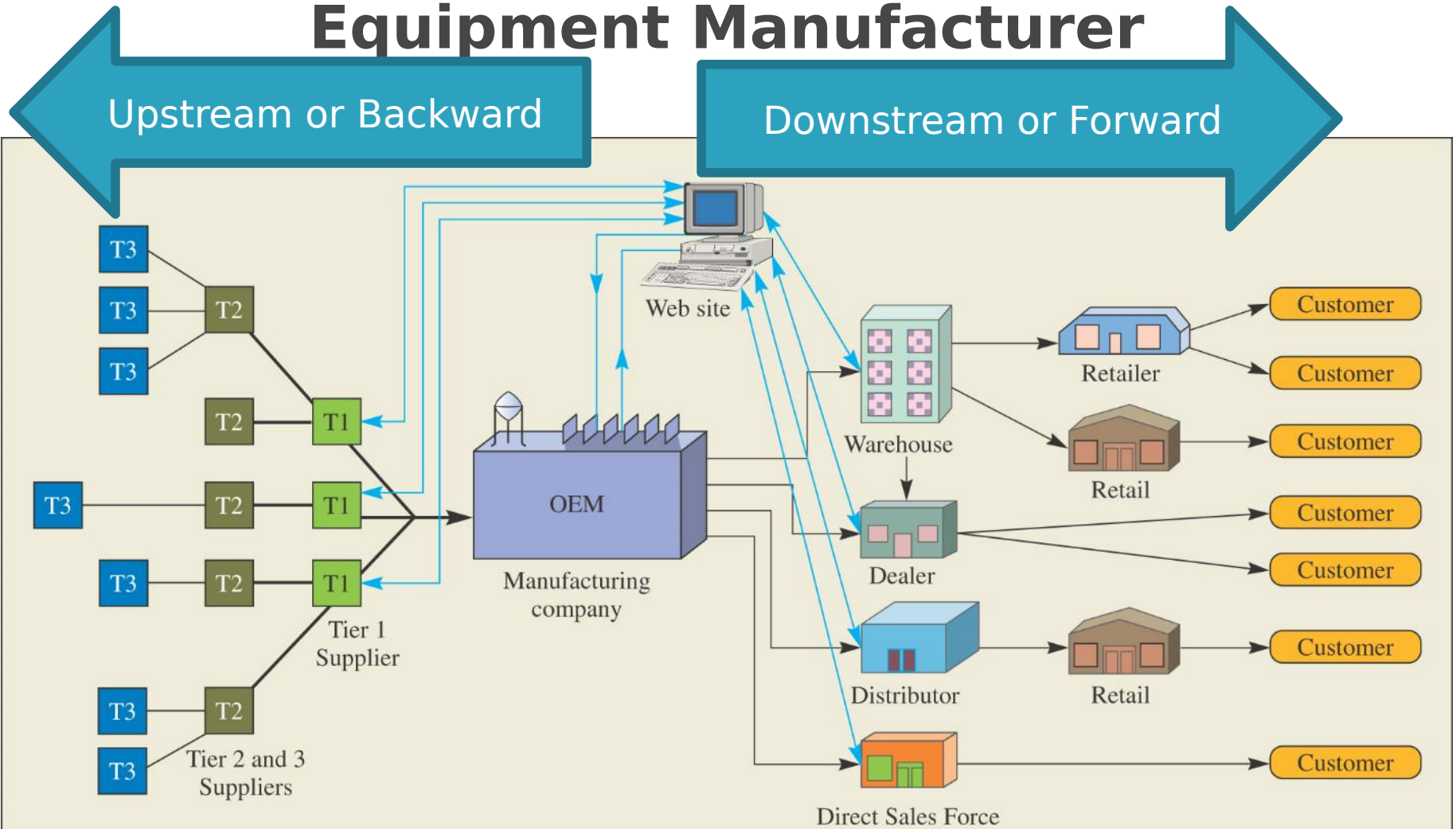
What is a Supply Chain? (Cont.)

Product, service, and credit flow

Orders, cash, recycling, and returns flow

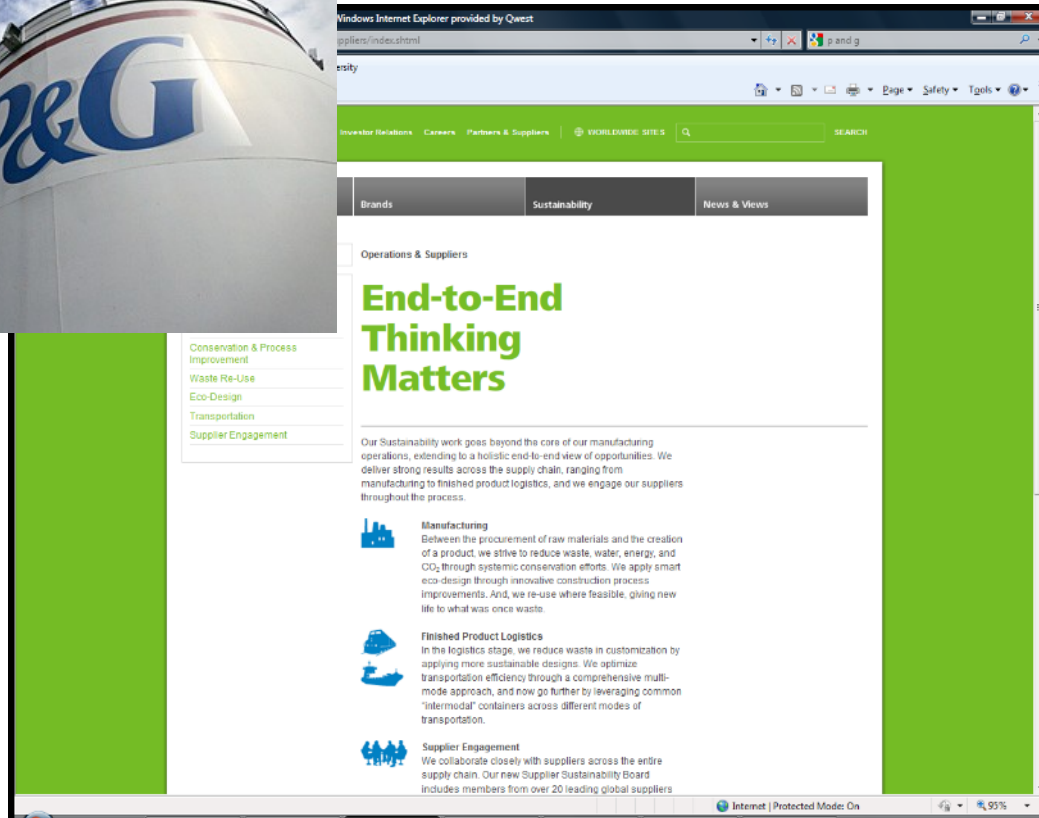


Supply Chain of a Typical Original Equipment Manufacturer



As this schematic suggests, a value chain is not a simple linear series of connections. It typically involves a complex series of business interactions and channel configurations. The Web is a key technology enabling efficient communication throughout the chain.

Do you know about SCM?



What is Supply Chain Management?

The design and management of seamless, **value-added processes across organizational boundaries** to meet the real needs of the end customer

Institute for Supply Management

Managing supply and demand, sourcing raw materials and parts, manufacturing and **assembly, warehousing** and inventory tracking, order entry and order management, **distribution** across all channels, and **delivery** to the customer

The Supply Chain Council

The **planning and management of all activities involved in sourcing and procurement, conversion, and all logistics** management activities ... also includes coordination with channel partners, which can be suppliers, intermediaries, third party service providers, and customers.

Council of Supply Chain Management Professionals

Example Product



Some numbers to think about....

At the P&G plant in Iowa City, IA:

VOLUME OF PRODUCTION

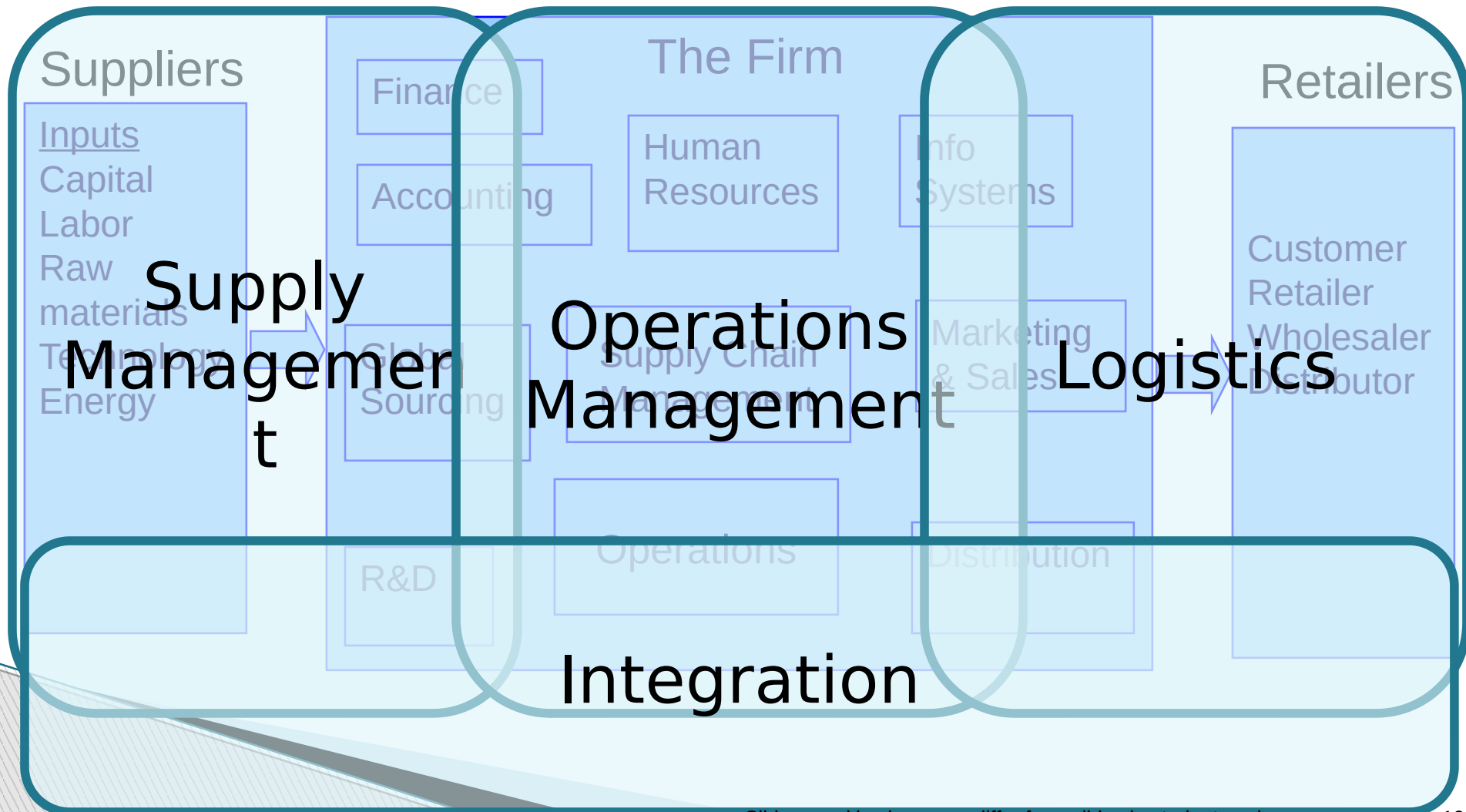
- 40 million cases per year (6 bottles per case)
- 1 million bottles per day
- In one recent two month period, the plant made so much shampoo that if they had placed the pallets side by side, they would have spanned from Iowa City to the Cedar Rapids airport (about 24 miles)

Number of suppliers

- There are four Pantene lines at the Iowa City P&G facility – these lines can run 20,000 bottles/hour
- For Pantene alone, there are 6 suppliers for labels, bottles and caps and there are over 50 suppliers for chemical ingredients.

Firm Relationships

Environment – Regulatory, Economic, Cultural, Competitive



The Foundations of Supply Chain Management

Purchasing/ Supply Management	Supplier management, supplier evaluation, supplier certification, strategic partnerships, green sourcing, vendor managed inventory (VMI)
Operations	Demand management, CPFR, MRP, ERP, inventory management, JIT/Lean production , quick response, TQM, Six Sigma
Logistics	Transportation management, customer relationship management (CRM), distribution networks, perfect order fulfillment, global supply chains, logistics management, service response logistics, green logistics
Integration	Process integration, performance measurement, risk management

The Foundations of Supply Chain Management (cont.)

► Supply Elements:

◦ Supplier management

- ▢ Supplier evaluation - determining supplier capabilities
- ▢ Supplier certification

◦ Strategic partnerships - successful and trusting relationships with top-performing suppliers

The Foundations of Supply Chain Management (cont.)

► Operations Elements

- **Demand management** - match demand to available capacity
- **MRP** and **ERP** systems to link buyers & suppliers
- **Lean systems** to improve the flow of materials to reduce inventory levels
- **Six Sigma** to improve quality compliance among suppliers



From

<http://www.lhthomson.com/our-operations/manufacturing/>

The Foundations of Supply Chain Management (cont.)

► Logistics Elements

- **Transportation management** - tradeoff decisions between cost & timing of delivery
 - ▢ customer service via trucks, rail, water & air
- **Warehouse management** - storage, accumulating, allocating, assorting, and sorting
- **Global Logistics** - managing varieties of each country



The Foundations of Supply Chain Management (cont.)

► Integration Elements:

- **Supply Chain Process Integration** –
 - ▢ Work for common goals.
 - ▢ Requires *intra*-firm functional integration, then *inter*-firm integration
- **Supply Chain Performance Measurement**
- High level supply chain performance will occur when strategies at each firm fit well with overall supply chain strategies

Importance of Supply Chain Management

Firms using Supply Chain Management:

1. Start with key suppliers
2. Move on to other suppliers, customers, and shippers
3. Integrate second tier suppliers and customers

Importance of Supply Chain Management (Cont.)

Cost savings and better coordination of resources

- Reduced Bullwhip Effect
- Collaborative planning, forecasting, and replenishment activities reduce the Bullwhip Effect

Origins of Supply Chain Management

1950s & 1960s

U.S. manufacturers focused on mass production techniques as their principal cost reduction and productivity improvement strategies

1960s-1970s

Introduction of new computer technology lead to development of **Materials Requirements Planning (MRP)** and **Manufacturing Resource Planning (MRP II)** to coordinate inventory management and improve internal communication

Origins of Supply Chain Management (Cont.)

1980s & 1990s*

Intense global competition led U.S. manufacturers to adopt:

- Supply Chain Management
- Just-In-Time (JIT)
- Total Quality Management (TQM)
- Business Process Reengineering (BPR) practices

*MTV was still showing music videos

Origins of Supply Chain Management (Cont.)

2000s and Beyond

- Industrial buyers will rely more on **third-party service providers (3PLs)** to improve purchasing and supply management
- Wholesalers/retailers will focus on transportation and logistics more & refer to these as **quick response, service response logistics**, and **integrated logistics**

Current Trends in Supply Chain Management

Expanding the Supply Chain

- Firms are expanding partnerships and building facilities in foreign markets
- The expansion involves:
 - ▢ **Breadth** - foreign manufacturing, office & retail sites, foreign suppliers & customers
 - ▢ **Depth** - second and third tier suppliers & customers

Current Trends in Supply Chain Management (Cont.)

Increasing Supply Chain Responsiveness

- Need to be more **flexible** and **responsive** to customer needs
- Need to **benchmark** industry performance and meet and improve on a continuous basis
- Responsiveness improvement will come from more effective and faster product & service **delivery** system



From <https://www.nimblechapps.com/drones/amazon-delivery-drone-gets-the-much-awaited-approval-of-faa>

Slides used in class may differ from slides in student pack

Current Trends in Supply Chain Management (Cont.)

The Greening of Supply Chains

- Producing, packaging, moving, storing, delivering and other supply chain activities can be harmful to the environment
- Supply chains will work harder to reduce environmental degradation
- Large majority (75%) of U.S. consumers influenced by a firm's environmental friendliness reputation
- Recycling and conservation are a growing alternative in response to high cost of natural resources

Current Trends in Supply Chain Management (Cont.)

Reducing Supply Chain Costs

- Cost reduction achieved through:
 - ▢ Reduced purchasing costs
 - ▢ Reducing waste
 - ▢ Reducing excess inventory, and
 - ▢ Reducing non-value added activities
- Continuous Improvement through
 - ▢ **Benchmarking**- improve over competitors' performance
 - ▢ Trial & error
 - ▢ Increased knowledge of supply chain processes

2016-17 Salary Information

Major	#	Low	Average	Median	High
MIS	72	\$29,120	\$55,288	\$56,500	\$75,000
SCM	61	\$24,960	\$51,870	\$50,000	\$70,000
Accounting	77	\$22,880	\$49,173	\$51,000	\$60,000
Finance	88	\$30,000	\$48,294	\$48,500	\$77,500
Marketing	72	\$20,800	\$45,541	\$45,000	\$70,000
Management	33	\$31,200	\$43,011	\$43,000	\$70,000
COB -All Majors	406	\$20,800	\$49,323	\$50,000	\$77,500

Average Salary By SCM Position* Job Advancement

Chief , Procurement/Supply Management/Sourcing	\$263,578
Vice President , Procurement/Supply Management/Sourcing	\$208,959
Director , Procurement/Supply Management/Sourcing	\$160,579
Manager , Procurement/Supply Management/Sourcing	\$114,170
Experienced Procurement/Supply Management Practitioner	\$96,685
Emerging Procurement/Supply Management Practitioner	\$77,595

*Source – 2018 ISM Salary Survey

Supply Chain Jobs...



Use our fantastic careers services: <http://www.business.iastate.edu/careers/>