

Chapter 11

Order Fulfillment Along the Supply Chain
and Other Support Services

Learning Objectives

1. Describe the role of support services in electronic commerce (EC).
2. Define EC order fulfillment and describe the EC order fulfillment process.
3. Describe the major problems of EC order fulfillment.
4. Describe various solutions to EC order fulfillment problems.
5. Describe RFID supply chain applications.
6. Describe collaborative planning and the CPFR model.
7. Describe other EC support services.
8. Discuss the drivers of outsourcing support services.

Order Fulfillment and Logistics: An Overview

- **ACQUIRING GOODS AND SERVICES**

- **order fulfillment**

All the activities needed to provide customers with their ordered goods and services, including related customer services

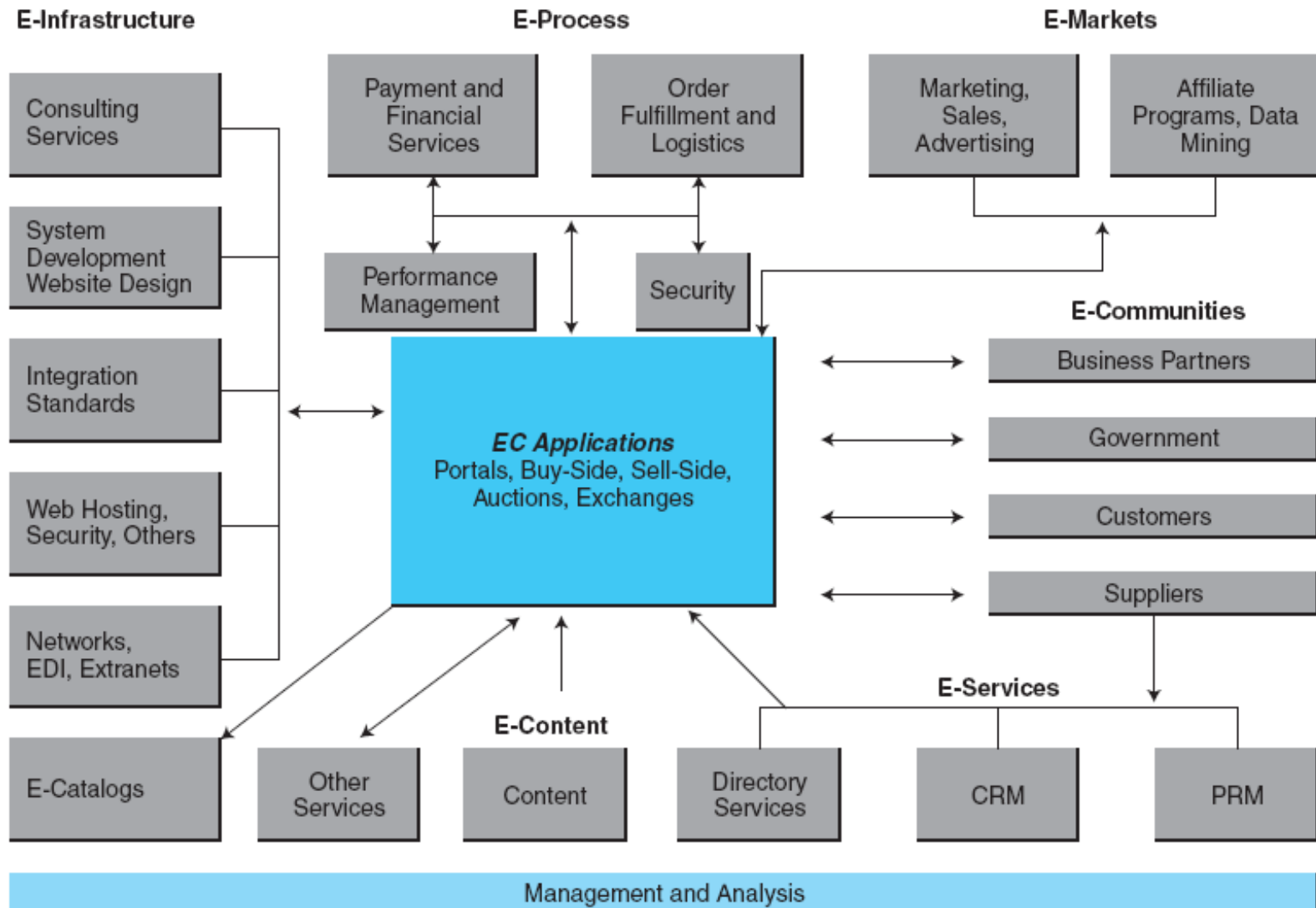
- **back-office operations**

The activities that support fulfillment of orders, such as packing, delivery, accounting, and logistics

- **front-office operations**

The business processes, such as sales and advertising, which are visible to customers

EXHIBIT 11.1 E-Commerce Services



Order Fulfillment and Logistics: An Overview

- **logistics**

The operations involved in the efficient and effective flow and storage of goods, services, and related information from point of origin to point of consumption

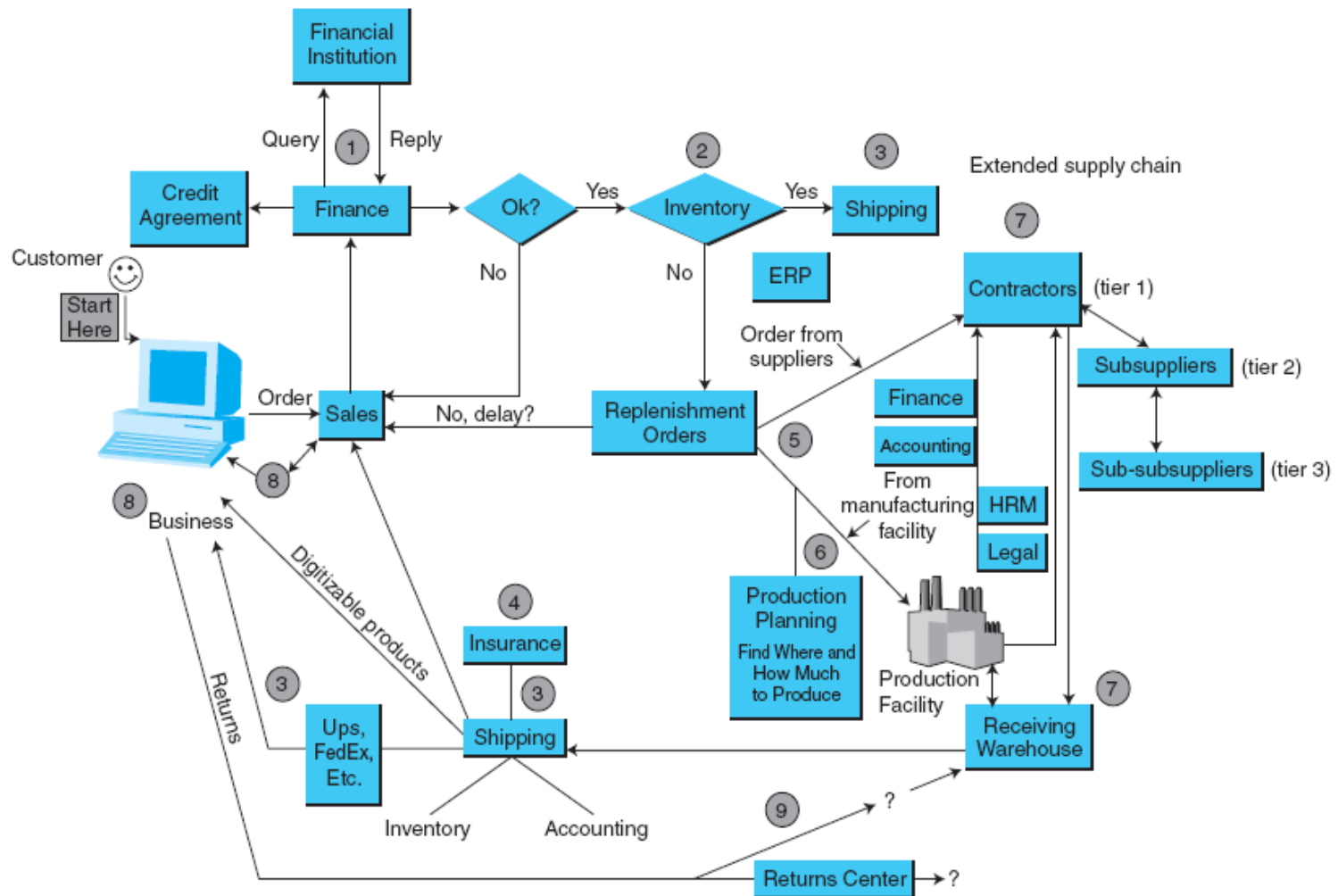
- **e-logistics**

The logistics of EC systems, typically involving small parcels sent to many customers' homes (in B2C)

EXHIBIT 11.2 How E-Logistics Differ from Traditional Logistics

Characteristic	Traditional Knowledge	EC Logistics
Type, quantity	Bulk, large volume	Small, parcels
Destinations	Few	Large number, highly dispersed
Demand type	Push	Pull
Value of shipment	Very large, usually more than \$1,000	Very small, frequently less than \$50
Nature of demand	Stable, consistent	Seasonal (holiday season), fragmented
Customers	Business partners (in B2B), usually repeat customers (B2C), not many	Usually unknown in B2C, many
Inventory order flow	Usually unidirectional, from manufacturers	Usually bidirectional
Accountability	One link	Through the entire supply chain
Transporter	Frequently the company, sometimes outsourced	Usually outsourced, sometimes the company
Warehouse	Common	Only very large shippers (e.g., Amazon.com) operate their own

EXHIBIT 11.3 Order Fulfillment and the Logistics Process



Note: Demand forecasts and accounting are conducted at various points throughout the process.

Order Fulfillment and Logistics: An Overview

- **THE EC ORDER FULFILLMENT PROCESS**

- Activity 1: Making sure the customer will pay
- Activity 2: Checking for in-stock availability
- Activity 3: Arranging shipments
- Activity 4: Insurance
- Activity 5: Replenishment
- Activity 6: In-house production
- Activity 7: Use contractors
- Activity 8: Contacts with customers
- Activity 9: Returns

Order Fulfillment and Logistics: An Overview

- **reverse logistics**
The movement of returns from customers to vendors
- **The Administrative Activities of Order Taking and Fulfillment**
- **Order Fulfillment and the Supply Chain**

Problems in Order Fulfillment Along Supply Chains

- **TYPICAL SUPPLY CHAIN PROBLEMS**
- **WHY SUPPLY CHAIN PROBLEMS EXIST**
 - **third-party logistics suppliers (3PL)**
External, rather than in-house, providers of logistics services
 - **Inefficient Financial Supply Chains Can Grind Businesses to a Halt**
 - **The Need for Information Sharing Along the Supply Chain**

Solutions to Order Fulfillment Problems Along Supply Chains

- **IMPROVEMENTS IN THE ORDER-TAKING ACTIVITY**

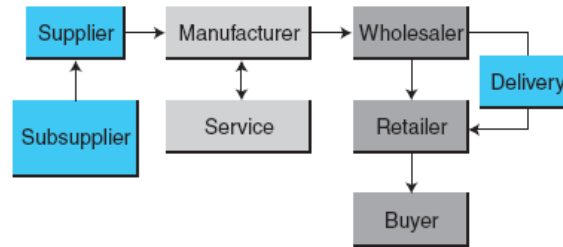
- **Electronic Payments in E-Commerce**

- **warehouse management system (WMS)**

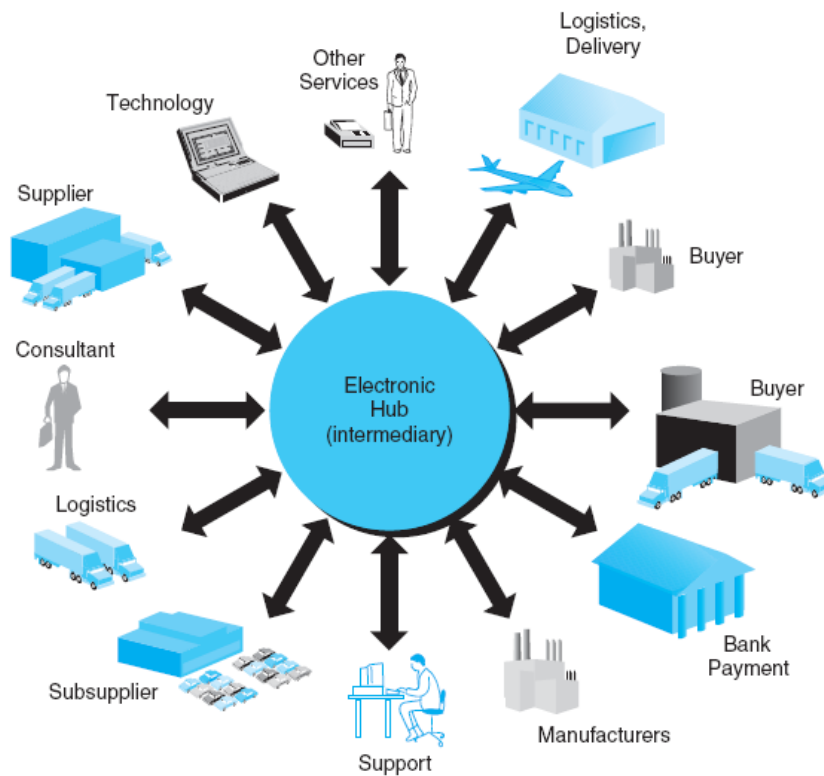
A software system that helps in managing warehouses

- **Other Warehousing and Inventory Management Improvements**
 - **Automated Warehouses**
 - **Using Wireless Technologies**

EXHIBIT 11.4 Changes in the Supply Chain



Traditional Linear Supply Chain



Hub-Based Structure of the Supply Chain

Solutions to Order Fulfillment Problems Along Supply Chains

- **SPEEDING DELIVERIES**
 - Same-Day, Even Same-Hour, Delivery
 - Supermarket Deliveries
- **PARTNERING EFFORTS AND OUTSOURCING LOGISTICS**
 - Comprehensive Logistics Services
 - Outsourcing Logistics

Solutions to Order Fulfillment Problems Along Supply Chains

- **INTEGRATED GLOBAL LOGISTICS SYSTEMS**
- **ORDER FULFILLMENT IN MAKE-TO-ORDER AND MASS CUSTOMIZATION**
 - **Fulfilling Orders**

Solutions to Order Fulfillment Problems Along Supply Chains

- **HANDLING RETURNS (REVERSE LOGISTICS)**
 - Return the item to the place of purchase
 - Separate the logistics of returns from the logistics of delivery
 - Completely outsource returns
 - Allow the customer to physically drop the returned item at a collection station
 - Auction the returned items

Solutions to Order Fulfillment Problems Along Supply Chains

- **ORDER FULFILLMENT IN B2B**
 - Using BPM to Improve Order Fulfillment
 - Using E-Marketplaces and Exchanges to Ease Order Fulfillment Problems in B2B
 - Order Fulfillment in Services

Solutions to Order Fulfillment Problems Along Supply Chains

- **OTHER SOLUTIONS TO SUPPLY CHAIN PROBLEMS**

- **visibility**

The knowledge about where materials and parts are at any given time, which helps in solving problems such as delay, combining shipments, and more

- *Order fulfillment*
 - *Managing risk*
 - *Inventories can be minimized*
 - *Self-service*
 - *Collaborative commerce*

Solutions to Order Fulfillment Problems Along Supply Chains

- **INNOVATIVE E-FULFILLMENT STRATEGIES**

- **merge-in-transit**

Logistics model in which components for a product may come from two (or more) different physical locations and are shipped directly to the customer's location

- **rolling warehouse**

Logistics method in which products on the delivery truck are not preassigned to a destination, but the decision about the quantity to unload at each destination is made at the time of unloading

Solutions to Order Fulfillment Problems Along Supply Chains

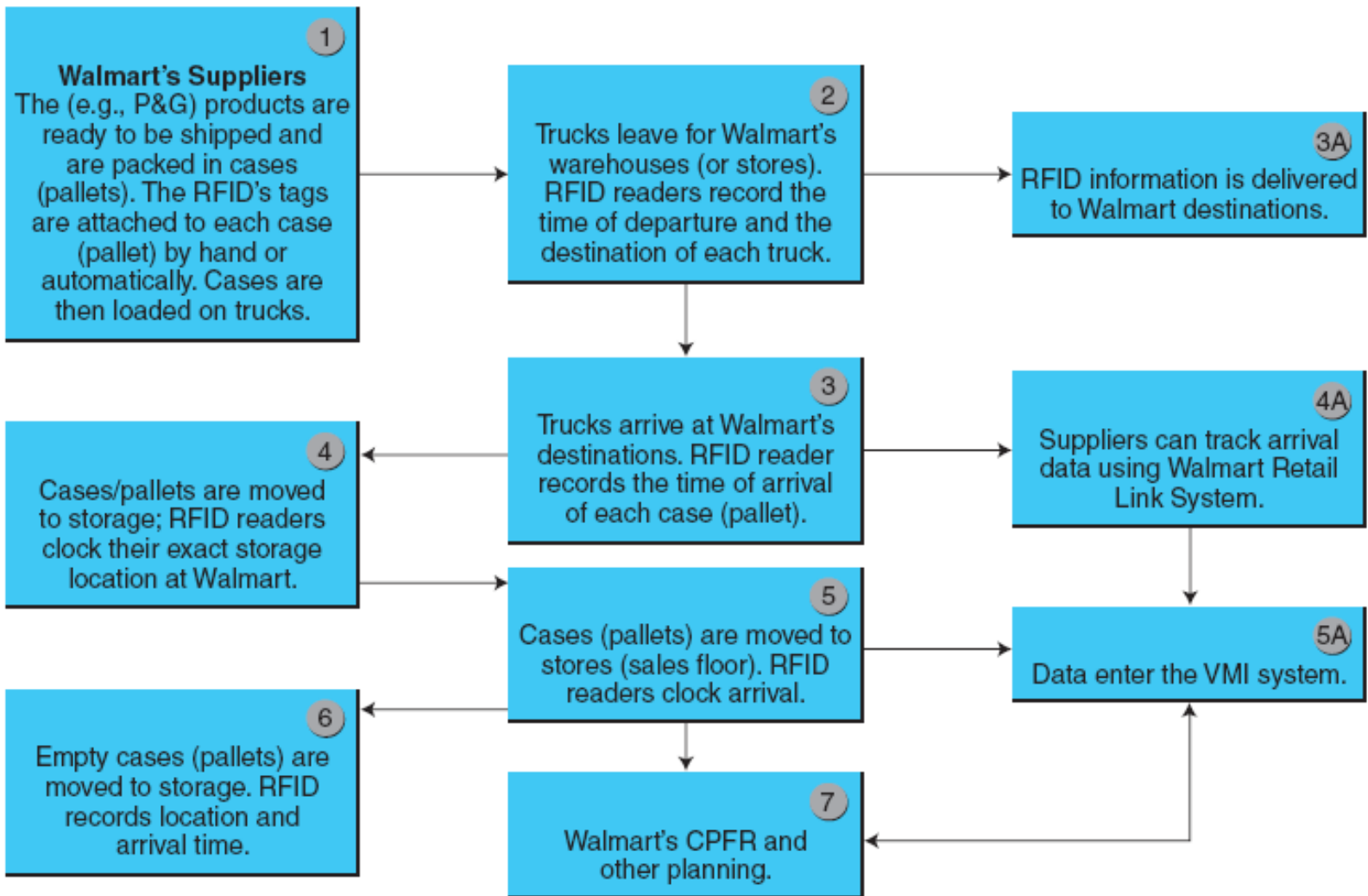
- **Example: A World-Class Supply Chain and Order Fulfillment System Works at Dell**
- **Integration and Enterprise Resource Planning**
- **The Supply Chains of Tomorrow**

RFID and CPFR as Key Enablers in Supply Chain Management

- **radio frequency identification (RFID)**

Tags that can be attached to or embedded in objects, animals, or humans and use radio waves to communicate with a reader for the purpose of uniquely identifying the object or transmitting data and/or storing information about the object

EXHIBIT 11.5 RFID at Walmart and Its Suppliers: The Seven-Step Process



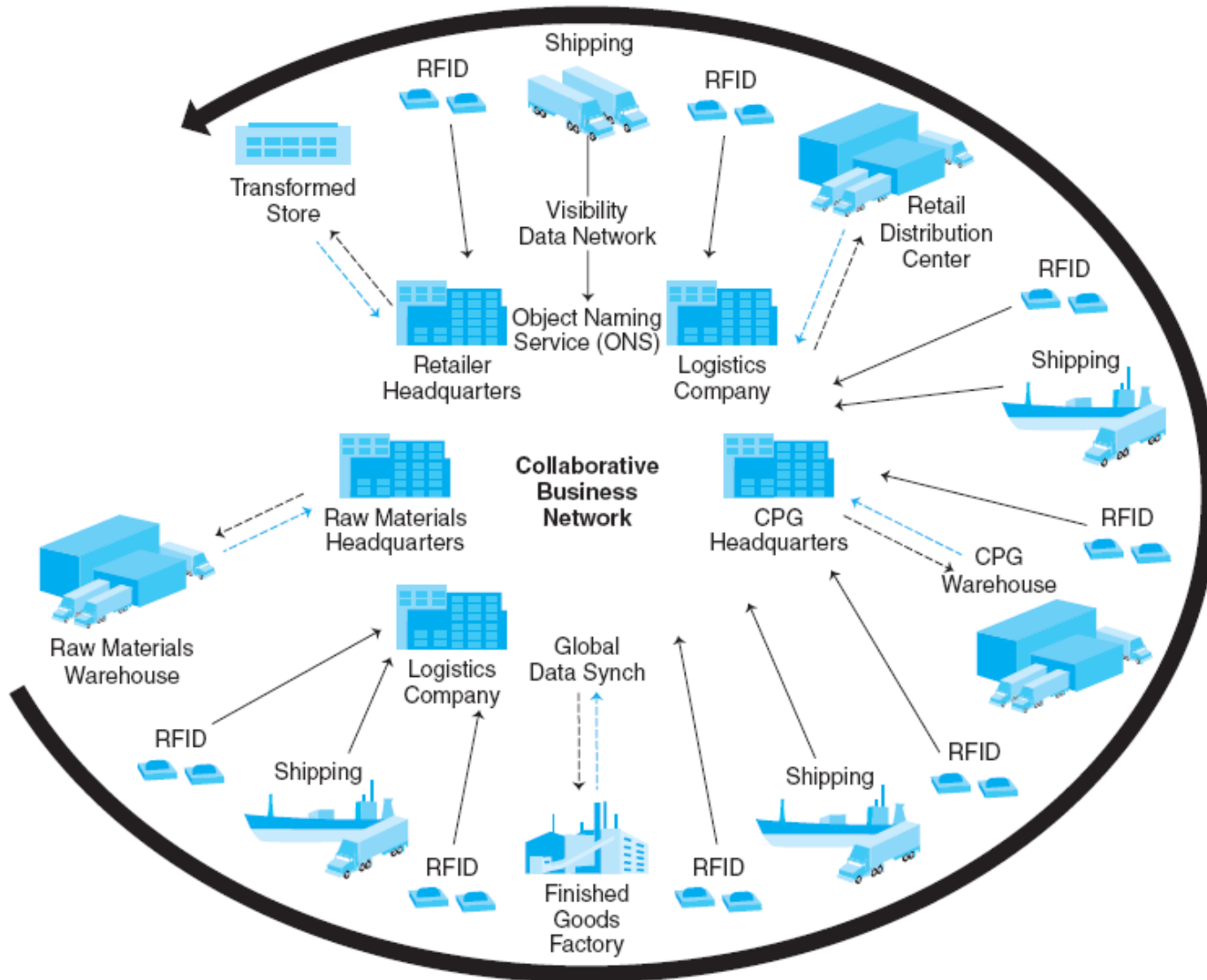
RFID and CPFR as Key Enablers in Supply Chain Management

- **RFID APPLICATIONS IN THE SUPPLY CHAIN AROUND THE GLOBE**
 - **RFID at Metro AG-Germany**
 - **RFID at Starbucks**
 - **RFID at Deutsche Post (Germany)**
 - **RFID in the Federal Government (U.S. Department of Defense)**

RFID and CPFR as Key Enablers in Supply Chain Management

- **RFID at Atlantic Beef Products (Ontario, Canada)**
- **RFID at Yodobashi Camera Handles Inventory of About 1 Million Items (Japan)**
- **RFID in Pharmaceuticals**
- **Jeweler Gains Efficiency and Improves Customer Service with RFID (India)**
- **Other Uses**

EXHIBIT 11.6 Digital Supply Chains

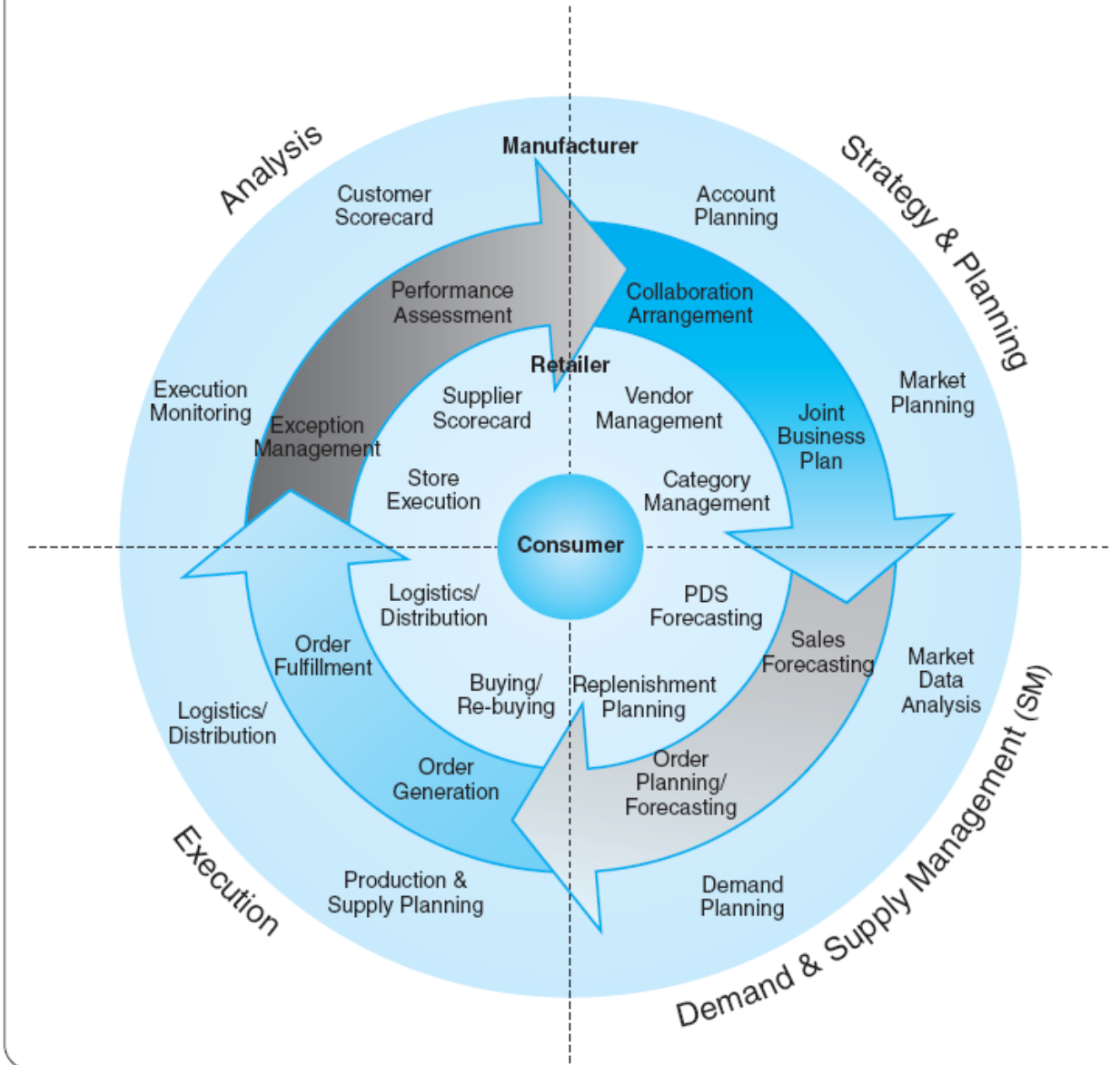


RFID and CPFR as Key Enablers in Supply Chain Management

- **collaborative planning, forecasting, and replenishment (CPFR)**

Project in which suppliers and retailers collaborate in their planning and demand forecasting to optimize flow of materials along the supply chain

EXHIBIT 11.7 CPFR Model



Other E-Commerce Support Services

- **CONSULTING SERVICES**
 - **Online Consulting**
 - **Directory Services**
 - **Newsletters**
 - **Search Engines and News Aggregators**

Other E-Commerce Support Services

- **MORE EC SUPPORT SERVICES**

- Trust Services
- Trademark and Domain Names
- Digital Photos
- Global Business Communities
- Access to Commercial Databases
- Knowledge Management
- Client Matching
- E-Business Rating Sites
- Security and Encryption Sites
- Web Research Services
- Coupon-Generating Sites

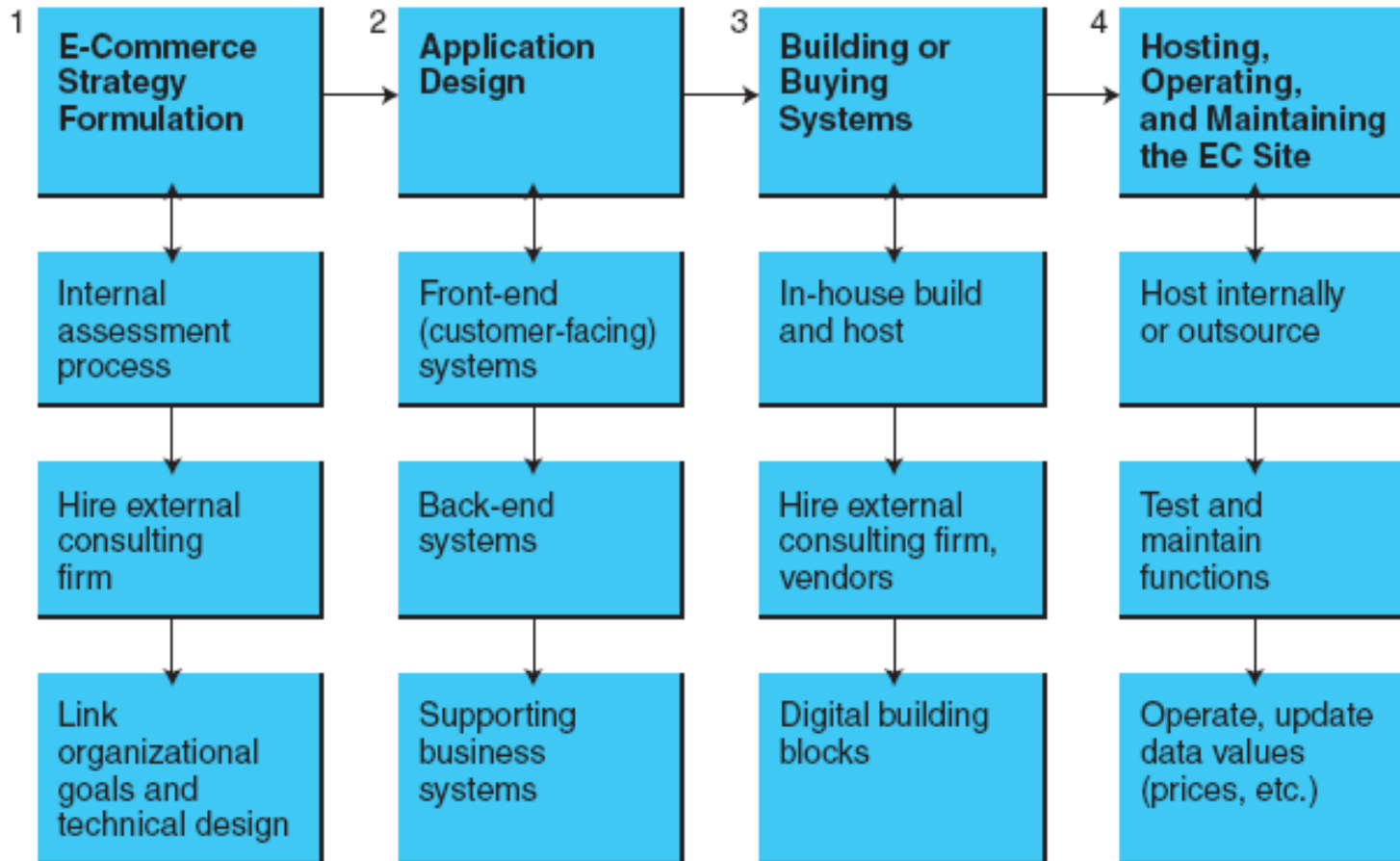
Other E-Commerce Support Services

- **OUTSOURCING EC SUPPORT SERVICES**

- **Why Outsource EC Services?**
- **IT Outsourcing and Application Service Providers**
 - **application service provider (ASP)**

An agent or vendor who assembles the functions needed by enterprises and packages them with outsourced development, operation, maintenance, and other services

EXHIBIT 11.9 E-Commerce Application Development Process

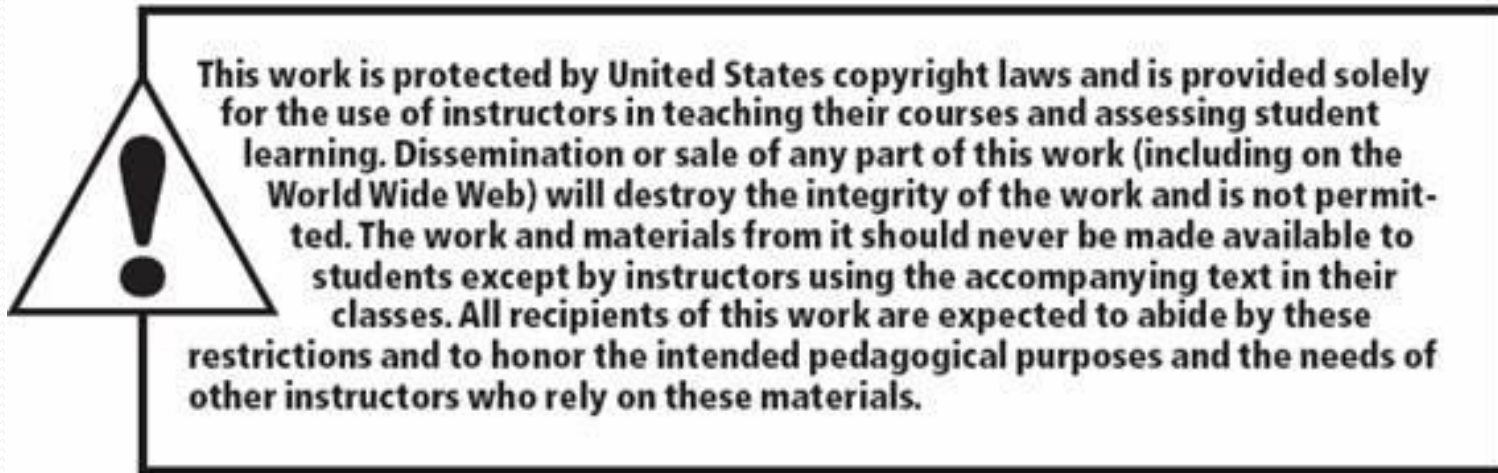


Managerial Issues

1. If you are an EC vendor, what is the bottleneck in the order fulfillment process?
2. For which items should we keep our own inventory?
3. What is the alliance strategy in order fulfillment?
4. How should we manage returns?
5. What logistics information should we provide to customers?
6. Should we use RFID for the order fulfillment?
7. Can we use CPFR in SMEs?

Summary

1. The role of support services in EC
2. The order fulfillment process
3. Problems in order fulfillment
4. Solutions to order fulfillment problems
5. RFID tags
6. Collaborative planning and CPFR
7. Other support services
8. Outsourcing EC services



All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the publisher. Printed in the United States of America.

**Copyright © 2012 Pearson Education, Inc.
Publishing as Prentice Hall**